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ŽANRU KONTEKSTUALIZĀCIJAS UN RETORISKĀS ORGANIZĀCIJAS ASPEKTI ANGĻU VALODAS RAKSTVEIDA SAZIŅĀ INFORMĀCIJAS TEHNOLOĢIJU JOMĀ

GENRE CONTEXTUALISATION AND RHETORICAL ORGANISATION ASPECTS IN ENGLISH WRITTEN COMMUNICATION FOR INFORMATION TECHNOLOGIES

Promocijas darbs

filoloģijas doktora grāda iegūšanai
valodniecības zinātņu nozarē
lietišķās valodniecības apakšnozarē

zin. vadītāja *Dr. philol.* asoc. prof. I. Karapetjana

Rīga 2014

Šis darbs izstrādāts ar Eiropas Sociālā fonda atbalstu projektā «Atbalsts doktora studijām Latvijas Universitātē».

This work has been supported by the European Social Fund within the project «Support for Doctoral Studies at University of Latvia».

Эта работа выполнена при содействии Европейского социального фонда в рамках проекта «Поддержка развития докторантуры ЛУ».

Anotācija

Promocijas darbā tiek analizēta un sistematizēta rakstveida saziņa angļu valodā informācijas tehnoloģiju jomā. Pētījums pamatojas uz salīdzinošu valodniecības un lietišķās valodniecības teoriju analīzi par valodas funkcijām, saziņas modeļiem, konteksta veidiem, diskursu un žanru un empīriskā pētījumā iegūtiem rezultātiem Latvijas, Igaunijas, Krievijas un Baltkrievijas uzņēmumos.

Promocijas darbā apskatītie valodniecības jautājumi, kā arī izdarītie secinājumi pierāda, ka rakstveida profesionālo saziņu IT nozarē raksturo komunikatīvo mērķu, retoriskās organizācijas un lingvistiskās izvēles (tekstveides perspektīva) mijiedarbība, kā arī profesionālie diskursa procesi, kuri atspoguļojas žanru dinamiskajā sistēmā ar hierarhiskām, konsekventām un starpdiskursu attiecībām (sociāla perspektīva).

Atslēgvārdi: orzanizāciju diskurss, žanra analīze, konteksta veidi, retoriskā organizācija.

Abstract

The present Doctoral thesis provides a comprehensive analysis of English written communication for information technologies. The research is grounded in the linguistic and applied linguistic theories on language metafunctions, communication models, types of context, discourse and genre analysis.

The investigated theoretical framework as well as the findings of the empirical research conducted in Latvian, Estonian, Russian and Belorussian IT enterprises prove that written professional communication in the IT domain is governed by the interaction of the communicative aims, rhetorical organisation and linguistic choice (the textual perspective) as well as by the recurrent discursive practices of the members of discourse community resulting in genre dynamic network, possessing hierarchical, sequential and interdiscursive relations (the social perspective).

Key words: organizational discourse, genre analysis, types of context, rhetorical organization.

Acknowledgements

I would like to express sincere words of gratitude to a great many collegues without whose encouragement and support this research would not have been feasible.

First, I would like to thank Dr. Indra Karapetjana, my academic supervisor and mentor who has always inspired me with her utmost profesionalism, energy, enthusiasm and words of wisdom. She has created favourable conditions for me to grow as a scholar, researcher and teacher providing the right amount of empowerment, autonomy and empathy.

Secondly, I would like to express my gratitude to the Board of professors in linguistics at the University of Latvia for the financial support within the framework of the ESF project „*Support for Doctoral Studies at University of Latvia*".

I also wholeheartedly thank the authorities at Riga Technical College, in particular Dr. Jānis Rozenblats and Dr. Inta Klotiņa, for the financial support during the first year of research as well as for allowing me to continuously pilot the obtained research results.

I am also grateful to all the respondents in the sample for knowledge sharing and willingness to contribute during the data collection as well as to the top management of the companies in question for the permission granted to conduct the interviews and administer the questionnaires in the first place and sharing documents for discourse analysis.

Many thanks to my first English language teacher Mrs. Tamara Turele and my first university tutor Ms. Vilma Rapa who have contributed enormously to the development of my English language proficiency and inspired me to pursue language studies as a career. I would also like to express my gratitude to my department colleagues for their words of inspiration and constructive criticism.

My dearest thanks go to my family members who have been very supportive and understanding at all times and whose encouragement has given me the confidence to believe in myself and persistence to endure through hard times.

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The List of Abbreviations and Acronyms

DA- Discourse analysis

ESP-English for Specific Purposes

EST –English for Science and Technology

ICT- Information and Communication Technologies

IT- Information Technologies

PMI- Project Management Institute

QA- Quality Assurance

SFL- Systemic Functional Linguistics

GLOSSARY

The glossary below contains the key concepts crucial for the present research. It reflects the author's point of view on the terms in question and has been compiled to guide the readers through the paper.

The ideational (transactional) language metafunction conveys experiences, actions of participants or conceptual phenomena. (Halliday and Mathiessen, 2004)

The interpersonal (interactional) language metafunction expresses attitudes and relations among participants and treats 'language as reflection'. (Halliday and Matthiessen, 2004: 31- 30)

The textual metafunction enables the participants to "build up sequences of discourse, organizing the discursive flow and creating cohesion and continuity as it moves along". (Halliday and Matthiessen, 2004: 30)

Context is the environment in which a spoken utterance or a written sentence is produced and which makes it meaningful. Context can be described in the form of linguistic predictability (Eggins, 2004), communication models (Bùhler, 1934; Jacobson, 1960) or context structural elements (Firth, 1957; Hymes, 1972; Munby,1978; Halliday, 1994; Fairclough, 1995; Conrad, 2001; van Dijk 2004 a.o.)

Co-text is the local linguistic context (M. and A. Hewings, 2005) or the previous discourse co-ordinate (Brown and Yule 1989), i.e. the linguistic features that contribute to text cohesion.

The wider linguistic context describes the way in which a particular text relates to other texts, and the way in which our interpretation of a text is influenced by our previous experience of other texts manifested through intertextuality. (M. and A. Hewings, 2005)

The local situational context comprises the time, the location, the age and gender of participants, their relative status and other situational elements. (M. and A. Hewings, 2005)

The wider socio-cultural context is the broader background against which communication is interpreted and includes social and political aspects of language or national groups, as a whole, and features of institutional domains. (M. and A. Hewings, 2005)

Discourse is a unit of language beyond the sentence; language use for the realisation of definite functions; language as a reflection of a social practice. (Schiffrin, 1994)

Text is a stretch of sentences taken separately from its context, whereas discourse is analysed within its context. Discourse is the process of meaning construal and negotiation. Text is its product. (Cook, 2001; Widdowson, 2003)

Discourse analysis is a set of practices to investigate the instance of purposeful use of a language unit larger than a sentence descriptively or critically.

Organisational discourse is the interrelated and structured collections of texts which reflect and form organisational practices and culture. They involve context-sensitive language use exposed to plurivocality, i.e. a multiple phenomena unveiled for analysis at a time, negotiation of meaning, intertextuality, cognitive approaches and reflexivity.(Grant et al, 2004)

Discursive practice is an activity, procedure or operation which is performed by a member of a discourse community and is generically (textually) documented.

Genre is the representation of a documented communicative event associated with a set of discursive practices and communicative purpose(s) recognised and consumed by the members of the academic or professional community in which it recurrently occurs. (Swales, 1990).

Intertextuality- is the phenomenon that texts/genres are overtly related to other prior texts/genres, which is typically expressed through explicit surface textual features such as references, quotations and citations. (Kristeva, 1980)

Interdiscursivity refers to how a text is constituted by a combination of other language conventions (genres, discourses, discursive practices). (Fairclough 1995, Bhatia 2010) Interdiscursivity involves the whole language system referred to in a text and is concerned with the implicit relations between discursive formations rather than the explicit relations between texts and, as a result, accounts for the attempts to create hybrid, relatively novel, embedded constructs by appropriating the existing genres and discursive practices.

Genre ecology, **genre constellation or genre network** is an analytical framework for studying how professionals use multiple artifacts – such as technical documentation, interfaces, and annotations – to mediate their work activities performed cyclically. It is characterised by interpretation, contingency, and stability. (Spinuzzi, 2004) The genres are viewed as stabilised (English for Specific Purposes) or stabilised for now (the New Rhetoric Studies).

Genre chain is a sequential genre organization when they are set in their chronological order of occurrence. (Swales, 2004) Other scholars (e.g. Berkenkotter , 2001) use the term **genre system.**

Genre hierarchy is a sequential genre organisation which implies ordering different genres in the order of importance and prestige, determined by interdiscursive processes. The ranking may alter in various spheres and geographical locations. (Swales, 2004)

Genre repertoire is a dynamic developing genre network with non-sequential overlapping nature of relation among genres since the members of discourse community are exposed to several genres at a time. (Orlikowsky and Yates, 1994)

Genre colony is grouping a number of genres within and across disciplinary domains which largely share their communicative purposes. (Bhatia, 2004)

Genre sets is individual genre ordering, e.g. within one company. (Swales, 2004)

Genre integrity is the characteristic feature of a genre to possess explicit linguistic means, e.g. discursive patterns and lexico-grammar pertinent to genre, applied on a regular basis, produced and consumed by a discourse community and forming recognisable genre structural identity. (Bhatia, 1999, 2001; Hyland , 2000)

Genre conventionalism is the tendency of a genre to retain its recognisable linguistic means.

Genre dynamism is the tendency of a genre to change its recognisable linguistic means, e.g. rhetorical organization and lexico-grammar in response to the changes of discursive processes.

Genre contextualization is locating genre in its naturally occurring environment and the analysis of linguistic means inseparably from its local situational and wider socio cultural context.

Genre recontextualisation is the process of locating genre in a different situational context manifested in information transfer fully or partially from one genre to another resulting in different rhetorical structure and recurrent lexico-grammatical means (e.g. the transfer of information of business requirements into a system architecture), sometimes referred to as generic intertextuality (Lemke, 2005)

Rhetoric is the process a writer uses to produce a specific set of purposes for a specific set of readers. (Trimble, 1985)

Super-genre- is an overarching genre. (Devitt, 1991)

Sub-genre a distinguished part of a genre. (Devitt, 1991)

The move corresponds to a single communicative event with a certain communicative purpose. (Swales, 1990)

The steps refer to structural objectives to achieve the goal of a move within one sub-genre or genre. (Swales, 1990)

Text types (Biber, 1988; Paltridge, 1996**;** Crombie, 1985), **rhetorical structures** (Widdowson, 1973), **types of text structure** (Meyer, 1975), **rhetorical patterning** (Hoey, 1983), **rhetorical organisation patterns and orders** (Trimble, 1985), **schematic structures** (van Dijk 1988, Martin and Rose 2007) refer to regularities of structural elements of discourse organisation and rhetorical processes.

Cohesion is the set of semantic or syntactic resources for constructing relations in discourse which transcend grammatical structure. (Halliday 1994: 309)

Processes are "a flow of events chunked into quanta of change by the grammar of the clause: each quantum of change is modelled as a figure — a figure of happening, doing, sensing, saying, being or having." (Halliday and Mathiessen, 2004: 170)

Material processes reflect the action which "construes a quantum of change in the flow of events as taking place through some input of energy" and is limited in time, in other words that action which is done or happens in the material world. (Halliday and Mathiessen, 2004: 179)

Relational processes describe, identify and outline the features of a an object . (ibid.)

Mental processes represent the way a "senser" experiences the world as a thought, a perceprion or an emotion. (ibid)

Existential processes point at the occurrence of a phenomenon and mostly formed with the help of 'existential' there.(ibid.)

INTRODUCTION

General description of the study and topicality of the theme

Describing the background and the wider situational context of the study, recent decades have been marked with a breakthrough in development and tremendous discoveries in various branches of technology as well as increased information flow. One of the most dynamic spheres that has undergone immense change and offers multi-faceted sub-branches with complex communication frameworks, for example, social networks, software development, system and network design and administration and igaming is Information Technologies (hereafter referred to as IT). The English language has been playing a crucial role in these processes serving as a *lingua franca* for professionals' communication, expertise exchange, training and knowledge management, coining the terminology, conducting research, publicising results and applying innovative solutions in business environment.

Moreover, the headquarters of leading software development companies, hardware manufacturers and service providers such as Apple, Microsoft, Hewlett Packard, Facebook are located in the USA, which contributes to the tendency of the ultimate domination or even hegemony of the English language in this domain.

IT is an integral part of any business these days, and it has infiltrated every business operation and process, even if the primary scope of business is non-IT related, which enlarges the stakeholders of the research results. Business environment, in its turn, has become interdisciplinary, encouraging integration, cooperation, mobility, and continuous learning, breaking traditional professional stereotypes, which also facilitates the spread and rapid development of IT. The English language serves as a tool to achieve the aforementioned goals, setting new tasks and assessment criteria for technical and managerial staff who should get involved in the process of communication, forming organisational discourse at all business levels with both internal and external interlocutors and, thus, should possess a broad range of competences to meet the requirements of the current highly competitive and volatile global market.

In the context of Latvia, having joined the European Union, NATO and having established close partnerships with other international organisations and bodies, the English language has become the main means of written and spoken communication for local specialists in numerous branches of technology and a priority in the national development plan (2007-

2013). In the conditions of the world economic crisis and unstable globalised economy, the IT&T sphere in Latvia remains one of the most promising due to the fact that most locally based companies operate internationally and provide outsourcing activities (e.g. Exygen, Dati, Accenture, Tieto, CTXM, CTCo, CTE Media, a.o.), with English being as the primary means of communication.

As a result, IT professionals at all management levels are extensively exposed to processing, compiling, drawing up and reviewing documentation in English these days. The empirical results of the study reveal that two sets of technical, project management, quality assurance and operational documentation are drawn up: one in Latvian for internal use and reporting to local authorities and the other in English for communicating with partners and clients.

According to Trumpe, the former head of Microsoft Latvia, IT development prospects in Latvia depend on the export and the design of specific niche products with high added value. (Online 1)

The success of unique customised technical solutions depends on IT professionals' ability to communicate them to customers in the process of agile software development, persuading them to choose the most beneficial one, meeting their expectations, highlighting the unique selling points and features, accompanied by qualitative technical support documentation. Employees at all levels are involved in the process of communication with clients in English; hence, IT professionals, project managers and heads of departments are required to possess the knowledge of professional genres, and operate this knowledge, skills and attitudes that constitute the communicative language competence for a successful professional activity. This highlights the paramount significance of the concept of professional genres at a work place in IT organisational discourse.

Thus, the abovementioned economic conditions in the IT domain in Latvia and its rapid development worldwide, the needs of the local and international IT discourse community to possess and further develop the knowledge of professional genres in English to function successfully in the international business environment have determined the theme of the present research:

Genre Contextualisation and Rhetorical Organisation Aspects in English Written Communication for Information Technologies.

The study has been envisaged to analyse and systematise the English language applied in IT for professional purposes and explore the discursive and generic principles, underlying written communication in this domain in qualitative terms, quantitative being secondary.

The methodological framework combines several major mutually complementary strands of linguistic investigation, i.e. situational, discourse and genre analysis.

Novelty of research

The novelty of this study stems from the uniqueness of the compiled corpus/ text database and the theoretically based systematic analysis of language use of the IT written professional communication.

The study contributes to an understanding of applied genre theories and reveals the guiding discursive and generic peculiarities of organisational documentation based on the comprehensive evidence obtained from multiple sources, i.e. the administered questionnaires and conducted interviews with the IT discourse community members, discourse and genre analysis of documentation.

The international community of researchers has predominantly explored the use of English for Science and Technology for academic purposes (e.g. Trimble, 1985; Swales, 1990, 2004), CLAVIER (*Corpus Linguistics and Language Variation in English Research*) Research Centre founded by the Universities of Bergamo, Firenze, Modena and Reggio Emilia, Roma La Sapienza and Siena a. o.). Genre and discourse analysis scholars have undertaken their research activities in other domains, e.g. classroom discourse (Widdowson, 1973, 2003), discourse of advertising (Cook, 2001); legal discourse (Bhatia, 2008); discourse of institutions (Martin and Christie, 2000); political discourse (Fairclough and Wodak, 1997); a.o.), setting IT aside since it is difficult to compile a corpus for analysis due to the confidentiality and non-disclosure policies of enterprises to protect innovative solutions from industrial espionage.

The research investigating language use in technical communication is fragmented and considers either one framework or one genre at a time, for instance, the rhetorical structure of technical reports (Bartholomew, 1993), the thematic progression in engineering documents, applying the Hallidayan framework (McKenna, 1997); the communicative purpose and organization of spoken disourse in engineering (Seliman, 1995), genre analysis of procedure documents and work instructions (Klein and McKenna, 1997), rhetorical construction in procedural texts (Farkas, 1998), target readership orientation writing technical instructions (Mulcany 1988), genre obscurity and hybridity in technical communication (Bhatia, 1995).

Conversely, the author of the paper proposes to investigate the written genres pertinent to IT organisational communication at a macro-level as a consistent system and identify social, communicative, rhetorical and lexicogrammatical peculiarities.

The investigations conducted in Latvia based on discourse and genre theories characterise English for Finance, academic and scientific English, advertising and legal English (University of Latvia (UL), Faculty of Humanities, Riga Technical University (RTU), Institute of Applied Linguistics). The use of English for IT has been explored mostly in relation to terminology transfer, coining neologisms and other translatology problems (RTU, Institute of Applied Linguistics, UL, Faculty of Humanities, Department of Contrastive Studies, Translation and Interpreting).

Thus, the twofold **aim** of the present study is the following:

1. to develop a consistent model for discourse and genre analysis of English written communication in IT organisations;
2. to describe the contextual, rhetorical and textual aspects pertinent to IT written organisational discourse.

The following **enabling objectives** have been formulated in order to ensure the achievement of the set aim:

1. to do a comparative analysis of linguistic and applied linguistic theories on language functions, communication models, types of context, discourse as such and organisational discourse in particular as well as genre analysis in order to establish a sound theoretical framework for the empirical research;
2. to conduct a case study in order to investigate the institutional situational context in which English written communication for IT occurs;
3. to determine recurrently used genres in IT written discourse on the basis of the questionnaires and interviews of discourse community members and to compile an annotated and marked up corpus/ text database;
4. to conduct discourse and genre analysis in order to systematise the network of genres used for written communication in the IT domain, state their communicative aims and rhetorical organisation and identify pertinent linguistic peculiarities;
5. to draw relevant conclusions.

To achieve the aim the following **hypothesis** has been formulated:

Written communication in information technology organisations is governed by the discourse community members' recurrent discursive practices resulting in the formation of genre

dynamic network well as the interaction of the communicative aims, rhetorical organisation and linguistic choice [of the genres].

The paper has been envisaged as **qualitative interpretive cross-sectional research** with quantitative research elements that is the frequency analysis of linguistic units, where applicable, using Oxford Wordsmith Tools 6.0 software. Hence, it determines **the theoretical research framework**, which is of comparative and holistic nature. It comprises the analysis of secondary sources of the selected linguistic and applied linguistic theories that approach the English language used in the IT domain from social, discourse-analytical, and systemic-functional perspectives.

The empirical research method is a descriptive case study with exploratory and explanatory elements since language use in a professional setting is the **object** of the present research. According to R. K. Yin's definition, the case study research method is "an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used" (1984:23).

Prior to commencing the research, the following **research questions** have been formulated, which is required by the qualitative interpretative nature of the investigation:

1. What are the recurrently encountered genres in IT written professional communication? What are their communicative aims and underlying discursive practices?
2. What generic peculiarities are pertinent to written communication in English for professional purposes in the IT domain in the target sample?
3. What discursive features are characteristic of written communication in English for professional purposes in the IT domain?

The triangulation of theories and research tools is applied to ensure the reliability and validity of the study. The research tools for data collection account for construct validity, which is achieved by applying the correct measures for the research and reduce idiosyncratic risk. The cause and effect nature of the investigated problem ensures internal validity and allows the author to build a consecutive chain of multiple evidence. Providing the hypothesis is validated, the research results may be generalized and the theoretical model may be applicable for the analysis of language use in other technical domains. Alongside theoretical literature review, it meets the demands of external validity. Reliability requires accuracy and precision of all

procedures, which is partially achieved by means of using software as well as the documentation and multiple use of the obtained results.

The research is based on the author's fourteen-year English for Science and Technology (EST) teaching experience at Riga Technical College and in the relevant professional settings as well as on the participation in a number of local and international projects in English for Specific Purposes (ESP). Nevertheless, the author has taken the **etic** researcher's perspective, "an outsider's view during the data gathering" to account for construct validity. (Brown, 2004: 486) The **emic** perspective has been adopted to compile the corpus/ text database in order to ensure knowledge as well as linguistic data sharing and transfer.

The research sample for gathering the data from the interviews included 136 participants: upper- intermediate to advanced level target language users (junior technicians to middle level managers) employed by IT companies in Latvia, Estonia, Belarus and Russia at Company A (software development for business operations sector), Company B (igaming and gambling software development), Company C (software development for mobile devices and social networks in the USA and Asia), Company D (software development for instant messengers), Company E group (systems and network administration, software development for social networks), Company F (corporate IT solutions for industry), Company G (corporate IT solutions for banking and finance, including the administration of e-banking systems). Their English language proficiency level was determined at the job interview and was further verified by a certified Pearson Test of English assessor. The research has been conducted from the academic years 2006/2007 to 2013/2014, during which the research results were constantly piloted in the relevant professional setting and at Riga Technical College (RTC).

The theoretical value of the research lies in the elaboration of a theoretical framework for profound discourse and genre analysis of language use in IT. The theoretical framework and the overall research design may be transferred to other professional domains (e.g. electrical engineering, logistics, telecommunications, etc.) achieving similar aims, thus, ensuring the generalisability of the study. The existing research papers addressing similar issues are scarce, which leads to the fact that the study is likely to advance knowledge in the field.

The research highlights the importance of genre theory and contributes to the development of the concepts of applied genre analysis, intertextuality and interdiscursivity of professional genres.

The practical value of the research is justified by the fact that a unique corpus of IT professional documentation in English consisting of 2,224,603 tokens has been compiled for

discourse and genre analysis, which has not been done previously due to the confidentiality and non-disclosure policies of enterprises to protect innovative solutions from industrial espionage. A corpus of 366,185 words has been used to identify discourse organisational (rhetorical) structure and lexico-grammatical peculiarities. The professional genres are not viewed and investigated in isolation but embedded in the social context of discursive practices and the intertextual network (Swales, 2004), colonies (Bhatia, 2004) or ecologies of genres (Spinuzzi, 2004).

The target audience, who may explicitly benefit from the results of the present research, are the students of Riga Technical College (RTC), i.e. non-native language users/learners of pre-intermediate to advanced level acquiring the first level of higher professional education in IT as well as students in other educational institutions, technicians, developers, system administrators, test engineers, lower and middle level management employees and other stakeholders in various IT sub-branches.

The insufficient previous research of linguistic phenomena in the IT field has led to the absence of consistent conventions for drawing up technical documentation, which, in turn, has led to the variety and obscurity of professional genres in IT (e.g. *Microsoft Book of Style for Technical Writing* considers only lexico-grammatical means, selected rhetorical patterns and the aspects of punctuation.). Therefore, the results of the present research might contribute to the creation of conventions of professional genres considering the local situational context and communicative events, genre rhetorical features and recurrent lexico-grammar.

The research findings might also be applicable for aligning the higher education curriculum in IT, project management and quality assurance with the market needs and employers' requirements. The research findings may be implemented for syllabus improvement, materials review and design as well as professionals' in-house training to facilitate the development of communicative language competence on-site in accordance with professional communicative events.

The analysis of the study materials reveals that only several books have been published recently in English for ICT with heavy emphasis on vocabulary input (e.g. *Professional English in Use ICT* Student's Book (S. R. Esteras and E. M. Fabre, 2007) or skills development for specific academic purposes (e.g. *English for ICT Studies in Higher Education Studies* (P. Fitzgerald, M. McCullagh and C. Tabor series edited by T. Phillips, 2011). However, the resources fostering genre awareness, genre rhetorical structure, genre dependency on communicative aims and social events, genre intertextuality and interdiscursivity in a

professional setting on the basis of genre or discourse analysis are scarce. The topic-based type syllabus with the integration of reading skills prevails in the educational institutions of Latvia (e.g. Riga Technical College, Riga Technical University, Latvian Agricultural Academy) due to a large number of students in one group and dependency on course materials.

Moreover, the Dean of the Faculty of Computing at the University of Latvia, Latvian ICT Association officials, the representatives of leading IT companies in Latvia claim that the shortage of qualified and experienced IT professionals possessing a set of relevant competences, the communicative language competence being one of them, is obvious due to emigration, shift of priorities of younger generation and lack of awareness of the prospects of the IT industry in Latvia. M. Kozlova, a representative of Exigen Services, a large IT service provider in Latvia and worldwide, supposes that measures should be taken by companies on-site providing the opportunities for continuous and sustainable training as well as by educational institutions reviewing academic programs and developing the competences required by the dynamic labour market, which can be bridged by the present research. (Online 2).

IT specialists' profession standards of the Republic of Latvia (e.g. developers, test engineers and system administrators) may also be updated on the basis of the research results specifying the generic and discourse competences required for the efficient professional activity as the actual situation in the labour market requires.

The theoretical research framework involves the comparative analysis of recent linguistic theories with the aim to form a sound basis for the planned research activities.

We analysed Malinowski's (1935), Lyons' (1977), Jacobson's (1960), Brown and Yule's (1989) and Halliday's (1994), a.o. views on language metafunctions to specify the ones that written professional English for IT performs and selected Halliday's classification for further elaboration since he is the only scholar who dwells upon the textual language metafunction, which is of paramount importance for the present study, exploring text-internal features of the professional genres. The above-mentioned theoretical frameworks enabled the author to define the concept of communication and uncover its integral parts (Jacobson, 1960; Brown and Yule, 1989; Halliday, 1994). Written text artifacts used for discourse and genre analysis in the present research are viewed as the product of professional communication and the reflection of discursive practices.

Moreover, we turned to the dogmas of discourse analysis as a theory and as a method to explore the textualisation further. We investigated Harris's (1952/1964), Halliday's (1976, 1994, 2004), Cook's (1992, 2001), Schiffrin's (1994), Trimble's (1985), and van Dijk's (2004, 2004a)

principles on discourse and discourse analysis as well as Beagrande and Dressler's (1981) standards of textuality to establish a relevant theoretical background of the study. The discourse analysis of the professional documentation in English for IT was guided by Schiffrin's (1994) postulates, considering both formal and functional paradigms. Last but not least, the professional genres are approached as text types (Biber) and analysed structurally, considering recurrent text-internal characteristics. Namely, Trimble's (1985) discourse tenets in EST and Martin's (2000) views on text rhetorical patterning enabled the author to determine the general communicative aims, rhetorical functions and techniques of written transactional discourse and investigate coherence. Halliday and Hasan's (1976) framework of cohesion revealed the cohesive ties used in the documentation. Moreover, we investigated three overarching discourse processes, i.e. the contextualisation of discourse, the organisation of discourse and the textualisation of discourse. (Bhatia 1993, 2004)

Flowerdew and Peacock (2001) differentiate two approaches to genre analysis. The former investigates discourse community and the social context in which genres occur, describing text-external features, the latter highlights the textual analysis and text-internal peculiarities, therefore, the research unfolds in two directions, i.e. social and textual. The ESP, New Rhetoric and Systemic-functional Genre Schools and their principles of genre analysis investigated in the present paper are related to either of the approaches. The concept of genre was applied as defined by Swales (1990), M. Bloor and T. Bloor (1993), Roseberry (1997), Bhatia (1993, 2004), Bruce (2008). They refer to it as a set of communicative events that create common purposes recognized, shared and consumed by the members of the discourse community. Moreover, the genre is a specific product of a social practice which can be described structurally and taught because of its formal characteristics, thus, possessing social and cognitive perspectives, the former relating to its communicative purposes and functional language use, the latter focusing on its internal organization, which is essential for the implementation of empirical research results.

The theoretical aspects of the ESP Genre School described by Munby (1978), Hutchinson and Waters (1987), Dudley-Evans and St John (1998), Swales (1990, 2004), Bhatia (1999), as well as the postulates discourse analysists van Dijk (2004, 2004a) and Fairclough (1992, 1995, 1995a), Conrad (2001) and Gray (2011) enabled the author to conduct the situational analysis in order to determine the recurrent genres pertinent to IT for discourse and genre analysis and define the wider linguistic and local situational context in which they occur.

Addressing genre external features, we explored the concept of intertextuality grounded in Bakhtin's (1929) dialogism studies considering Kristeva's (1980), Fairclough's (1992), Spinuzzi's (2004), Orlikowski and Yates' (1994) typologies of intertextuality and built genre systems comprising genre hierarchies, genre sets, genre chains, (Swales, 2004), genre colony (Bhatia, 2004) and genre repertoire (Spinuzzi, 2004).

Furthermore, the problem of genre conventionalism and dynamism raised by Oxford University professor M. Charles and other scholars at the *Corpus and Language Variation in English Research Centre* (CLAVIER) was addressed. The concepts of genre intertextuality, embedding, and interdiscursivity were investigated as defined by Bhatia (1993, 2004), van Dijk (1995, 1995a) and Bazerman et al (2004, 2009). The representatives of the New Rhetoric School (Berkenkotter and Huckin, 1995; Miller, 1984; Freedman and Medway, 1994; Spinuzzi, 2004; Orlikowski and Yates, 1994) view genre as a socially situated phenomenon reflecting the discursive practices which influence the dynamic rhetorical structure of the genre related to the conditions of use.

Considering genre internal features, Bhatia's concepts of applied genre analysis to establish the communicative aims of the genres, considering situational and wider linguistic context, and Swalesean text generic features or moves (Swales 1990) were explored.

The focus of genre research of the Sydney School is the interaction of the communicative purpose, rhetorical structure, and linguistic choice and the significance the functional paradigm. We applied Halliday's (1994), Halliday and Mathiessen's (2004), Eggins' (2004), Martin and Christie's (2000) guiding principles, epitomising the link between genre linguistic peculiarities and language metafunctions. In particular, we investigated the formation of textual meaning through coherence and cohesion as well as the ideational meaning through the transitivity theory. The texts belonging to a genre are investigated structurally and seen as sharing communicative purposes, textual and intertextual features and target situation communicative events.

In the course of research, the results were continuously approbated at Riga Technical College and in the professional setting in Latvia in the years 2006-2012 designing and piloting study materials, at the University of Palermo within the framework of the EU Lifelong Learning Program study visit organised by the European Centre for the Development of Vocational Training CEDEFOP in 2012, at Cardiff University, Centre for Language and Communication and Research, Cardiff School of English, Communication and Philosophy within the research setting of the 2nd LinC Summer School in Systemic Functional Linguistics in 2012, within the framework of Leonardo da Vinci mobility project implemented at Riga Technical College,

designing a syllabus and materials for the training course prior to programming internship in Denmark in 2013 and RTC ICT department academic staff prior to *Erasmus* + mobility visit n 2014. The research results were also implemented in the study course and materials design "*EU Institutional and Project Management Discourse*" delivered to the 4th Year students of the University of Latvia within Modern Languages and Business Studies Bachelor program.

The research findings were presented at 25 conferences in Latvia, Sweden, Lithuania, Italy, Slovakia, Austria and the UK.

Content of research

The present research comprises 179 pages, including the introduction, glossary, four chapters, conclusions, bibliography of 208 entries and relevant appendices. It also contains 54 tables and 23 figures, reflecting both the theoretical and the empirical findings of the thesis.

The first three chapters provide the review of the acknowledged linguistic theories aimed at building the theoretical basis for the profound discourse and genre analysis of IT professional communication. Chapter 4 elaborates on research methodology and design as well as presents research findings illustrated with the examples from the corpus of authentic IT professional documentation created by the members of the discourse community from the sample.

CHAPTER 1. COMMUNICATION MODELS, LANGUAGE METAFUNCTIONS AND TYPES OF CONTEXT

Chapter 1 investigates the classifications of language functions by Malinowski (1934), Bühler (1934), Jacobson (1960), Lyons (1977), Brown and Yule (1983) and Halliday (1994, 2004) with an aim to specify the ones that written professional English discourse for IT performs to convey its intended meanings. It also describes how they are organized into communication models reflecting the social practice, the types of context in which they are manifested and explores the functional approaches to written text presented in the research of scholars from the London School of Linguistics which were later developed by the Systemic-Functional linguist Halliday, his followers and discourse analysts.

1.1 Pragmatic and non-pragmatic language functions and the context of situation

An early account for language as a functional construct and types of context is associated with functionalism, a school of thought in anthropology, which emerged in the early twentieth century and was facilitated by B. Malinowski (1923, 1935) and A.R. Radcliffe-Brown (1952). Functionalists shifted the research perspective, challenged earlier research approaches of speculative theoretising and privileged the experiential discovery of facts at present. (Lesser, 1985)

Functionalists favoured fieldwork, which resulted in a number of unique monographs describing native communities. Their considerable contribution to linguistics, resulting from the exploration of primitive societies, is marked with the introduction of **the notion of the context of situation** and the view of **language as a mode of action**.

Doing fieldwork research of primitive societies, Malinowski realized that traditional grammatical analysis was not sufficient in interpreting the meaning of native utterances. A listener is required to be informed about the situation in which communication occurred. (Duranti, 1997) Hence, Malinowski devised the concept of the **context of situation** "which indicates, on the one hand, that the conception of context has to be broadened and, on the other, that the situation in which words are uttered can never be passed over as irrelevant to the linguistic expression." (1923: 306) Eggins interpreted his approach as follows: "language only makes sense (only has meaning) when interpreted within its context and ... that language is functional resource (i.e. language use is purposeful)." (2004:88) Malinowski noticed that

language functioned as a **"mode of action"** since it was always accompanied by some activity. (ibid: 89) In his following research, he developed the idea claiming that "the main function of language is not to express thought, not to duplicate mental processes, but rather to play an active pragmatic part in human behaviour". (Malinowski, 1935, vol. 2: 7)

Duranti (1997) claimed that Malinowski drew a difference between "civilized" and "primitive" languages, with the former characterized as primarily devoted to communicating thoughts and the latter to getting things done, which resulted in the differentiation between the **pragmatic** function (i.e. when language is applied to achieve specific goals or transfer experience) and the **non-pragmatic** one accounting for organizing ceremonies and rituals within tribes (House, 1997: 32).

While Malinowski's tremendous contribution to the development of a functional account of a language is undeniable, Firth (1957, 1965), Duranti (1997), Eggins (2004) highlighted the deficiencies of his approach, i.e. the lack of relation between the types of context and functional organisation of a language, utterances and social acts and the distinction between "primitive" and "civilised" languages.

The abovementioned drawbacks led to the fact that Malinowski's research was an incentive for the further development of functionalism (R. Firth, 1957, 1965; R. Jacobson, 1960) specifying the concept of context in terms of linguistic predictability and devising communication models (Shannon and Weaver in Fiske, 1990; Bùhler, 1934; Jacobson, 1960; Halliday, 1994 a.o.); pragmatics (Searle, 1969; Austin, 1962) proposing a theory for converting utterances into social acts; Systemic Functional Linguistics (Halliday, 1994; Eggins, 2004; Martin and Christie, 2000) highlighting the systematic correlation between the organisation of language and specific contextual features.

Both Firth and Malinowski believed that meaning in language arose primarily out of speakers' and listeners' recognition of conventional social situations which are associated with linguistic choice. (Couture, 1986) Firth (cited in S. Eggins, 2004) proposed the notion of **linguistic predictability** generalizing upon the context of situation, i.e. "given a description of a context we can predict what language will be used... which also works in the other direction: given an example of language use (what we would now call text), we can make predictions about what was going on at the time that it was produced", which echoes with the concept of genre described in the following chapters (ibid: 89). Determining the variables of the context of situation for linguistic predictability, Firth (1957) proposed to consider the following:

A. The relevant features of participants: persons, personalities.

i. The verbal action of the participants.
ii. The non-verbal action of the participants.

B. The relevant objects.

C. The effect of the verbal action. (1957:182)

The framework found its reflection in Roman Jacobson's Communication Model (1960), D. Hymes's SPEAKING model (1974), as well as facilitated the development of spoken and written discourse analysis (Harris, 1952).

Moreover, all context variables proposed by Firth are present in recent context modelling frameworks by Fairclough (1992, 1995, 1995a); Munby (1978); (van Dijk 2004, Bhatia 1993, 2004), Conrad (2001), Gray (2011), which are implemented in the empirical part of the present research.

1.2 Bùchler's Organon Model of Language and Jacobson's Communication Model

Studies in semiotics reveal that language use is very often identified with a process of communication, where the communication is the unifying element for all functions of language. (Nöth and Sebeok, 1995) However, when some scholars (Malinowski, 1935; Bùhler, 1934) discussed the communicative function of language, they often implied that language might also be used for non-communicative purposes.

Other linguists restricted the term communication to only one function, usually the dominating one. In this sense, Martinet identified communication with the central function of language, it being communicative, when it referred to "the necessity of making oneself understood." (1960:18) Other functions, mentioned in Bùhler's Organon Model of Language, i.e. the expressive and the appellative function, were referred to as non-communicative.

Nöth and Sebeok (1995: 174) considered that "communication models are graphic representations of the elements of communication and the process of their interaction. The totality of these elements and their interrelation constitutes a communication system." According to the scholar, earlier models are linear and account for communication as for a sequence of semiotic events, representing the process technically and excluding semantic and pragmatic effectiveness, e.g. the predecessor of functional model, Shannon and Weaver's Communication Chain.

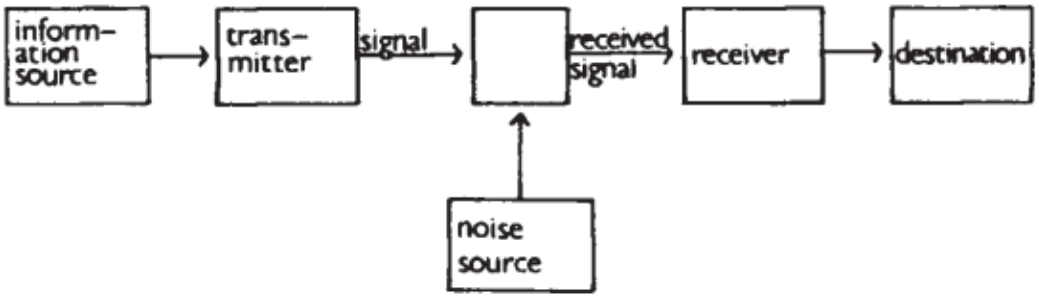


Figure 1. Shannon and Weaver's Model of Communication. (J. Fiske, 1990:7)

Bridging the gaps of Malinowski's approach and attempting to propose a functional systematisation of a language in a communicative act, Bùhler (1934, English version 1990, 2011) proposed the cyclical Organon Model of Language, in which language is viewed as a means, or an instrument for the speaker to transfer his thoughts to a receiver/ addressee. In accordance with three constituent parts, a language performs three functions, i.e. **expressive**, associated with the sender, **appeal** related to the addressee and **representational** related to the message, describing objects and state of affairs, as presented in Figure 2 below.

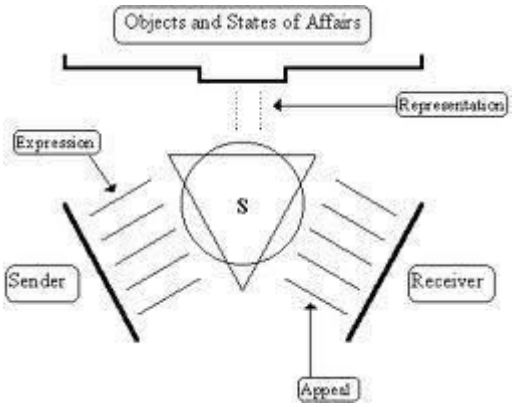


Figure 2. Bùhler's Organon Model or "Three-foundations-Schema". (Bùchler1934/ 2011:35)

Distinguishing the Organon Model from the linear Shannon and Weaver's model, W. Abraham (2011: xxi) noted that

> it (the Organon Model) is a model for the symbolic process of referencing: the speaker mediates to the addressee a symbolic sign whose features enable the sign to the refer to an object. This entire process takes place in a symbolic field. Communicating with linguistic symbols linguistic features will not be transmitted from sender to receiver.

A later account of Bùhler's Organon Model is traced in Lyons' research (1977:50), who introduced the following language functions: descriptive, expressive and social. The **descriptive** language function conveys factual information which could be asserted, denied or verified. The **expressive** function reflects speaker's motions and attitudes, while the **social** function establishes and maintains social relationships. (ibid)

A more advanced model of communication, resulting from Bühler's research, was proposed by Jakobson (1960). It consisted of six constitutive factors of verbal communication, including but not limited to the **addresser** sending a **message** to the **addressee**. He posited that

> to be operative the **message** requires a **context** referred to ('referent' in another, somewhat ambiguous nomenclature), seizable by the addressee,and either verbal or capable of being verb**aliz**ed; a code fully, or at least partially, common t**o the** addr**esser and** addressee (in other words, to the encoder and decoder of the message); and,f**inally,** a contact, a physical channel and psychological connection between the addresser and the addressee, enabling both of them to enter and stay in communication. (1960:355)

Jakobson related the integral components of the communication model to communicative and non-communicative language functions discussed above. Nöth and Sebeok (1995: 186) asserted that the functions of messages corresponding to each of these basic elements of communication are determined according to communicative orientation, the predominant focus on the respective factor of the communicative situation. Following Bùchler's principle of dominance, Jakobson identified the primary function for each component, claiming that more than one function may be pertinent to it, however, being secondary. (ibid)

In his view, the **referential** language function focuses on the context and its primary aim is to exchange facts or denote things (House, 1997: 33). The **emotive** function expresses addresser's attitude (Jakobson et al. 1987: 66). The **conative** function highlights the addressee (ibid.67-68). The **phatic** function establishes, maintains or terminates the contact between the addressee and the addresser (ibid: 68-69). The **metalingual** function aims at establishing mutual understanding between participants of communication using common 'code' or language (ibid.: 71). Finally, the **poetic** function concentrates on the message itself (ibid).

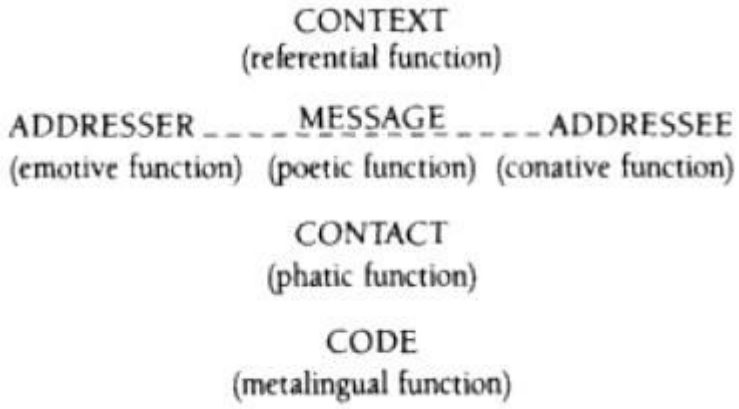


Figure 3. Jakobson's model of constitutive factors and the corresponding functions of verbal interaction (1960: 353, 357, cited in Nöth and Sebeok 1995: 186)

Supplementing the abovementioned model, Silverstein (1985), expanded on Malinowski's concepts as well as R. Jacobson's **metalinguistic** language function and introduced the term **metapragmatic** function for the use of language to describe contextual aspects of speech-as-action. He considered that metapragmatic awareness is the ability to articulate the context for the use of certain linguistic expressions, which was not arbitrary but bound to particular properties of linguistic manifestation. (ibid)

1.3 M.A.K. Halliday's Social Semiotic Framework

Synthesising the semiotic, functional and tagmemic approaches to communication, M.A.K. Halliday proposed a social semiotic framework, widely known as Systemic Functional Linguistics. According to S. Eggins (2004: 11-12), Halliday assumed that people communicate to make meanings and claimed that "the overall purpose of language is semantic, and each text we participate in is a record of the meanings that have been made in a particular context." The main focus of SFL is on the context of situation, which is analyzed in terms of three main variables:

a. field: ongoing activity, subject matter;

b. tenor: participant relations;

c. mode: medium, and the role discourse plays in the ongoing activity. (Halliday 1994)

A language reflects **interpersonal**, **ideational** and **textual** meanings. Thus, for example, the **interpersonal** language metafunction is 'language as reflection' (Halliday and Matthiessen, 2004: 31- 30) which represents attitudes and relations among participants. The **ideational**

language metafunction accounts for 'language as action' (Halliday and Matthiessen, 2004: 30). It conveys experiences and discusses the accomplished actions of participants. Finally, the **textual** language function is considered as the basis for the interpersonal and ideational language function since it is "dependent on being able to build up sequences of discourse, organizing the discursive flow and creating cohesion and continuity as it moves along". (Halliday and Matthiessen, 2004: 30) The unique peculiarity of this categorisation is its accountability for textual function, which results from discourse studies.

Brown and Yule (1983:1) claim that the attempts to discriminate between the principal language functions resulted in complex communication systems and vague ovelapping definitions. Thus, claiming that language used as discourse can hardly perform one function, they have proposed a much simpler dichotomy of language metafunctions, i.e. **transactional**, serving to express the content, and **interactional**, fostering the expression of social relations and personal attitudes. Holding a discourse view on language use, they highlighted the ultimate significance of context for discourse analysis claiming that "if a sentence grammarian wishes to make claims about the acceptability of a sentence whether the strings produced are correct sentences of the language, he is implicitly appealing to contextual considerations." (ibid:25)

To summarise the abovementioned categorisations, the author of the present paper has drawn up the following table aiming to present a comparative view on language metafunctions:

Linguists	**Malinowski**	**Buchler**	**Jacobson**	**Halliday**	**Lyons**	**Brown and Yule**
Language metafunctions	pragmatic	representational	Referential	ideational	descriptive	transactional
		appeal/ expressive	Emotive	interpersonal	expressive/ social	interactional
	non-pragmatic					
				textual		
			conative			
			Phatic			
			metalingual			
			Poetic			

Table 1. The comparative analysis of language metafunctions

As it can be seen from the table, the linguists share the views concerning the transactional and interactional nature of language. Hence, Brown and Yule's classification will be applied further since the author of the thesis intends to analyse written professional genres used for transactional communication. In addition, the author will implement Halliday's framework in the empirical part since he considers the textual language metafunction, which is crucial for this study. Jakobson's model of communication will be addressed partially when modelling the situational context of written communication for IT organisational purposes, investigating the addresser, who generates written professional genres, the types of context in which they operate, the linguistic means (code) to deliver a written (contact) message, excluding the addressee since the nature of technical communication is transactional and performative, i.e. it is aimed to convey a message and induce a reader to a certain action. As all the abovementioned scholars allocated an indispensable role to the context in which a text functions, this concept will be further investigated.

1.4 Context as discourse construct

The first account of context appeared in the research by Malinowski (1934), who distinguished the context of situation and the context of culture. However, he also emphasised the importance of linguistic context, stating that "a word without linguistic context is a mere figment and stands for nothing by itself […]." (Malinowski, cited in Widdowson, 2004: 37)

Later on, the concepts were adopted and expanded by Firth, describing the context in terms of linguistic predictability, Hymes and Halliday, investigated the context in terms of its contextual elements (Eggins, 2004: 89-90) (Setting and scene, participants, ends, acts sequence, key, instrumentalities and norms of the SPEAKING model, Hymes (1974); field, mode and tenor of the context of situation (Halliday, cited in T. van Dijk (2004:340))

Comparing the two frameworks discussed above, van Dijk (2004:340) outlined that linguists and discourse analysts often invoke the concept context, but an explicit and universal theory of context is not available. He approached the SFL perspective of context critically claiming that the categories are not original, unproductive, inert and heterogeneous and the framework itself does not cover all required components. Conversely, in his view, the approaches to context proposed in ethnography and social psychology are more consistent and theoretically *ad hoc*, embedding an utterance in a social communicative situation, therefore, the functional account of language use (ideational-field, interpersonal-tenor and textual-mode) is supplemented by situational context modeling in the empirical part.

Another type of relations significant for context that is to be considered is "co-text" (Catford 1961:31) or "the previous discourse co-ordinate." (Brown and Yule 1989:46) Catford (1961:31) outlined extra-textual and intra-textual relations, defining “the context of situation in terms of the extra-textual situation which are related to the text as being linguistically relevant: hence contextual, and co-text in terms of items in the text which accompany the item under discussion: hence co-textual”. Brown and Yule claimed that the words as well as the utterances which occur in discourse are constrained by co-text, which is based on the framework of cohesion by Halliday and Hasan. (1976)

Summarising the development of the concept of context, A. Hewings and M. Hewings (2005) outlined its importance through various context types and presented a consistent framework. According to them, the context can be classified into four categories: local linguistic, wider linguistic, local situational and wider socio -cultural as represented in Figure 4. (ibid.: 20).

The **local linguistic context** is identified with the previously described concept of **co-text** (Catford, 1961; Brown and Yule, 1983) or verbal context (Renkema, 2004: 45) and is linguistically manifested through cohesion as a standard of textuality. In addition, Janney claims that co-text is the “only one “dimension” of context that is linguistically observable […]”. (2002: 457- 458, cited in Bhatia, 2005:146).

Any aspect of linguistic behavior, be it lexical, prosodic, phonological, syntactic or stylistic, may be considered as contextual clues serving for interpreting embedded utterances, determining and inferring roles and identifying communicative aims in interaction. (Gumperz, 1977)

Catford (1965: 31, cited in Bergs and Diewald, 2009: 3) claimed that context is defined in terms of participants, time, location and mode in which the communication has taken place and its main descriptors are syntax and textuality (ibid.), which gain the primary focus in the empirical part.

Exploring the categorisation further, M. Hewings and A.Hewings (2005: 21) pointed out that "the **wider linguistic context** concerns the way in which a particular text relates to other texts, and the way in which our interpretation of a text is influenced by our previous experience of other texts. The term intertextuality is often used to refer to the kind of knowledge that we bring to a text from our experience of other texts, particularly other texts of the same type".

They (ibid.) outlined that the contextual aspects of **the local situational context** comprise the time, the location, the age and gender of participants, and their relative status. **The wider socio-cultural context** is the broader background against which communication is

interpreted and includes social and political aspects of language or national groups, as a whole, and features of institutional domains. The schematic representation of the types of context is shown in Figure 4 below.

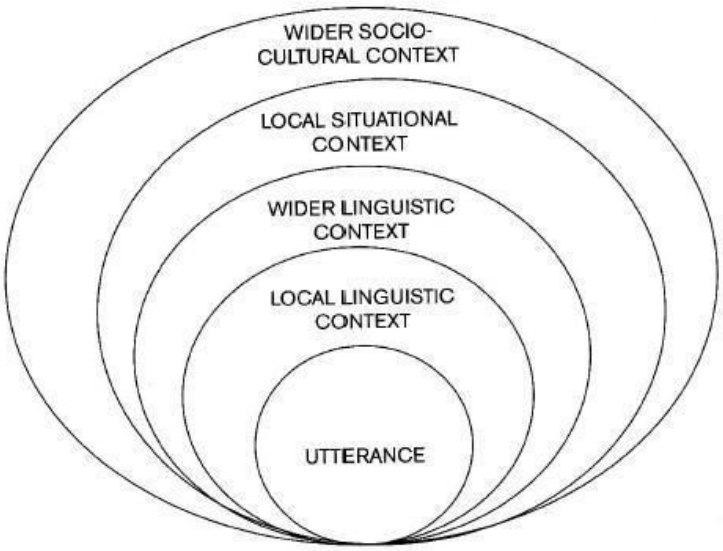


Figure 4. An utterance in its context (ibid.)

In the empirical study, **the local situational context** will be addressed conducting the situational analysis (driven by the ESP genre school tenets, Conrad's, Gray's and van Dijk's context modelling), identifying and describing the members of discourse community, their discursive practices and communicative aims to be expressed in professional genres; **the wider linguistic context** will be investigated through the prism of genre intertextuality and other text-external generic features; **the local linguistic context** will be explored in terms of cohesion, coherence, text rhetorical organisation and other text-internal discursive peculiarities. Due to time and space constraints as well as functional, not critical focus of the study, the wider socio-cultural context is not considered in the present research.

To conclude, the chapter described various typologies of language functions proposed by Malinowski (1935), Bühler (1935), Jakobson (1960), Halliday (1994), Brown and Yule (1983) and other linguists following functional, systemic functional and discourse analytical perspectives, which in the amalgam form communication models. Having analysed six classifications, it has become apparent that all linguists in question explore transactional and interactional nature of language used for communication. The Hallideyan typology is distinguished for its accountability for textuality, which is crucial for the present paper, having a discursive focus.

Moreover, the notion of the communication model (Bühler,1935; Jacobson,1960; Halliday, 1994) was investigated inseparably from contextual elements or types of context, highlighting their role in discourse production.

The concept of context having been introduced to linguistics from anthropology, has developed from the simple dichotomy (the context of situation vs the context of culture) to linguistic predictability, contextual elements and multi-layered contextual modelling reflecting textual, functional and socio-critical perspectives.

In order to elaborate a context model in which written professional genres as inherent artifacts of professional communication operate, the concepts of discourse and discourse analysis as a theory and method are investigated in the subsequent chapter.

CHAPTER 2. DISCOURSE AND DISCOURSE ANALYSIS. DISCOURSE AS SOCIAL PRACTICE

The present chapter explores the notions of discourse and discourse analysis as a theory and method, as the basic concepts for the development of this thesis. It highlights their complex nature proposed by Harris (1952/1964), Halliday (1976, 1994, 2004), Widdowson (1983, 2004), Schiffrin, (1994), van Dijk (2004, 2004a) Fairclough (1992, 1995, 1995a), Bhatia (2004) and other scholars as well as sheds light upon the difference between descriptive and critical discourse analysis perspectives, text and discourse, explores social, functional and textual DA frameworks, which will allow the author to model the social context in which IT professional genres occur, investigate their functional and textual peculiarities as well as trace the manifestation of their language metafunctions. The following salient perspectives are distinguished, i.e. discourse as text, discourse as a system of genres, discourse as social practice. Discourse chronological development is observed in the textualization of lexico-grammatical resources, the regularities of organisation, and, finally, contextualization of discourse (Bhatia 2004:3).

2.1 Discourse analysis as a theory

Discourse and discourse analysis (DA) subsume different academic disciplines, encompassing linguistics, semiotics, psychology, anthropology and sociology. (McCarthy, 1991: 5) Therefore, these concepts are often regarded as contradictory, covering a wide range of meanings and processes, and are difficult to define due to various aspects highlighted by different researchers.

The study of discourse as sentences in combination, which first appeared in the work of Harris, resulted in a number of breakthrough developments. He proposed to define it as a "method for the analysis of connected speech (or writing)" (1952:1) and observed that "language does not occur in stray words or sentences, but in connected discourse". (1952/1964: 357). He mentioned that discourse analysis might be considered from two angles: language beyond the sentence level and language as the interrelationship between 'non-linguistic and linguistic behavior' (ibid.), focusing further on the former. This observation later resulted in the dichotomy of approaches to DA, i.e. formal and functional, further evolving into social.

Being a formalist, Harris viewed discourse as the next level in a hierarchy of morphemes, clauses and sentences, whereas functionalists highlighted the importance of the communicative

events, aims and functions of language, some of them even defending the opinion that language and society are inherent parts of each other and cannot be regarded as independent. (Focault, 1980; Fairclough, 1989)

Despite the novelty, Harris's structural approach to explore the syntax of units larger than sentences was quite formal as his 'connected discourse' implied the idealistic exploration without relation to context. Comparing his approach to the one by Halliday, it is worth mentioning that the former focuses on how linguistic forms combine into patterns and then suggests a correlation between these patterns and different situations, whereas the latter presupposes that there are correlations between individual linguistic features and features of the situation. Harris himself recognised the limited scope of his analysis.

However, his contribution to the development of discourse studies should not be underestimated since his views triggered the development of the functional approach in discourse analysis, which involves all uses of language, highlighting the attainment of certain communicative goals. Discourse is not regarded as one more level in a hierarchy; it is an all-embracing concept, covering not only the propositional content, but also the social, cultural and contextual contents. (Brown and Yule, 1983; Halliday 1976, 1994, 2004; Widdowson, 1983, 2004; Schiffrin, 1994; van Dijk, 2004, 2004a) Hence, two distinguished approaches to DA can be identified:

The abovementioned dichotomy is present Schiffrin's research (1994), i.e.

1) the formal approach, where discourse is defined as a unit of language beyond the sentence;
2) the functional approach, which defines discourse as language use. (Leech, 1983; Schiffrin, 1994)

Schiffrin (1994) integrated both formal and functional paradigms. She viewed discourse as "utterances", i.e. "units of linguistic production (whether spoken or written) which are inherently contextualized" (1994: 41). From this perspective, the aims for DA are not only sequential or syntactic, but also semantic and pragmatic. Thus, they pointed out that "discourse has often been viewed in two different ways: a structure, i.e. a unit of language that is larger than the sentence; and the realisation of functions, i.e. as the use of language for social, expressive, and referential purposes". (Schiffrin, 1994: 339)

Further on, Schiffrin et al (2001) expanded this categorisation, noting that all the definitions of discourse fall into three main categories:

1) Anything beyond the sentence

2) Language use

3) A broader range of social practice that includes non-linguistic and non-specific instances of language. (2001: 1)

The author of the present research shares these views and the present study implements all three categorisations and is initiated with the description of the discourse community members and the social professional practices they are involved in, uncovering the social perspective by macro contextual modeling (Bhatia, 2004; van Dijk, 2004a; Munby, 1978 a.o.) followed by genre rhetorical organization (Swales, 1990; Paltridge, 1997; Martin, 2000; Trimble, 1985) exploring language use and textualisation (Trimble, 1985; Halliday and Hasan, 1976) analysisng discourse markers and cohesion.

Highlighting the applied nature of professional communication within organisations and "multifaceted, multidimensional and ethnographically grounded thicker descriptions of genres" (Bhatia 2001: 79, ed. M. Hewings), the author addressed the problems of genre hierarchy (Swales, 2004; Bhatia 1993, 2004), genre as a social action (genre repertoires, genre systems, networks, ecologies), genre cognitive structure and moves (van Dijk,1995; Swales, 1990; Martin, 2000), genre intertextuality, recontextualisation and embedding (Kristeva 1980; Swales 1990, 2004; Fairclough, 1992; Spinuzzi, 2004), which will bridge the social and the functional perspectives.

The formal approach, analysisng the linguistic elements beyond the sentence level is addressed by partially exploring the standards of textuality (Beaugrande and Dressler 1981), text rhetorical organisation (Trimble 1985; Swales 1990; J. Martin 2000) as well as the framework of cohesion (Halliday and Hasan, 1976), unveiling the textual perspective on professional genres.

All the abovementioned aspects are fundamental for this paper, since the first definition (anything beyond the sentence level) allows us to explore the co-text or the local linguistic contex; the second one (language use) is applicable since we investigate the peculiarities and regularities of functional language use within organisations; the third one enables us to characterise the wider linguistic and local social contexts of language use within institutions and the IT domain, which is significant due to several reasons. Firstly, IT professionals at all organisational levels are exposed to a vast amount of technical and operational documentation to be reviewed and compiled, thus, the concept of genre as a socially conventionalised and cognitive discourse construct and its use within wider linguistic and local social contexts should be analysed, raising the awareness of the text external phenomena such as situationality, intentionality or intertextuality. Secondly, when one deals with written discourse within

organisations, language use may be treated as a means of expression of one's professional competence, ensuring precise system, process or procedure description a.o. (characterising the ideational language metafunction); therefore, the correlation of linguistic forms to certain communicative aims is vital to ensure successful information transaction. Last but not least, an understanding of the formal linguistic phenomena which shape the internal textuality and ensure cohesion and coherence to a text is of importance to language users, as it facilitates building a consistent discourse unit, namely an item of documentation and accounts for the manifestation of textual language metafunction.

Concluding these views on discourse, the aim of the study of discourse is to use linguistic data "to describe regularities in the linguistic realisations used by people to communicate those meanings and intentions". (Brown and Yule, 1983: 5) Similarly, but in broader terms, discourse by G. Cook (1992) is referred to as "…language in use, for communication". (Cook, 1992:4).

Wetherell et al (2001) distinguish four possible categorizations of DA, merging the principles of discourse analysis as a theory and as a method, which are summarized as follows:

1. The model that views language as a system and therefore it is important for the researchers to find patterns.

2. The model that is based on the activity of language use, more than on language in itself. Language is viewed as a process and not as a product; researchers focus on interaction.

3. The model that searches for language patterns associated with a given topic or activity (e.g. legal discourse, psychotherapeutic discourse, etc.).

4. The model that looks for patterns within broader contexts, such as "society" or "culture", with the language viewed as a part of major processes and activities, and the research interest going beyond language (e.g. political discourse, the study of sexism through the analysis of discourse).

In the present research the author implements the first three categorisations, namely a systematised language use is investigated considering the local and the wider linguistic contexts and the means of cohesion and rhetorical patterns are found to identify the manifestation of the textual metafunction. The second and the third model accounts for the local social context and characteristic communicative events of IT professional discourse with an aim to find the recurrent linguistic patterns (e.g. moves and steps of genres) which are determined by the professional communication within an organisational setting.

Patterns within the broader cultural context are not accounted for due to space and time constraints.

2.2Discourse analysis as a method

Since its emergence, the concept of discourse has acquired a "whole palette of different meanings […]" (Titscher et al, 2000: 25), however, there is still no consistency as to the common use of the term. A number of linguists (J. Lemke online 4, M. Jorgensen, L. Phillips) utilize discourse analysis as a method pursuing **descriptive** or **critical** aims and outlining social, functional or textual peculiarities.

2.2.1 Descriptive discourse analysis

Very often, scholars, considering discourse analysis as a method, attribute it to spoken language, e.g. Johnston claimed that discourse is a hearer's ability to interpret speaker's 'semantic intentions'. (2003: 5) Leech and Short related discourse to a spoken 'linguistic communication' or 'interpersonal activity whose form is determined by its social purpose' (2007: 168). Crystal supported both views stating that discourse is 'a stretch of (especially spoken) language larger than a sentence […]' (2008: 143). Bhatia held a similar view, admitting that discourse 'includes both written as well as spoken forms […]' (2004: 3).

The distinctive characteristic of discourse analysis as a method is its descriptive character grounded in the ethnographic tradition. Johnstone (2008: 28) claimed that

> no matter what the overarching research question, all discourse analysis results in description: describing texts and how they work is always a goal along the way. In some discourse analysts' work, descriptions of texts are used in answering questions that arise in the service of what is traditionally known as "descriptive" research, particularly in linguistics. Work of this kind is based in the idea that the primary goal of scholarly research is to describe the world, or whatever bit of the world the researcher is interested in.

According to Johnstone (ibid), discourse analysis aimed at descriptive work should correspond to the following principles, namely, there should be a finite number of possible descriptions, any one of which would be valid in some situation, and that the proper role of a scholar is to describe the *status quo* first with further possible, though not obligatory application of scholarly findings in the solution of practical problems. Some of the foundational work, approaching discourse analysis as a method took place in the context of descriptive linguistics attempting to describe textual principles in a variety of languages (e.g. Pike, 1967), Grimes, 1975) or in the context of systemic-functional linguistics (e.g. Halliday and Hasan, 1976) exploring the means of cohesion.

2.2.2 Text vs. discourse

Linguists implementing the descriptive framework very often use the concepts of **text** and **discourse** interchangeably without drawing any distinction in terms of mode (spoken or written) or wider social context. For instance, Stubbs (1996) did not discern differences between these two concepts either and stated that "there is considerable variation in how terms such as text and discourse are used in linguistics. Sometimes this terminological variation signals important conceptual distinctions, but often it does not, and terminological debates are usually of little interest". (1996:5) Similarly, Salkie (1995) defines both notions as 'a stretch of language' which exceeds the boundaries of a sentence.

However, Widdowson (2004) at large contradicts this point of view following the critical discourse analysis perspective and notes that

> unless it is activated by this contextual connection, the text is inert. It is this activation, this acting of context on code, this indexical conversion of the symbol that I refer to as discourse. Discourse in this view is the pragmatic process of meaning negotiation. Text is its product. (2004:8)

Cook (2001) similarly claims that text refers to 'linguistic forms' which are disconnected from the context (2001:1), whereas discourse is 'perceived as a meaningful and unified' unit inseparable from its context (ibid: 2).

In systemic functional linguistics, the term text is referred to as "any passage, spoken or written of whatever length, that does form a unified whole" (Halliday and Hasan 1976: 1), whereas discourse is referred to as 'firmly rooted in a specific context' and exceeds the limits of a single sentence (Halliday, cited in Martin and Ringham, 2000: 51). Similarly to Widdowson's views (2004), the distinction that discourse is a 'process', while text is its 'product' is highlighted. (Halliday, cited in Matthiessen et al, 2010: 219).

De Beaugrande does not provide a clear-cut distinction and, pursuing functional perspective, defines text as a communicative event and discourse as 'a set of interrelated texts' which result in spoken or written communication (1997: 21).

In critical discourse analysis, Fairclough (1995a) demonstrates the three-dimensional framework of the communicative event and clearly distinguishes between the notions of text and discourse, text being an integral part of discourse functioning in the social context, which will be further elaborated upon in the successive chapter.

The author of the present paper differentiates between the concepts of text and discourse and supports Fairclough's definition provided above, which presupposes a three-level social,

functional and textual framework of DA, with text investigated at one of the levels. The detailed account of this framework will be presented in the subsequent subchapters.

2.2.3. Critical discourse analysis

The critical perspective of discourse analysis (CDA) provides both theories and methods for the empirical study of the relations of social and cultural phenomena within the linguistic-discursive dimension and the processes of change in late modernity. (Jørgensen and Phillips, 2002:60) In the present research, critical discourse analysis postulates help to unveil the connection between the discursive social practice, language use in the organisational setting and construct its social context, accounting for interdiscursivity. However, the empirical study excludes the investigation of identities, roles, relations of discourse community members, the concepts of power, domination and ideology in order to focus solely on the manifestation of ideational language metafuction in the IT organizational setting.

Another reason for considering CDA dogmas in the present study is its accountability for not only written and spoken language but also visual images. Jørgensen and Phillips mention that it is commonly accepted that the analysis of texts containing visual images must take account of the special characteristics of visual semiotics and the relationship between language and images. However, within critical discourse analysis (as in discourse analysis in general) there is a tendency to analyse pictures as if they were linguistic texts. (2002:60) The technical documentation compiled in the corpus contains a number of diagrams, graphs, operational charts, tables and other visuals, so visual verbal relations and linguistic means embedded in the text unveiling these relations should be investigated.

The distinctive features of the critical discourse analysis are the following:

1. Discursive practices "through which texts are produced (created) and consumed (received and interpreted) are viewed as an important form of social practice which contributes to the constitution of the social world including social identities and social relations.

2. Discourse is "a form of social practice which both constitutes the social world and is constituted by other social practices."

3. Critical discourse analysis engages in a concrete, linguistic textual analysis of language use in social interaction.

4. Discursive practices contribute to the creation and reproduction of unequal power relations between social groups, so discourse functions ideologically.

5. CDA is not politically neutral, committing itself to social change. (Fairclough and Wodak, 1997: 271)

The first three postulates are of paramount importance for this study since the investigation of discursive practices allows us to reflect upon the creation of field and mode in IT professional discourse, observe the influence of communicative events on constituting genres as a social pragmatic construct, e.g. the transactional performative character of IT professional documentation as well as explore particular recurrent linguistic means that manifest the abovementioned social discursive practices. They clearly unveil structural and poststructural views on discourse analysis, the former manifested in a detailed linguistic textual analysis, the latter is a constituting and constituted approach to the social practice, social relations and identity, the social practice being central for the present study.

The integrated, multidisciplinary and applied nature of discourse analysis as such is best illustrated by the fact that in developing a model for CDA, Fairclough and Wodak were influenced by Halliday and Systemic Functional textual analysis, Foucault's theory of social practice and "the micro-sociological, interpretative tradition within sociology (including ethnomethodology and conversation analysis), where everyday life is treated as the product of people's actions in which they follow a set of shared 'common-sense' rules and procedures". (Fairclough, 1997: 66)

A threefold definition of discourse from the critical perspective proposed by Fairclough, comprises the following

> in the most abstract sense, discourse refers to language use as social practice [...], secondly, discourse is understood as the kind of language used within a specific field, such as political or scientific discourse. And thirdly, in the most concrete usage, discourse is used as a count noun (a discourse, the discourse, the discourses, discourses) referring to a way of speaking which gives meaning to experiences from a particular perspective. (ibid: 66)

It reflects the tenets of genre schools described in the next chapter, genre being a smaller, more peculiar instance of discourse as language use. Fairclough (1992) and other CDA scholars consider that any discursive event is analysed on the basis of its being "simultaneously a piece of text, an instance of discursive practice, and an instance of social practice". (ibid.:4) Grant et al (2004). suggest that discourse analysis in the organisational setting involves the investigation of the structure and meaning of the text under scrutiny; discursive interaction used to communicate meaning; and consideration of the social context in which the discursive event is taking place. The author of the paper shares these views and implements them in the empirical part.

To summarise, in critical perspective discourse facilitates the construction of social identities, social relations and the systems of knowledge and meaning, viewed from a semiotic perspective, i.e. systems of language and images in contrast to Laclau and Mouffe (1985), Wodak and Meyer (2001) who consider overall discourse as a social practice or van Dijk's (2004) who highlights the significance of cognitive approach in CDA.

2.3Organisational discourse as a social practice. Social context modeling.

2.3.1. Defining organisational discourse

The subchapter sheds light onto the definition of organisational discourse, highlights its peculiarities as well as suggests the frameworks for analysis.

Grant et al (2004) attributed organisational discourse to the interrelated and structured collections of texts

> embodied in the practices of talking and writing (as well as a wide variety of visual representations and cultural artifacts) that bring organizationally related objects into being as these texts are produced, disseminated and consumed. They signify collections of interactions, media of communication (i.e., oral, print, electronic), or assemblages of oral and written forms (2004:3).

The scholars (ibid.) also defined the organisational discourse as context-sensitive language use exposed to plurivocality, i.e. a multiple phenomena unveiled for analysis at a time, therefore, the types of context and the concept of discourse *per se* are studied. They also considered that the field of organisational discourse has borrowed extensively from the wider discourse analytical literature and directed the debates pertaining to the exploration of organisational discourse to the negotiation of meaning, intertextuality, cognitive approaches and reflexivity. The author of the present paper shares their views.

Mumby and Clair (1997) claimed that organisations are created by the members of discourse community through discourse, which is the means to create a coherent social reality, hence communication models and language metafunctions are investigated in the first place in the theoretical literature review.

The scholars also asserted that "discourse is a facet of organizational life; a communicative practice that can be empirically examined to determine its meaning and purpose, viewed in functional terms". (ibid:181) Heracleous and Barrett (2001) defined it "as a body of communicative actions that [serve as] tools at actors' disposal, emphasising the purposive and

instrumental use of such communicative actions for the facilitation of managerially relevant processes and outcomes", which made the author of the present paper elaborate on genre theories within the applied linguistic perspective. (2001:756)

Iedema (2003) differentiated between two disciplines majoring in organisational discourse, i.e. organizational discourse studies and organizational discourse analysis, the former grounded in organizational management, the latter in linguistics. The scholar proposed a five-dimensional framework for research, i.e. abstract principles and empirical facets of organization, mono-modal (language) and multi-modal (semiosis) discourse, pattern analysis and meaning analysis, discourse as a manifestation of cognition and the ways of doing as well as discourse as critique of power and intrusion. Since the present paper is a linguistic investigation, the author of the paper is interested in dimension 2 and dimension3, i.e. mono-modal discourse, pattern analysis and meaning negotiation, which justifies the choice of functional and formal approach to discourse analysis. As well as this, intertextual and interdiscursive nature of organisational communication is explored deriving from purposive and instrumental language use.

To summarise the abovementioned views, we attribute organisational discourse to written communication occurring within organisations, i.e. an interrelated network of genres to reflect the professional discursive practices, i.e. activities, procedures and practices.

2.3.2 Modelling situational context

2.3.2.1. Fairclough's text production and text consumption

The framework for the practically applicable critical discourse analysis, comprising language as a social practice per se, separate communicative events, social identity, social relations and the linguistic manifestation of the above through the systems of knowledge and meanings encompasses text production and text consumption within discursive and social practices.

As it is seen in Figure 5 below, the communicative event and an instance of language use related to it may be characterised at three levels, namely at a textual level, covering linguistic features, as a discursive practice, highlighting phenomena required for discourse production and consumption and as a social practice, encompassing wider social context in which the communicative event occurs, which correlates with the mainstream theoretical frameworks chosen for this investigation and described in the previous subchapters.

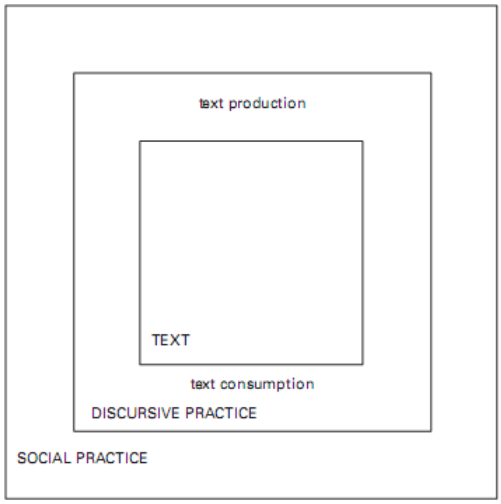


Figure 5. Fairclough's model of text production and text consumption in critical discourse analysis

Fairclough (1995a) postulated that conducting critical discourse analysis, alongside **the communicative event**, **the order of discourse**, i.e. the configuration of all the discourse types which are used within a social institution or a social field, should be investigated. Discourse types consist of discourses and genres (van Dijk, 1995a: 66). The concept of genre and genre related phenomena will be reviewed below.

This framework is applicable in the present research setting since it allows us to trace the recurrent linguistic means at a textual level, the discursive practices of discourse order necessary for text production and consumption that constitute professional genres as constituent parts of a social practice at IT business entities. It also embeds genre and text in DA.

As Fairclough explained, the analysis of discursive practice focuses on how authors of texts draw on already existing genres to create a text, and on how the receivers of texts also apply available discourses and genres in the consumption and interpretation of the texts. (cited in M. Jørgensen and L. Phillips, 2002:67) This process interrelated with van Dijk's (2004) cognitive perspective on critical discourse analysis and the role of macro-context modelling in the process of text production and consumption.

Discursive practice mediates the relationship between texts and social practice. It is viewed as an instrument to use language to produce and consume texts as a part of wider social practice. Text analysis focuses on the formal features (such as vocabulary, grammar, syntax and sentence coherence) for the linguistic realisation of discourses and genres. He also claimed that the formal

linguistic features influence both the production and the consumption process since they are organised into a predictable conventionalised structure (van Dijk, 1995a: 60).

2.3.2.2 Van Dijk's social context modeling

In contrast to the views expressed by Fairclough, Van Dijk (2007) emphasised the significance of the discourse community members for the social context modelling. He also argued that

> situations do not directly condition discourse structures. Nor do discourse structures directly influence situations, for that matter. If it were so, all people in the same situation would talk or write in the same way. Also, such a context theory would be deterministic or probabilistic: some social event would in that case (more or less probably) 'cause' specific discourse properties. (ibid: 4)

According to him, the relations between the communicative event and discourse are established and determined by participants through cognitive interface, the representation of which take form of the mental models or context models manifested in experiences. He claims that these models have proved to be essential in discourse production. It is the way participants understand and represent the social situation that influences discourse structures, which can be identified with Fairclough's text production and text consumption within a discursive practice, discussed above. In his view, such representations take the form of mental contextual models, stored in episodic memory, as is the case for all mental models of specific events and situations (Johnson-Laird, 1983; van Dijk & Kintsch, 1983; Van Oostendorp & Goldman, 1999, cited in van Dijk, 2004). Mental models represent experiences within communicative events, refer to the explanatory situation or the environment of some phenomenon, its conditions and consequences.

He distinguished the following characteristic features of context models as an inherent part of social practice:

1) relevance, i.e whatever is construed as part of the context model by language users is by definition relevant;

2) subjectivity, i.e. they depend on previous experiences, including previous discourse of participants;

3) dynamism, i.e. they are ongoingly and strategically constructed and modified, and hence account for the dynamic nature of an ever changing context throughout text or talk. In this way, context models flexibly control many aspects of discourse production and understanding. (ibid)

Van Dijk (ibid) asserted that as is the case in psychology, most sociolinguistic accounts tend to examine contextual relationships in terms of simple co-variation or probability, instead of analyzing the precise nature of contextualization.

Conversely, he proposed context models that strategically control discourse processing, in such a way that a discourse is produced or understood that is appropriate in a given communicative situation. This means that anything that can vary in discourse may thus become controlled by the context model, such as deictic expressions, politeness formulas, style, rhetorical structures, speech acts, and so on. (ibid) In the empirical part of the present paper a special role is allotted to the interaction between the context model and the rhetorical organization of genres in question.

To make the contextual models cognitively manageable van Dijk proposed the division of components into macro and micro-categories, e.g.

Macro-categories	Micro-categories
Setting: period (days, months, years); space (city, country);	**Setting:** interaction time; location;
Participants: groups, institutions; organizations identities, e.g., ethnic group, school; roles, e.g., education;	**Participants:** persons; identities: professor; roles: teach;
Relations, e.g., institutional power;	**Relations**: personal power;
Group goals group's social knowledge	**Aims** personal knowledge
Macro act of group, institution: educate, etc.	**Action**, e.g., explain

Table 2. Macro and micro-categories of discourse models. (ibid)

These categories form a more or less fixed schema that allows participants to analyze and represent a potentially infinite number of social situations. Such an analysis needs to take place in matters of seconds, given the fast changing situational circumstances of language users. This means that context models need to be relatively simple and not too big.

Van Dijk's principles of context modelling described above at large correspond to Munby's (1978) communication needs processor, who proposed to consider the following parameters, which are applicable to the present investigation, i.e. p**urposive domain** (in the present paper- IT transactional communication), **setting** (enterprise internal and external communication

to reflect professional activity), **interaction** (communicative relationship established with clients, in-company stakeholders, i.e. top management, owners and partners), **instrumentality** (written discourse), **dialect** (communication with the interlocutors throughout the world, e.g. Switzerland, the USA, Ireland, the UK, Canada, Singapore, Russia, China a.o.), **communicative event** (accounts for what the participants will have to do productively or receptively operating in IT professional discourse), **communicative key** (semi-formal and formal relationship), **target level** (not to be considered due to discourse and generic focus rather than language acquisition purpose of the present investigation).

Context modelling may have various applications, for example, personnel training at a work place, creation, analysis, and interpretation of existing genres at a work place for efficient communication. In addition, it plays a crucial role analysing unknown genres in the conditions of genre dynamism, intertextuality and interdiscursivity discussed below.

2.3.2.3 Bhatia's integrated framework of discourse as social practice, genre and text

Bhatia (2002) proposed a similar framework the one by Fairclough discussed above claiming that discourse as text refers to the analysis of language use

> that is confined to the surface level properties of discourse, including formal and functional aspects of discourse, that is phonological, lexico-grammatical, semantic, organisational, including intersentential cohesion, and other aspects of text structure such as 'given' and 'new', 'theme' and 'rheme', or information structures, such as 'general-particular', problem-solution, etc., not necessarily having interaction with context in a broad sense. (2002:17)

He considered that discourse as text mostly excludes the analysis of context in any meaningful way, except in terms of of intertextuality to include interactions with surrounding texts. (ibid) Hence, the analysis at this level highlights the construction of the textual product, rather than the interpretation or application of this product. A language user's contribution to the interpretation of the textual output, in terms of the knowledge of the world, encompassing the professional, socio-cultural, and institutional knowledge as well as experience that one is likely to use to operate in discourse is not taken into account in contrast to discourse as genre, when text production and text interpretation are extended beyond the sentence level and beyond the textual output in the social-institutional context to pursue particular goals. Most genre theories follow not only linguistic, but also socio-cognitve and ethnographic traditions. (ibid)

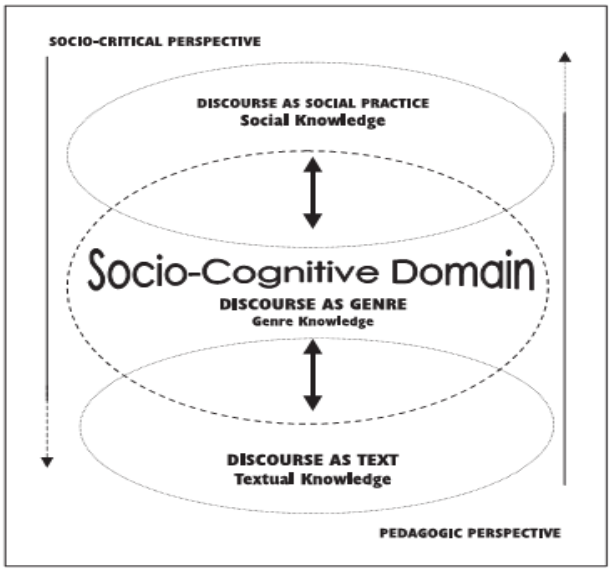


Figure 6. Perspectives on discourse (Bhatia 2002)

Discourse as social practice takes the interaction with the context a step further in the direction of social context, where the focus shifts significantly from the textual output to the features of context, such as the changing identities of the participants, the social structures or professional relationships the genres are likely to maintain or change, the benefits or disadvantages such genres are likely to bring to a particular set of readers.

Widdowson (2004) clearly shared this view, highlighting that although a text may be analysed as a linguistic object, the meanings that are constructed by linguistic analysis, then, cannot be equated with those that are constructed by language users in the discourse process, since it is never experienced in such contextual isolation, "so the linguist, as third-person observer, may examine the co-textual features of a text and adduce various contextual correlates as relevant to the projection of pragmatic meaning". (2004:75-76)

Bhatia (2002) asserted the view that discourse analysis should be conducted at various levels claiming that a typical socio-linguist interested in discourse analysis will begin from the top end, looking deeply and exhaustively into the social context, working his way downward, but rarely getting seriously into the textual space. An applied linguist would find it more profitable to begin at the bottom end, exploring the textual space exhaustively, working toward social space, often using social context as explanation for the analysis of textualisation of lexico-grammatical and discoursal resources. He noted that " most users of the framework whether interested in socio-cultural issues, or pedagogical ones, at some stage or the other will necessarily pay some attention to the socio-

cognitive aspects of genre construction, interpretation, use or exploitation of generic resources." (2002: 18)

Analysing organisational discourse, Bhatia (1999) designed a holistic context model, in which the process of discourse analysis is driven by the following phenomena:

- Purposes: institutionalised community goals and communicative purposes;
- Products: textual artefacts or genres;
- Practices: discursive practices, procedures and processes;
- Players: discourse community membership." (Bhatia 1999:4)

To deal with emerging genres and the dynamic character of the professional communnication, the given genre is located in a situational context, involving the discourse community, i.e. subject matter experts, users, writers of these and related genres. Then, the existing literature should be surveyed, which involves linguistic analysis of similar genres/ varieties, a survey of guide books, practitioners' advice, manuals, discussions of the social structure, interactions, history, beliefs, and goals of the professional or academic community applying the genre in question. Afterwards, the situational analysis has to be further refined by defining the speaker/writer of the text, their relationships and goals, identifying occupational placement of the community and the network of surrounding texts that may form the background to this particular genre. Moving on to lower levels of DA, the linguistic analysis is subdivided into three levels: the analysis of lexico-grammatical features, analysis of text-patterning or textualisation and structural interpretation of the text-genre, which is fundamental for the empirical part of the present investigation and will be discussed in detail below, unveiling functional and formal perspectives of DA. (Bhatia, 1998:22-24)

Table 3 below has been drawn up by the author and summarises and correlates the criteria to identify and analyse relevant non-linguistic characteristics of context in professional communication as proposed by Bhatia (1999), van Dijk (2004), Fairclough (1995), Munby (1978), Conrad (2001), Gray (2011) and Halliday (1992).

Munby (1978)	Martin (1997) (Halliday) (1992)	Fairclough (1995)	Conrad (2001)	Bhatia (1999)	van Dijk (2004)	Gray (2011)
Inherent characteristics for situational context modeling						
Participants	Field (description of participants)	_____	Participants (addresser/ addressee)	Players: discourse community members	Participants Macro level: groups, institutions; organizations	Participants

					identities; Micro level: persons, identities Roles	
Setting	Field (description of circumstances)	_____	Setting	_____	Setting Macro level: period (days, months, years); space (city, country); Micro level: interaction time; location;	Setting
Interaction	Tenor (social relations)	_____	_____	_____	Relations Macro level: institutional power; Micro level: personal power;	_____
Purposive domain	Field (systems of activity)	Discourse practice	Subject matter	Practices: discursive practices, procedures and processes	Macro level: macro act of group; Micro level: actions	Subject/ topic
Communicative event	Field (actions)	Social practice	Purpose	Purposes: institutionalised community goals and communicative purposes	Group goal Macro level: social knowledge Micro level: personal knowledge	Purpose
Instrumentality	Mode	_____	Evidence	_____	_____	Nature of data/ evidence
Communicative key	Tenor (social relations)	_____	_____	_____	_____	_____
Dialect	_____	_____	_____	_____	_____	_____
Marginal characteristics for situational context modeling						
_____	_____ _	Text production/ text	Physical layout	Products: textual artefacts or genres	_____	Textual layout

		consump-tion				

Table 3. Analytical frameworks for situational analysis (compiled by the author)

According to Conrad (2001), the relevant analytical framework for situational analysis should meet the following criteria:

- the analysis of situation should be conducted separately from the linguistic analysis;
- it needs to be consistent in coverage of situational characteristics;
- it should be applicable for the analyses of a large number of texts;
- when implemented, it should enable the researchers to conduct investigation on multi-levels, e.g. across text categories within each discipline (e.g., research articles vs. textbooks), across disciplines for each text category, across individual texts within a category and discipline, and across the internal sections of texts (2001:43).

Although Conrad (ibid) asserted to separate the linguistic and the situational analyses, the author has decided to include genres as textual artefacts and linguistic realisation of organisational practice as marginal characteristic due to the nature of the research questions to identify the recurrent genres in IT use for professional purposes.

As it is clearly seen from the table the following characteristics overlap being primary: participants, setting, communicative aim, discursive practice, genres. The secondary characteristics for situational context modelling in the present research comprise instrumentality, communicative key and dialect, being significant only for particular genres or discourse communities. The abovementioned has determined the key factors of the empirical investigation of the present study.

Applying the devised analytical framework for context modelling, a survey and semi-structured interviews were designed and conducted.

A detailed account of the situational context modelling and the application of results in the design of questionnaires and interviews are presented in section 5.2 below.

Summarising the chapter, the concepts of discourse and discourse analysis are widely used in humanities and social sciences leading to a variety of definitions, dichotomies and applicable integrated frameworks. Considering the applied nature of the present study, it should be noted that despite the debate among linguists the social, functional and textual views of discourse are not mutually exclusive, but essentially complementary to each other. Bhatia (2002) considered that the proposed frameworks may be used in a number of ways, depending upon the objective

one may need or decide to pursue. The present research attributes the concept of discourse to the written mode of communication and clearly discriminates between text and discourse, adopting Fairclough's (1995, 1995a), Bhatia's (1999, 2002) and Widdowson's (2004) views. As suggested above, discourse analysis is executed at social, functional and textual levels, modelling the social situational context, conducting genre analysis and performing textual analysis (the investigation of the formal features, such as vocabulary, grammar, syntax and sentence cohesion) in order to trace discursive and generic linguistic realisation reflecting the social practice.

For the analysis of the empirical data from the corpus, both conceptual approaches, that is discourse analysis as method and as theory, are implemented. The former adopts descriptive and critical perspectives. The latter enables us to go beyond the sentence level and trace the manifestation of textual and ideational metafunctions. It also facilitates the investigation of language use in IT organisational setting, conducting applied genre analysis, addressing the problems of professional genre intertextuality, hierarchy, conventionalism and dynamism, unveiling the ideational language function. The interpersonal language function (the members of discourse community, their identities, roles, relations and influence of discourse production/consumption process) is not central to the present study due to the specificity of communicative events and communicative aims expressed in IT professional genres under consideration. The communicative events in IT professional discourse are of informative and performative character, i.e. they are accompanied by genres which provide information regarding professional activities, processes and actions or induce to action.

Discourse as a social practice encompasses macro-contextual modelling and the description of the wider linguistic and the local situational contexts. Its sheer advantage for the present study is the analysis of conventionalised or institutionalised textual artefacts in the context of specific institutional and disciplinary practices, procedures and cultures. It may also be applicable in identifying and interpreting unknown and emerging genres, which is a dynamic process in a professional setting since members of specific discourse communities construct, interpret and use these genres to achieve their community goals. Besides, it enables to reveal the identities and relations of discourse community members and evaluate their influence on discourse production and consumption (excluded from the present investigation).

Undertaking discourse analysis from both the applied linguistic and social perspective, the author has chosen a top-down approach, starting with the investigation of situational and wider linguistic context, aimed at building the network of professional genres pertinent to IT discourse

and finishing with the analysis of rhetorical and lexico-grammatical peculiarities, the lexeme being the smallest component for analysis.

CHAPTER 3. DISCOURSE AND GENRE:CONTEXTUALISATION, RHETORICAL ORGANISATION AND TEXTUALISATION ASPECTS

The present chapter examines the concept of genre in linguistic tradition and carries out a comprehensive analysis of the views by Fairclough (1995), Bhatia (1992, 2004), Swales (1990), Cook (1992) and other scholars who consider genre as an inherent part of discourse. It provides an overview of the definitions of genre, highlighting the social, cognitive and structural perspectives. It also compares the main principles of the SFL, the New Rhetoric and the ESP Genre Schools, suggests an integrated framework for the applied genre analysis and discloses genre-related phenomena, namely genre intertextuality and interdiscursivity, genre recontextualisation, genre conventionalism and dynamism.

3.1 Defining genre

Genre analysis originates from the ancient Greek rhetorical studies. The concept of genre is addressed in literary theory, art, and the media. In the contemporary linguistic perspective, its development has significantly been facilitated by the SFL, the New Rhetoric and the ESP Schools. Its founders and supporters have shaped the analysis from sentence-based (register analysis) through discourse-based rhetorical to social, analysing the communicative event and the pertaining linguistic features to it. In 1990, the definition of genre from the point of view of applied linguistics was crystallised by Swales, claiming that genre is "a noticeable communicative event associated with a set of communicative purpose(s) identified and mutually understood by the members of the academic or professional community in which it regularly occurs". (Swales, 1990)

Later definitions did not differ much, for instance Bloor and Bloor (1993) defined genre as a specific product of a social practice which can be described structurally and taught because of its formal characteristics. Roseberry (1997) asserted that genre is identified as a sequence of moves or segments where each move accomplishes some part of the overall communicative purpose of the text.

Bhatia and Swales proceeded further claiming that "it [genre] most often is a highly structured and conventionalized [...] and various genres display constraints on allowable contributions in terms of their intent, positioning, form and functional value [...] These constraints

are often exploited by the expert members of discourse community to achieve private intentions within the framework of socially recognized purpose (s)". (Bhatia 1998: 13-15)

Bruce (2008) best summarised the twofold approach to genre and genre analysis and distinguished (a) social genre, and (b) cognitive genre, the former relating to communicative purposes, the latter focusing on the internal organization. It determined the analysis stages in the empirical part, namely, after building genre network and establishing genre intertextual relations the communicative aims of recurrent IT professional genres are identified and their rhetorical structure is defned.

The dichotomy depends on the genre schools the scholars descend from. The Systemic Functional Linguistics emphasises a functional perspective of the study of language and highlights the relationships between the genres and text types and the contexts in which they occur; the English for Specific Purposes School highlights communicative events which have typical schematic structures recognised by its users. Thus, they focus on communicative purposes and their formal linguistic features in various academic and professional settings; New Rhetoric Studies investigate rhetoric, composition studies and professional writing. (Karapetjana, 2009:126)

Similarly to the textual, functional and social views of discourse, genre schools emphasise the textual, functional and social pre-requisites of genre analysis.

The author of the paper shares the views of Swales (1990) and Bhatia (2004) and attributes the concept of genre to the textual representation of a communicative event associated with a set of discursive practices and communicative purpose(s) recognised and consumed by the members of the professional community in which it occurs recurrently.

3.2 Genre Schools

The Systemic Functional Linguistics or Australian (Sydney), the ESP and the New Rhetoric Genre Schools appeared roughly at the same time, however, developing independently and having different preconditions in the basis. The unifying factors for all three Schools are the significance of the social context, the functional use of language and considering genres as constituent parts of discourse (as shown in Figure 7 below.)

The ESP (Bhatia 1993, 2004; Swales, 1990, 2004; Flowerdew and Peacock, 2001; Munby, 1978 a.o.) and the Sydney Genre Schools (Halliday, 1994; Martin and Christie, 2000; Martin and Rose, 2007) possessed educational implications in genre analysis and, therefore, the research was initiated, viewing genres as relatively stable linguistic phenomenon, whereas the scholars of the New Rhetoric Studies placed the correlation of the social action and text rhetoric

central to their investigation, admitting the flexibility of the linguistic means required to express regular social/ communicative events of the members of discourse communities in activity systems (discursive practices). (Miller, 1984; Freedman and Medway eds., 1994; Devitt, 1991)

The differences stem from the discourse community or the target audience involved in genre production/consumption. For the systemicists, these are students who either acquire English as a second language or whose English L1 literacy skills need considerable scaffolding. For the ESP specialists, the primary audiences are students in EFL situations or who need to acquire specialized EAP discourses as a part of their professional activity. And for the New Rhetoricians, the primary audience consists of undergraduates taking composition or rhetoric courses as part of a Liberal Arts education. (Bazerman, et al, eds. 2009:3)

Swales (2009) and Bawarshi and Reiff (2010) asserted that the disparity in target audiences has important implications for modelling the social context and conducting the genre analysis. Primary and secondary school students are not taught to write genres for professional communication. Therefore, SFL researchers, according to Johns (2003) and Swales (2009), investigated "pre-genres" o text types such as explanations, recounts, or description. Conversely, the ESP and the New Rhetorics scholars worked with more advanced students and professionals, thus, their academic disciplines and professional/occupational settings were distinct and the genres belonging to their contexts were clearly identifiable during the needs analysis stage, e.g. research articles, research proposals, CVs, meeting minutes, e-mails, manuals etc.

3.2.1 Genre in the SFL tradition

The Sydney Systemic Functional (Halliday, 1994; Halliday and Mathiessen, 2004; Eggins, 2004) tradition viewed the linguistic forms as the systems of choices and highlighted their functions (ideational, textual and interpersonal) in social settings. It was initiated by Halliday, defining the context at a macro level in terms of field (the activity or the domain), tenor (the participants involved) and mode (the channel of communication) and further applied to genre by Martin (1997), Martin and Christie (2000), Christie (1999), Paltridge (2006) and others, critisising process-based pedagogical approaches to writing.

The field is concerned with systems of activity, including descriptions of the participants, process, and circumstances these activities involve. The tenor focuses on social relations, as these are enacted through the dimensions of power and solidarity. Mode highlights the semiotic distance, as this is affected by the various channels of communication through which we

undertake activity (field) and simultaneously enact social relations (tenor), forming a genre, which is schematically represented in Figure 7. (Martin, 2000)

Bawarshi and Reiff (2010) emphasised the mutual relation of the linguistic forms and the social context and wrote that "the concept of "realization" is especially important within SFL, for it describes the dynamic way that language realises social purposes and contexts as specific linguistic interactions, at the same time as social purposes and contexts realise language as specific social actions and meanings" (2010:30) .

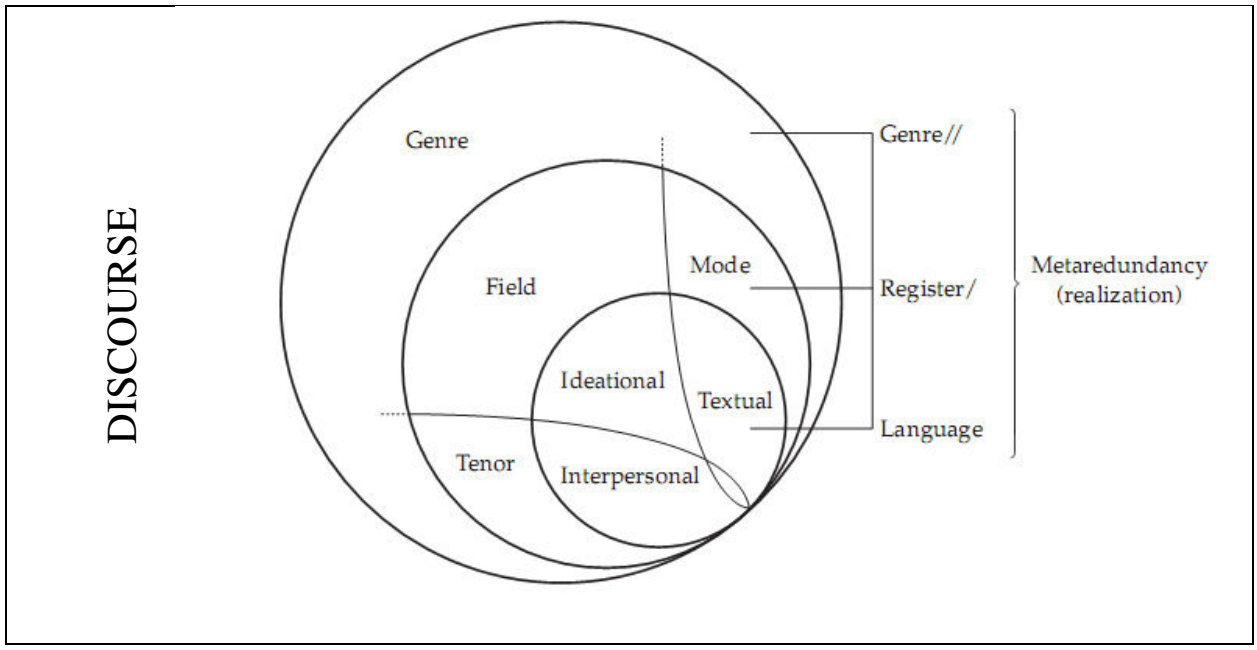


Figure 7. Metafunctions in relation to register and genre (Martin 2001:46)

Based on the integral macro-contextual components, Martin defined genres as "staged, goal-oriented social processes through which social subjects in a given culture live their lives". (1997:43). As he explained further, genres are identified with social processes as "the members of a culture interact with each other to achieve them"; they are goal-oriented "because they have evolved to get things done"; and staged "because it usually takes more than one step for participants to achieve their goals" (ibid: 59).

The major Martin's contribution to the development of genre in the systemic functional tradition is correlating the concepts of genre and register and their mutual significance, as presented in Figure 7. Halliday, in his research, focused on register rather than genre, whereas his followers, (Martin, and Christie, 2000; Martin and Rose, 2007) have elaborated on genre theories within a systemic functional framework exploring primary and secondary school genres

and non-professional workplace texts rather than university and professional writing, which distinguishes them from ESP or New Rhetoric School researchers. (Martin and Christie 2000; Martin, Rose, 2007)

Figure 8 below illustrates that register functions on the level of **the context of situation**, whereas genre functions on the level of **the context of culture** of a discourse community.

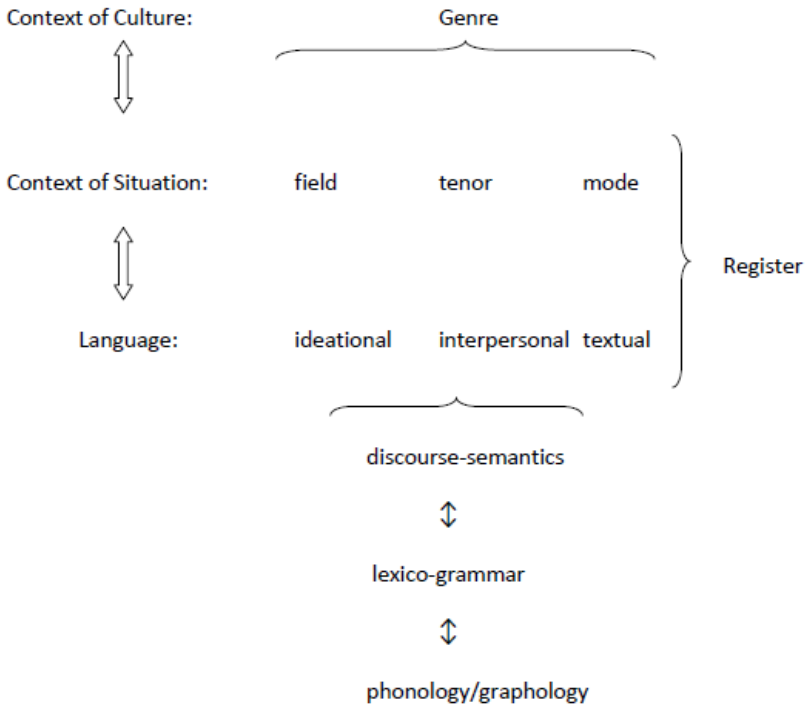


Figure 8. The correlation of genre and register in different context types (Martin, 1997)

His and other SFL scholars' research (Martin and Christie 2000; Martin and Rose, 2007) facilitated a very strong movement of the integration of genre into the learning curriculum to elaborate on literacy of indigenous communities, disadvantaged groups, schoolchildren as well as run teacher professional development training programs in Australia and across Europe (Reading to Learn and Learning to Write National Projects, LERN Literacy and Education Research Network) project). They claimed that an explicit focus on pre-genres and genres in literacy teaching helps to reveal the relationship between text structures and social purposes, which can be observed in the diagrams above. According to Cope and Kalantzis (1993:9), the projects were aimed at identifying recurrent pre-genres and genres typical of school literacy with a further expansion of genre network to a workplace setting, analyzing adult migrant English as a second language. It resulted in the advancement of the "teaching-learning cycle" genre pedagogy

(Feez and Joyce, 1998), with three distinct stages: modelling, joint negotiation of text, and independent construction of text. Its critique (Cope and Kalantzis, 1993:14) unfolded in the direction that starting with texts and investigating language metafunctions, the approach ignored the social relations and contexts in which genres occurred, which in pedagogical terms might mean cultural assimilation of the non-native target audience exposed to genre teaching-learning. Therefore, later research, e.g. Feez and Joyce (1998), addressed this issue and added the stage "Building the Context" which is conducted prior to text modelling. Feez (2002) suggested implementing ethnographic strategies for "learners to experience and explore the cultural and situational aspects of the social context of the target text" (Feez, 2002: 66), e.g. interviews, field trips and on-site observations.

Turning to the rhetorical analysis, ESL recent framework of stages and phases in genre analysis (Paltridge, 1997; Martin and Rose, 2012) resembles the one by Swales, i.e. CARS model of moves and steps (1990, 2004) or by Trimble, i.e. the framework of rhetorical functions and techniques based on communicative events and their aims, which proves the fact that the boundaries between the tenets of these schools are vague. (as presented by C. Acevedo in the 2nd LinC Summer School in Systemic Functional Linguistics Workshop in Cardiff School of English, Communication and Philosophy)

The focus on text form distinguishes the Australian work from the socio-contextual genre descriptions in the New Rhetoric in terms that there is far greater emphasis by the Sydney School scholars on explicating textual features, using Hallidayan schemes of linguistic analysis. The SFL frameworks have focused on both global text structure and sentence- level register features, associated with field, tenor, and mode (Christie, 1999; Martin 1997, 2000, Martin 2001, see Figures 7 and 8 above).

As a result of the overview, it can be concluded that both the SFL and the ESP movements share analytical strategies and were driven by language acquisition implications to teach genres to different discourse communities. Genre can be defined as conventionalised organisational stages recognized and consumed by the discourse members and related to lexico-grammatical phenomena, which in the SFL tradition are genre defining, whereas in ESP genre is a determinant of lexico-grammatical choice (Swales, 1990:41-2).

3.2.2 Genre in the ESP tradition

As the name suggests, the ESP focuses on researching and promoting the acquisition of specialised varieties of English, namely for academic or professional/ occupational purposes to

non-native language users of a more advanced level, which corresponds to the target audience of the present study. It has been developing since the 1960s and researchers in ESP have been interested in genre as a tool for analyzing and teaching the spoken and written language required for non-native speakers in academic and professional settings since the 1980s (Munby, 1978; Widdowson,1983, 2003; Bhatia, 1993; Flowerdew, 1993; Dudley-Evans, 1988; Swales, 1990). However, its development was significantly facilitated by Swales in 1990, who crystallised the definition of genre in the ESP tradition and theoretised key principles and methodology. The scholar (1990) highlighted the significance of the need for communication and communicative purposes driven by communicative events which give rationale to genre and are characterised by typical internal formal structures recognised by other discourse participants. Therefore, the investigation of the discourse community and the communicative event and the communicative purpose often serve as a starting point while conducting a genre analysis and is reflected in the empirical part.

Since the 1960s the ESP has gained a narrower focus from register analysis of overarching domains, e.g. EAP, EST, English for Legal or Medical Purposes, to generic varieties pertinent to these domains. Swales wrote that this "deeper or multi-layered textual account " resulted in "assessing rhetorical purposes, in unpacking information structures and in accounting for syntactic and lexical choices" (1990:3) The ESP researchers pursued a structural move analysis to describe global organizational patterns in genres such as experimental research articles (Swales,1990), MSc dissertations (Hopkins & Dudley-Evans, 1988), medical abstracts (Salager-Meyer, 2008), business letters (Bhatia, 1993) a.o. Others looked at sentence-level grammatical features, such as verb tense, hedges, and passive voice, in these genres (Salager-Meyer, 1994; Swales, 1990; Tarone, Dwyer, Gillette, & Icke, 1981).

Swales (1990:2) noted that the ESP can be related to "quantitative studies of the linguistic properties . . . of registers of a language" to determine the frequency of linguistic features in a particular register and then bring these phenomena to a classroom as a target language. Early work in the ESP implemented corpus linguistics tools to undertake quantitative studies of the linguistic properties of genres. As a matter of fact, textual patterning of content through moves and steps was challenged by corpus linguists Biber (1989) and Paltridge (1997). Having extensive corpus data, Biber claimed that genres cannot be solely described in linguistic terms and should be "defined and distinguished on the basis of systematic, non-linguistic criteria", which gave rise to the development of genre as a social phenomenon, highlighting the significance of a discourse community, implementing ethnographic approach, thus broadening

the concept of genre (1989:39). Swales (1998:54) viewed discourse community's "nomenclature for genres [as] an important source of insight" to provide significant ethnographic information for social context modelling to interpret how and why discourse participants utilise genres and to reflect discursive processes/activities.

More importantly, later Askehave and Swales (2001) revisited the notion of communicative purpose and claimed that it has assumed a taken-for-granted status, a convenient but under-considered starting point for the analyst. In their view,

> purposes, goals, or public outcomes are more evasive, multiple, layered, and complex than originally envisaged... and we are no longer looking at a simple enumerable list or 'set' of communicative purposes, but at a complexly layered one, wherein some purposes are not likely to be officially 'acknowledged' by the institution, even if they may be 'recognized'—particularly in off-record situations—by some of its expert members. (2001:197-199)

Similarly, Bhatia admitted that genre peculiarities are often exploited by the expert members of the discourse community to achieve private intentions within the framework of socially recognized purpose(s) (1993: 13).

The abovementioned and later research activities brought ESP closer to the New Rhetoric Studies (e.g. Swales's study of textography of university institutional context (1998) and genre networks (2004), Bhatia's papers on intertextuality and interdiscursivity (2008, 2010), Bruce's research on social genre knowledge (2008).

3.2.3 Genre in the New Rhetoric Tradition

In contrast to the ESP, the representatives of the New Rhetoric Studies (Miller, 1984; Berkenkotter and Huckin, 1995; Freeman and Medway eds., 1994; Bazerman et al 2009) viewed genre as a social action, a reflection of the activities performed by the community, creating a shared knowledge base. In their views, genres not just express the communicative purposes within the discourse community but mediate the activities pertinent to the domain. Thus, while the ESP scholars set an objective to identify genres and their communicative aims and to examine structural and lexico-grammatical peculiarities, the New Rhetoric researchers address genres as "sociological concepts embodying textual and social ways of knowing, being, and interacting in particular contexts" and consider genre textual regularities as socially constructed (Bawarshi, Reiff, 2010:57).

Influenced by activity theory, ethnomethodology, Bakhtinian dialogism, phenomenology and rhetoric studies, the scholars asserted that genres reflect the recurrent practices of a discourse

community, are inextricably tied to the social context and form genre repertoires (Orlikowski and Yates, 1994), genre systems and sets (Swales 2004) or genre ecologies (Spinuzzi 2000) etc.

The proponents of activity theory, a conceptual framework evolving in the socio-cultural tradition in Russian psychology, (Leontyev, 1978, Engestrὸm 1987) viewed activity as purposeful interaction between subjects and objects, defined in phenomenology as intentionality, with genre being an artifact and a mediator (Spinuzzi 2000, 2004)

According to Bawarshi and Reiff (2010), "phenomenology relates to genre theory in that in the same way intentions bring objects to our consciousness, genres bring texts and situations to our consciousness and so inform our intentions. Genres inform our intentionalities". (2010:66-67)

Kofod-Petersen and Cassens (2006) defined activity mediated by genre at three hierarchical levels, i.e. it consists of actions that are related to each other. Action, in its turn, is composed of operations, which are automatic tasks. They asserted that activities are driven by motives while actions and conditions are affected by goals and operations respectively.

The influence of ethnomethodology (Garfinkel 1967) is seen in the way that it facilitates the study of routine activities and seeks to organise them in a common sense order. Paré and Smart (1994) advocated that the use of this approach in genre studies, researching professional communication, would not confine the researchers solely to textual practices but would allow them to model social context around genres and "explore the full range of social action that constitutes an organization's repeated rhetorical strategies or genres". (1994:153)

One of the most notable definitions in the New Rhetoric tradition was provided by Miller who theoretised upon and recontextualised the concept of genre as a social action and defined it "as typified rhetorical actions based in recurrent situations". (1984:31)

Other definitions are similar, e.g. Bazerman et al advocated that

> genres are not just forms. Genres are forms of life, ways of being. They are frames for social action. They are locations within which meaning is constructed. Genres shape the thoughts we form and the communications by which we interact. Genres are the familiar places we go to create intelligible communicative action with each other and the guideposts we use to explore the unfamiliar. (1997:19)

Merging the views of social phenomenology and rhetorical criticism, the scholars claimed that genres emerge from the "the knowledge that practice creates" (ibid:27) and govern work of organisations *per se* or the accomplishment of smaller tasks. Drawing on Campbell and Jamieson's (1978) view that "a genre does not consist merely of a series of acts in which certain rhetorical forms recur.... Instead a genre is composed of a constellation of recognizable forms

driven by an internal dynamic" (1978: 21) and Bitzer's (1968) notion of exigence, Miller (1984) suggested that people in their social networks recognize the need to respond (exigence) to specific situations, categorise those situations and select linguistic means to respond effectively. When such responses involve other genres and the illocutionary act is changed into perlocutionary, Freadman (2002) used the term uptake, borrowed from Austin's Speech Act Theory (1969). Bawashi and Reiff (2010) defined it as 'the ability to know how to negotiate genres and how to apply and turn genre strategies (rules for play) into textual practices (actual performances) (2010:85)'. Giltrow (2002) asserted that uptakes are stabilized and are governed by meta-genres in the way that meta-genres (e.g. manuals, guidelines, standards) provide information on how to produce certain genres and locate them appropriately in a genre system or ecology. She defined them as "atmospheres surrounding genres" (2002: 195) which possess "semiotic ties to their contexts of use" (ibid:190).

Berkenkotter and Huckin (1995) followed a similar view and claimed that genres dynamically reflect the knowledge and activities of a discourse community and the processes of knowledge formation and genre formation are bound by a socio-cognitive perspective. They outlined the following genre characteristics in relation to genre as a social action belonging to a discourse community:

1. dynamism;
2. situatedness;
3. form and content;
4. duality of structure;
5. community ownership. (cited in Luzon 2005: 286)

Berkenkotter and Huckin (1995) claimed that genres change in accordance with the communicative needs of the discourse community and are viewed as "dynamic rhetorical forms that are developed from actors' responses to recurrent situations and that serve to stabilise experience and give it coherence and meaning" (1995:4). They considered that genre repertoire, system or ecology reflect discourse community activities, actions and operations, and, therefore, change as soon as the activities change since "our knowledge of genres is derived from and embedded in our participation in the communicative activities of daily and professional life". (1995:4) The activity being overarching, discourse community in New Rhetoric tradition should be regarded as a community of practice, which not only recognises the form and structure of certain genres, but also locates it in wider linguistic and socio-cultural context and applies it appropriately. Duality of structure presupposes that genre and social actions mutually influence

each other. The ownership of genre as a social action is unique in a way that the participants involved in the process of communication share common knowledge base, but for the outsiders they are difficult to identify and manipulate. The abovementioned explains the significance of the social situational context modeling at the initial stage of linguistic investigation and the correlation of the professional activities and genres.

Driven by applied implications, activity theory, ethnomethodology and having background in education, technical communication, sociology, workplace communication and linguistics, New Rhetoric Studies scholars initiated their research by identifying the repertoire of genres used by that community and proceeded with the investigation of mediation of social activities, characterised by the phenomenon of genre ecology. Spinuzzi and Zachry (2000) defined it in terms of contingency (ibid: 173); decentralization, or the "distribution of usability, design, and intention across the ecology of genres" (ibid: 174); and stability, or "the tendency of users to make the interconnections between the genres they use conventional and official". (ibid:175) They and other researchers (Orlikowski and Yates, 1994; Bazerman et al, 2009; Orr, 1999; Bawarshi and Reiff, 2010) claim that despite being dynamic, adaptive and focusing on compound mediation (i.e.) the interrelations among genres tend to be stable and can be explored in terms of genre sets, genre systems, genre repertoires and most consistently genre ecologies.

To conclude, with the advancement of genre as a social action in the New Rhetoric tradition genre research moved from analysis of single genres proposed by SFL and ESP researchers to groups of connected genres and the relationships among them within activity systems. This shift facilitated recontextualisation of the concepts of uptake and intertextuality, the consideration of interdiscursive processes and the concept of meta-genre, research in professional communication to explore genre within their local and wider social context (e.g. in tax accounting (Devitt, 1991), healthcare (Berkenkotter 1995), software development (Spinuzzi 2004), enabling scholars to uncover complex social and intertextual relations within their professional communication models, building an organic and dynamic genre ecology, system or network based on social discursive processes.

Being an ESP practitioner, the author has taken the recent views of ESP scholars as the guiding ones since they account for not only contextual relations, but also for recurrent structural elements and textualisation processes of genre. However, the significance of tenets of the New Rhetoric studies and its influence on ESP and SFL tradition in terms of expanding the focus of research and increasing the role of the social context and ethnographic study in response to Bazerman's and Swales's call should not be disregarded (e.g. Swales and Feak, 2009; Bhatia,

2004) since this conception is the closest to the target situation of research activities, but it is not feasible to apply the theoretical framework of the New Rhetoric solely due to the presupposition to use ethnographic and ethnomethodological data collection tools.

3.3 Genre analysis

3.3.1 Methodological constraints

Considering the theoretical considerations discussed above, it can be concluded that genre analysis is viewed as situated linguistic behaviour in institutionalised (Swales, 2004; Martin, 2000, 2007; Halliday, 1994 2004; Martin and Rose, 2007) or professional (Bazerman, 2009; Bhatia,1993, 2004; Berkenkotter and Huckin, 1995) setting highlighting typification of rhetorical action within an activity system (Miller, 1984; Bazerman, 2008), the significance of communicative purposes (Swales, 1990, 2004; Bhatia, 1993, 2004) or regularities of goal-oriented social processes (Martin, Christie, 2000; 2007; Eggins,2004). Depending on the genre school described above, genre analysis is located within textual and socio-cultural dimensions and is implemented involving the analysis of the context of situation and beyond and resulting in the application of multiple research perspectives, methods and data collection tools. For instance, **critical and ethnographic analysis**, interviews and case studies (Bazerman, 2008) have become increasingly important means of collecting data in academic, educational and professional contexts, for the research of developmental aspects of individuals' language and genre dynamism. Moreover, the critical perspective approaches genre as a socio-cultural construct.

Undertaking **corpus studies**, (Paltridge, 1997; Biber and Clark, 2002) the computational analysis of language unveils patterns of form and use in particular genres and areas of language in local linguistic context.

Conducting **textual analysis** (Halliday, 1994; Eggins, 2004; Martin and Rose 2007) and providing linguistic descriptions of texts, especially the analysis of lexico-grammatical systems in register analysis, text-linguistics and much of discourse analysis based on systemic-functional framework has been extremely influential in the studies of textualisation of a range of professional genres.

Cognitive considerations (van Dijk, 2004; Bruce,2008; Hyland, 2000) guide the language acquisition and knowledge dissemination (CLAVIER Research group) of genre as a social construct.

These views justify the requirement of a balanced integrated analytical framework for genre analysis and trace the trajectory in the ESP and New Rhetoric tradition to move from

context to text, the context being central for which they are often critiqued. North American genre researchers, through their dependence on qualitative studies, have focused on exploring social context rather than texts and that the New Rhetoric School has failed to link genre research to language acquisition issues. The New Rhetoric School advocates, on the other hand, have critiqued the Sydney School, for abstracting genres from their social contexts and attempting to codify them (Freedman & Medway, 1994).

Bhatia (2002) best summarised the perspectives on genre analysis in Figure 7 below, which presupposes a multi-faceted not a linear genre analysis.

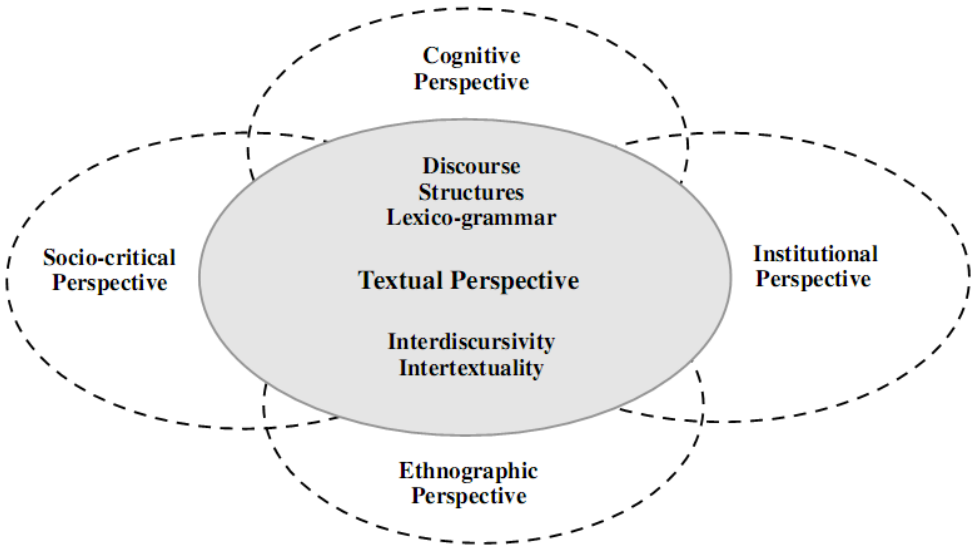


Figure 7. Perspectives on genre analysis

The scholar highlighted the complexity of analysis by noting that "genre studies range from a close linguistic study of texts as product, investigation into a dynamic complexity of communicative practices of professional and workplace communities to a broad understanding of socio-cultural and critical procedures used to interpret these textual genres in real life settings". (2002: 14)

Van Dijk (2002) expressed a similar view and admitted an ultimate necessity for a sophisticated framework for research, claiming that

> […] discourse analysis for me is essentially multidisciplinary, and involves linguistics, poetics, semiotics, psychology, sociology, anthropology, history, and communication research. What I find crucial though is that precisely because of its multi-faceted nature, this multidisciplinary research should be integrated. We should devise theories that are complex and account both for the textual, the cognitive, the social, the political and the historical dimension of discourse. (2002: 10)

Bazerman and Prior admitted “the methodological dilemma to make sense out of the complexity, indeterminacy, and contextual multiplicity that a text presents us with”. (2004:321)

In order to address the methodological constraints, the following principles when conducting genre analysis should be considered:

1. Genres are identified on the basis of conventionalised features, yet they are constantly developing .
2. Although typical textualisation patterns are identified, yet expert members of professional communities exploit them to create novel patterns, based on the communicative aim.
3. Genres serve typical socially recognised communicative purposes, yet they are sometimes exploited to convey private intentions.
4. Individual generic artifacts are identified, yet in organisational communication they are often seen in hybrid, mixed, embedded and recontextualised forms.
5. Genres are given typical names; yet different members of discourse communities have varying perspectives on and interpretations of them, which sometimes are contested.
6. Genre analysis is associated with a typical textual investigation, yet for more consistent results a variety of methods, including textual analysis, ethnographic techniques, cognitive procedures, computational rigour and critical awareness. (adapted from Bhatia 2002: 7-8)

All the abovementioned principles are driven by genre heterogeneity, hybridity and dynamism as genres reflect a complex and changeable system of professional activities, processes and operations. In the earlier research Bhatia (2001) raised the issue of genre identification as well as the status of super-genres, genres and sub-genres and claimed that “it is difficult to arrive at a classification of professional genres in a clear-cut and objective manner, and the generic boundaries between and across genres are even more difficult to draw”. (2001: 82) In his opinion and the author of the thesis agrees with him, the boundaries between different genres will always be fluid to some extent, which is explained by the complex and dynamic variation and constant development of generic forms used within and across disciplinary cultures. Thus, on the one hand, we speak about the formal conventional linguistic manifestation of genres; on the other hand, we admit that professional genres are dynamic and shaped by the communicative event and communicative purpose respectively. Todorov (1990:15) addressed a similar issue, claiming that genres often quite simply come “[...] from other genres. A new genre

is always the transformation of an earlier one, or of several: by inversion, by displacement, by combination."

The solution is sought in prototype theory emerging from cognitive psychology (Rosch 1973, 1973). Martin and Rose (2007) proposed to apply it in genre studies and differentiate between genre topological and typological classifications, the former dealing with the proximity of genres, "which allows us to relate genres as more or less like one another from as many angles as we wish" (2007:128) and the latter highlighting the difference, which "means privileging one dimension of texture over another as more or less critical for categorisation.." (2007: 136) Bawashi and Reiff (2010) claimed that "rather than starting with *apriori* categories, inductive text typologies classify text types based on perceived textual patterns" (2010:39), which found its reflection in Trimble's framework of rhetorical functions and techniques (1985) and Swales' moves and steps analysis (1990). They continued with Wittgenstein's idea of family resemblances, which "allows genre research to define text membership within genres on the basis of how closely their structural and linguistic patterns relate to the genre prototype. Some texts, thus, are closer to their genre prototype while others function more on the periphery of prototypicality, or, more accurately, on the boundaries of different prototypicalities, as in the case of mixed genres." (ibid)

To bridge the methodological gaps, Bazerman (2008) supplemented Bhatia's list and suggested the following:

1) to examine less obvious patterns or features of texts;

2) to extend the sample to include a larger number and range of texts from different social and historical contexts;

3) to gather other people's understanding of genres via interviews and observations;

4) to conduct ethnographic research of how texts are used in social organizations—particularly within genre sets, genre systems, and activity systems (ibid: 321-22, 326).

The author has considered these views when selecting the research design for the empirical part. Thus, genre analysis at a macro-level considering all recurrently met genres was conducted. The sample of discourse community members for interviews was extended. The situational context modeling resulted in the detailed descriptions genre use.

To conclude, the scholars share views regarding the complexity of the methodological framework for genre analysis, considering textual, functional, cognitive, socio-cultural perspectives and the undeniable value of the ethnographic and ethnomethodological research to help to locate and define genres within the local and wider situational context and organize them

into systems, which can be partially achieved by the prototype theory, typological and topological considerations and intertextuality.

3.3.2 Genre analysis in the local situational and wider linguistic contexts: from interdiscursivity to intertextuality

The views that genres should not be regarded in isolation but in relation to other genres reflecting the systems of activities were proposed by the researchers of the New Rhetoric Studies (Bazerman et al 2009; Orlikowsky and Yates,1994; Spinuzzi, 2004) and implemented by the ESP scholars (Swales and Feak, 2009; Bhatia 1995). Discourse practices or social actions led researchers to look at genres of a discourse community as a system accounting for interdiscursivity, i.e. the mutual influence of texts and professional discursive practices. The scholars used a number of frameworks to describe genres that mediate social actions within complex systems of activities, namely, genre ecologies and genre assemblages (Spinuzzi, 2004), genre sets (Devitt, 1991), genre constellations and networks (Swales and Feak, 2009), genre colonies (Bhatia, 2004), genre system (Bazerman et al, 2009), genre repertoire (Orlikowski and Yates, 1994).

Spinuzzi (2004) provided exhaustive definitions of genre assemblages, being an umbrella term for genre sets, genre systems, genre repertoires and genre ecologies, which sometimes are used interchangeably.He drew a distinction among the terms in question (ibid) and defined genre ecology asan analytical framework for studying how people use multiple artifacts – such as documentation, interfaces, and annotations – to mediate their work activities. Unlike other analytical frameworks, the genre ecology framework has been developed particularly for technical communication research, particularly in its emphasis on interpretation, contingency, and stability. Although this framework shows much promise, it is more of a heuristic than a formal modeling tool; it helps researchers to pull together impressions, similar to contextual design's work models, but it has not been implemented as formally as distributed cognition's functional systems. (Spinuzzi and Zachry, 2000:20)

Freedman and Smart (1997) shared a similar view and claimed that genre ecology reflects genres as activities cyclically performed by the members of discourse community, which, on the one hand are stable, possessing stable connections with other genres, and, on the other hand, may change in response to contingencies, i.e. 'opportunistic coordinations that people and activities make among genres.' (Spinuzzi and Zachry, 2000:200)

They (2000) characterized ecologies in terms of contingency, decentralisation, and stability.

Another concept approaching genre network as a dynamic developing phenomenon is genre repertoire. Orlikowsky and Yates (1994), who coined the term, emphasised non-sequential overlapping nature of relation among genres and claimed that the members of discourse community are exposed to several genres at a time typical of their discourse practices.

In contrast, genre sets and genre systems are viewed as sequential phenomena, e.g. Devitt (1991) claimed that "in examining the genre set of the community, we are examining the community's situations, its recurring activities and relationships…this genre set not only reflects the profession's situations; it may also help to define and stabilize those situations."(1991:340) Swales and Feak (2009) posited that temporary or individual ordering combines into genre sets with communicative event(s) being central. (ibid:23)

Spinuzzi (2004:2) proposed to compare the concepts described above against the following criteria: perspective, the mode of action, agency, relationship between genres and foreground genres. The results are presented in Table 3 below.

	Genre sets	**Genre systems**	**Genre repertoires**	**Genre ecologies**
Perspective	Individual	Communitarian	Communitarian	Activity
Model of action	Communicative	Communicative	Communicative/ performative	Mediatory
Agency	Asymmetrical	Asymmetrical	Asymmetrical	Symmetrical
Relationship between genres	Sequential	Sequential	Sequential and overlapping	Overlapping/ intermediatory
Foregrounded genres	Official (stabilized)	Official (stabilized)	Official (stabilized)	Unofficial (dynamic) and official (stabilized

Table 3. The Comparison of Genre Networks (Spinuzzi, 2004:7)

The findings verify the distinction between the frameworks with "rather different analytical focuses and support rather different agendas." (ibid)

For the present research, genre repertoires and genre systems are of paramount significance as they reflect the genres of the particular discourse community, bearing a communitarian perspective. The users are affected through the communicative and communicative/ performative models of action since the genres in questions perform transactional or ideational language functions, possess a set of predictable communicative aims and induce the members of discourse community to action. In both cases, the agency is

asymmetrical since individuals are in control of genres in the process of discourse consumption and production. The nature of relations in genre is sequential (one antecedent or succedent to another) and sequential/ overlapping (with multiple genres operating simultaneously during a communicative event). The genres are viewed as stabilised (the ESP) or stabilized for now (the New Rhetoric Studies).

Investigating the sequential genre organization further, according to Swales (2004), if genres are set in the logical order of occurrence, 'their chronological ordering, especially if one genre is antecedent for another' forms genre chains. (ibid:18) Other scholars (e.g. Berkenkotter, 2001) use the term system, applying it to the intermediate level of units of institutions.

One more sequential type of genre organisation is genre hierarchy, which, according to Swales (ibid: 13-14), implies ordering different genres in the order of importance and prestige, 'their perceived quality differences and rankings' (ibid 2004:18) determined by interdiscursive processes. The ranking may alter in various spheres and geographical locations. According to Swales (ibid), genre hierarchies, chains, sets and systems form an organic network of genre constellations.

Supplementing Spinuzzi's (2004) table with Swales' (ibid) and Bhatia's (2004) typologies, i.e. genre chains, hierarchies , constellations and colonies, the following characteristics may be applicable:

	Genre chains	**Genre hierarchies**	**Genre constellations**	**Genre colonies**
Perspective	Communitarian/ chronological	Communitarian/ dominant	Activity	Activity/ communicative purpose
Model of action	Communicative	Communicative/ performative	Mediatory	Communicative
Agency	Asymmetrical	Asymmetrical	Symmetrical	Symmetrical
Relationship between genres	Sequential	Sequential and overlapping	Overlapping/ intermediatory	Overlapping
Foregrounded genres	Official (stabilized)	Official (stabilized)	Unofficial (dynamic) and official (stabilized)	official (stabilized

Table 4. The Comparison of Genre Constellations (compiled by the author)

As it can be seen from Table 4 above, genre constellations and genre ecologies possess identical characteristics and may be used interchangeably, whereas other typologies cannot since they actualise diverse analytical perspectives, e.g. chronological and sequential organisation of genres (chains), dominance (hierarchies), individual requirements (sets), communicative purposes (colonies), etc.

Grouping a number of genres "within and across disciplinary domains which largely share the communicative purposes that each one of them tends to serve" is defined as colony or colonisation', which may lead to creating hybrid (both mixed and embedded) forms, considered as secondary members of the colony. (Bhatia 2004:57)

Genre organisation into any kind of networks is inevitable and numerous notable scholars (Swales and Feak 2009; Bhatia 2004, 2010; Faiclough 1995; Bazerman et al, 2009) claim that genres do not stand in isolation and are related to each other sharing various common features. As Swales (2004) wrote, "they turn out to be the totality of genres available in a particular sector (such as the research as seen from any chosen synchronic moment." (Swales, 2004: 22)

The concept of genre networks has been grounded in Kristeva's intertextuality (1980), the Bakhtinian notion of dialogism (1929/ 1984) and Fairclough's (1995) interdiscursivity.

The term intertextuality was proposed by Kristeva (1980). She referred to texts in terms of two axes: a horizontal axis connecting the author and reader of a text, and vertical, which connects the text to other texts through contexts (ibid). She argued that rather than confining our attention to the structure of a text we should study its 'structuration' (how the structure came into being). This involves locating it 'within the totality of previous or synchronic texts' of which it was a 'transformation'. (ibid) For the present research the vertical axis, i.e. the relation of professional genres to other professional genres within professional communication, will be considered by the author of the paper. Moreover, the concepts of genre ecology, genre repertoire, genre hierarchy and genre chain are applicable in the empirical part for the analysis of IT organizational discourse.

According to Kornetzki (2012), the concept and the term of intertextuality was transferred from critical literary theory to linguistics by Zimmermann (1978), who investigated it at the level of content and text types. Beaugrande and Dressler (1981) and Heinemann (1997) developed it further within text linguistics postulates and located it among seven other standards of textuality along cohesion, coherence, intentionality, acceptability, informativity, situationality.

Beaugrande and Dresser (1981:188) distinguished syntagmatic (referential) and paradigmatic (typological) intertextual relations, the former being overt intertextual relations expressed through references and citations, the latter being the relations of text patterning. The theoretical framework gave rise to further investigations of intertextuality within text linguistics, discourse studies, critical discourse analysis in particular, and genre studies described above. The author of the present research utilized both syntagmatic intertextuality searching for its overt manifestation among genres/documents in question and paradigmatic intertextuality uncovering intertextual relation based on the professional discursive processes.

Lemke (2005) considered the SFL postulates of language being context-dependent and governed by three metafunctions (ideational, interpersonal and textual) (Halliday 1994) and proposed to apply them to investigate intertextual relations. Namely, the texts, belonging to a similar topic, are connected ideationally, possessing a similar stance of the author interpersonally, having similar textual patterns textually. If the connections are present at all three metafunctional levels, though of a different degree, the texts are considered as intertexts to each other. Hence, he (ibid) distinguished three types of intertextuality, i.e. co-thematic, co-orientating and co-generic respectively. In the empirical part the author has observed co-thematic intertextuality since the genres in the repertoire are grouped according to the theme as well as co-generic as the transformation of the same technical solution (idea) is observed in various genres, which results in similar rhetorical moves and textual patterns.

Defining intertextuality (Kristeva 1980; Beaugrande and Dressler 1981; Bhatia 1995, 1998) and interdiscursivity (Fairclough 1995; Bhatia 2010), it should be noted that intertextuality refers to the phenomenon that other texts are overtly drawn upon within a text, which is typically expressed through explicit surface textual features such as references, quotations and citations. Interdiscursivity (Fairclougn 1995; Bhatia 2010), however, operates on a different dimension in that it refers to how a text is constituted by a combination of other language conventions (genres, discourses, discursive practices). Thus, the difference between these two concepts lies in the fact that intertextuality refers to actual surface forms in a text, borrowed from other prior texts; whereas interdiscursivity involves the whole language system referred to in a text. In this sense, interdiscursivity is a more complex phenomenon since it is concerned with the implicit relations between discursive formations rather than the explicit relations between texts and, as a result, accounts for the attempts to create hybrid, relatively novel, embedded constructs by appropriating the existing genres and discursive practices.

Some scholars (e.g. Xin 2000: 191) have used the term 'generic intertextuality' to cover what interdiscursivity actually refers to. However, these two notions do not always have the same connotation in the sense that interdiscursivity does not always refer to the mixing of different genres. In some cases, it is the articulation of discourses, discursive practices or styles that makes sense in the formation of interdiscursive relations.

The distinction between the concepts of interdiscursivity and intertextuality derives from Fairclough's (1992) dichotomy of constitutive and manifest intertextuality when he accounted for the more overarching concept of intertextuality. He claimed (ibid) that manifest intertextuality refers to the explicit presence of one text in another through the techniques of discourse representation, presupposition, negation, metadiscourse and/or irony. Constitutive intertextuality, in its turn, is attributed to the mixing configuration of discourse conventions such as genres, activity types, and styles associated with different types of discourse, thus it is not overtly present in the textual artifact but is to be retrieved from the social context (ibid).

Bhatia (2010) schematically showed the constituents of interdiscursivity linking directly the analysis of professional genres with professional discursive practices through the appropriation of generic resources. He claimed that professional practices and genres are mutually interrelated in the sense that discursive practices are reflected in the textual artifact, yet a genre may determine discursive behavior and influence the creation of other genres within the network or outside it, which has been consistently investigated by the New Rhetoric Genre School scholars.

The summary of the manifestation of interdiscursivity in professional context modelling contexts and conducting applied genre analysis, discussed above is best represented in Figure 8 below.

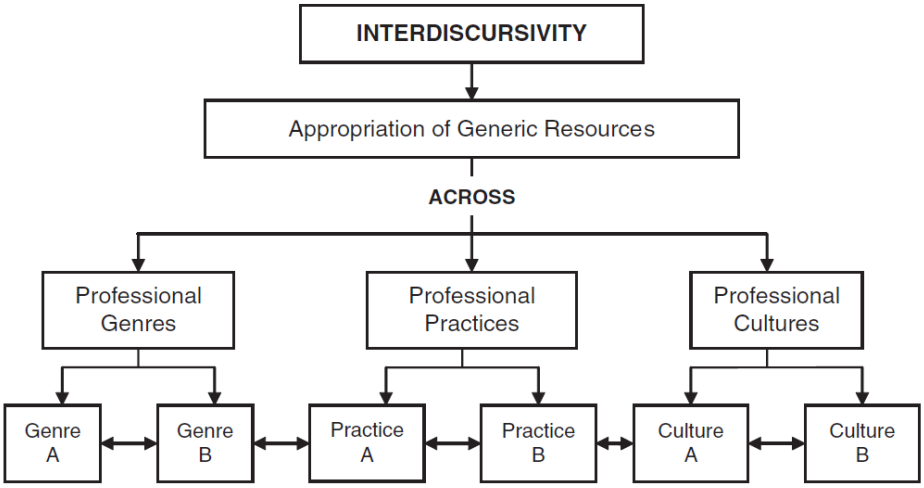


Figure 8. Interdiscursivity in professional contexts (Bhatia2010:36)

The present research focuses on the interrelation of professional genres and professional practices and its manifestation, excluding professional culture since the present research is of applied descriptive rather than critical nature.

To summarise, intertextuality was introduced from critical literary theory to linguistics in the 1980s and advanced extensive research in various branches to show the relations between texts (Text Linguistics and Systemic Functional Linguistics) and genres (ESP, New Rhetoric Studies) and provided means to explain genre modification and transformation (ESP, New Rhetoric Studies, Critical Discourse Analysis), evolving into interdiscursivity. The author of the present research considered both syntagmatic and paradigmatic intertextual relations, the latter being primary since they are more difficult to uncover and must be related to professional discursive processes.

3.3.3 Genre analysis in the local linguistic context: from integrity to cohesion. Discourse as rhetorical regularities.

According to Bhatia (1999, 2001) and Hyland (2002:116) generic integrity is the manifestation of explicit linguistic means, e.g. discursive patterns and lexico-grammar pertinent to genre, applied on a regular basis, produced and consumed by discourse community and forming recognisable genre structural identity.

Subject to colonisation (the process when genres possess similar communicative aims, e.g. promotional or reporting genres), the integrity may be invaded and may result in hybridisation (mixing and embedding) and recontextualisation (the process of locating genre in a different situational context manifested in information transfer fully or partially from one genre to another resulting in different rhetorical structure and recurrent lexico-grammatical means). (Bhatia 2004:58) According to Bhatia (ibid), colonisation makes it feasible to generalise and identify super-genres (ibid.) or macro-genres (van Dijk, 1994; Martin 2000), genres and sub-genres, the communicative purpose being central, which inextricably suggests hierarchical genre description.

Bhatia (2001: 81) noted that communicative purposes can be “specified at various levels based on an increasingly delicate degree of specificity, which makes it possible for genres to be

identified either narrowly or more broadly, depending upon the objectives of the investigation", which explains the nature of moves and steps rhetorical analysis.

Investigating the rhetorical organisation further, Bhatia posited (2004:59) that the communicative purpose "can be characterized at various levels of generalisation, and at the same time realized in terms of a combination of rhetorical acts." To describe the versatility of promotional genre colony, he (ibid) proposes the following framework for analysis:

Identification criteria	**Genre specification**	**Genre level**
rhetorical act	description/ evaluation	genre values
communicative purpose (general)	promotional genres	Colony
communicative purpose (specific)	book blurbs, advertisements, job applications	Genres
Medium	TV ads, radio ads, print ads	sub-genres
Product	car ads, airline ads, cosmetic ads	sub-genres
Participants	For holiday travelers/ for business travelers	sub-genres

Table 5. Versatility in generic description (ibid).

According to the scholar (ibid: 60), generic values include arguments, narratives, descriptions, explanations and instructions (c.f. 'primary speech genres ' (Bakhtin 1986) or 'basic forms' (Werlich 1982)) and are easily combinable in genre colonies.

A different degree of generalisation of communicative purposes is reflected in the hierarchical structuring, e.g. genre colonies form networks of genres with similar general communicative purposes, genres develop it and sub-genres reflect a particular aspect of it (e.g. medium, target audience, theme).

Exploring the regularities of discourse organisation, Bhatia distinguished three salient stages, namely, "the first with focus on patterns of organisation of information, specifically targeting specialized areas of discourse, the second with focus on general discourse organization patterns without any reference to functional variation, and the third with focus on discourse patterns across academic and professional genres." (2004:9)

The attempts to link regularities of structural elements of discourse organisation to rhetorical processes resulted in the emergence of a variety of terms, depending on the focus of investigation and the empirical data, e.g. **rhetorical structures** (Widdowson 1973), **types of text**

structure in the rhetorical organisation of expositions, i.e. time order, collections of descriptions, comparisons, and cause and effect (Meyer 1975), **rhetorical patterning,** i.e. problem-solution, general-particular, matching contrast, and hypothetical-real (Hoey 1983), the problem-solution and the topic-restriction-illustration **text types** (Crombie 1985), **rhetorical organisation patterns,** i.e. description, instruction, definition, classification, and visual-verbal relationships as well as **orders and patterns** (Trimble 1985), **text types** (Biber1988, Paltridge 1996), **text type categories**, i.e. static descriptions, process descriptions, narratives, cause and effect, discussions, compare and contrast, classifications, definitions, and reviews Hedge (1988), **schematic structures** (van Dijk 1988, Martin and Rose 2007).

The Systemic Functional linguists contributed immensely to the investigation of the rhetorical structure in relation to meaning. Following Hallidayan theory, Martin (2000, 2007) proposed to associate and align rhetorical organisation patterns with metafunctions as well, the basic distinctions being between particulate (ideational), prosodic (interpersonal) and periodic (textual) structure within the genre, which are schematically shown below. (ibid)

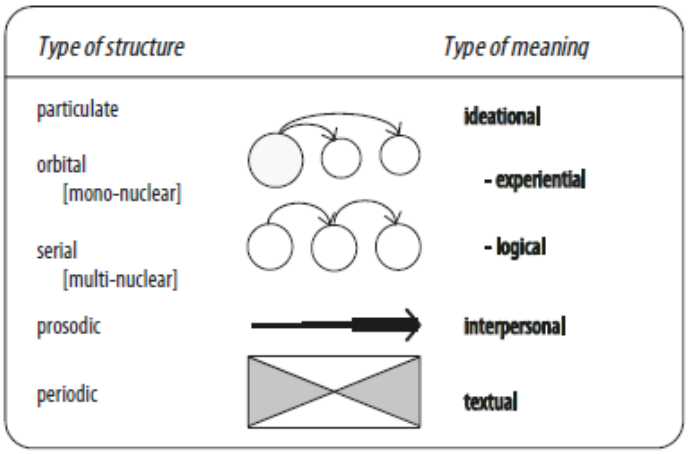


Figure 9. Kinds of meaning in relation to kinds of structure (Martin and Rose 2007: 24).

Particulate structure corresponds to ideational meaning. It organises a text segmentally into orbital or serial patterns, which is a modification of thematic progression, i.e. **orbital** has one theme and several rhemes, or constant theme progression (Halliday, 1976, 1994), whereas **serial** ideally has one theme and one rheme and progresses linearly.(ibid)

According to Martin (Christie and Martin eds. 1997), '**prosodic** structure is supra-segmental; it spreads itself across a text , more and less intensely, as required. **Periodic** structure is wave-like; it organises text into a rhythm of peaks and troughs, as the demands of information

flow prescribe'. (Martin 1997: 17) The author of the present thesis investigated the manifestation of the ideational language metafunction and traced serial and orbital information ordering. The textual metafunction is investigated applying the framework of cohesion and will be elaborated upon in the subsequent chapters. The interpersonal language function and its linguistic manifestation is not considered due to the transactional nature of IT discourse.

Further research (Martin and Rose 2007, 2012) was at large driven by investigating genre in school curriculum to enhance genre theory for language acquisition purposes. They (Martin and Rose 2007, 2012) implemented an approach similar to Swales (1990) and proposed a stages and phases framework for genre analysis in teaching writing and reading to learn at a primary, secondary and tertiary levels. According to the scholars,

> phases can be defined broadly as waves of information carrying pulses of field and tenor. Phases are intermediate in scale between stages that are defined from the perspective of genre, as highly predictable segments in each genre, and messages that are defined from the perspective of grammar, as non-dependent non-projected clauses, together with their associated dependent and projected clauses. Each generic stage consists of one or more phases, and each phase consists of one or more messages. These layers of structure comprise a rank scale in the discourse semantic stratum. (Martin and Rose, 2007:2)

The relations between the elements are realisational, rather than compositional. (ibid) Martin related the communicative aims with texture, claiming that "genre is concerned with systems of social processes, where the principles for relating social processes are to do with texture- the ways in which field, mode and tenor variables are phased together in a text" (Martin, 2000:12).

The ESP scholars viewed genre as a social construct and focused their investigations of recurrent rhetorical structures in relation to communicative purposes. According to Bhatia (2004), "they interpreted such structures not simply in terms of schematic patterns of individual readers , but more narrowly in terms of the socio-cognitive patterns that most members of a professional community use to construct and interpret discourses specific to their professional cultures. Quite appropriately, these regularities were seen in terms of moves", rather than schematic structures. (Bhatia 2004: 9)

In his research, Swales (1990, 2004) was influenced by content schemata (background knowledge patterns) or scripts (Schank and Abelson, 1977) and scenarios (Sanford and Garrod, 1981) and formal schemata (Carrell, 1981, 1987), i.e. prior text patterns, the interaction of which results in successful genre production and consumption. (cited in Bruce 2008:31)

Based on the empirical analysis of the introductions of research articles, Swales proposed a four-move framework, which was later revisited and generalised (Swales, 1990:141) and comprised the following moves:

- Establishing a territory;
- Establishing a niche;
- Occupying the niche.

The move corresponds to a single communicative event with a certain communicative purpose and steps refer to structural objectives to achieve it within one sub-genre or genre.

Though criticised for the obscurity of the concept of communicative purpose, unobvious relations between the communicative purpose and lexico-grammatical means and moves being staging of content rather than rhetorical structures (Biber, 1989; Paltridge 1997), the framework has been extensively used by ESP scholars to conduct genre analysis in professional, educational and academic settings, e.g. research articles (Swales, 1990, 2004), genres of legalese and promotional discourse (Bhatia 1993, 2004, 2010).

Bhatia (1993: 43) posited that "of all of the contextualized factors associated with a conventionalized speech event, communicative purpose is the most privileged criterion for the identification of genres". On the other hand, Biber (1989) claimed that genre identification should be conducted considering "systematic non-linguistic criteria, and they are valid in those terms." (1989:39) He (ibid) also proposed to distinguish a genre from a text type, where genre refers to external characteristics of a text as opposed to text type which reflects its internal patterns found in different genres (Biber, 1989 cited in Paltridge, 2001) with the current tendency of moving away from simple constituency representations of genre staging. (i.e. by Swales).

Paltridge (1996) shared Biber's view on discerning between text types and genres, yet merged both frameworks for the analysis of a complaint letter and illustrated schematically generic and textual structures, which did not coincide.

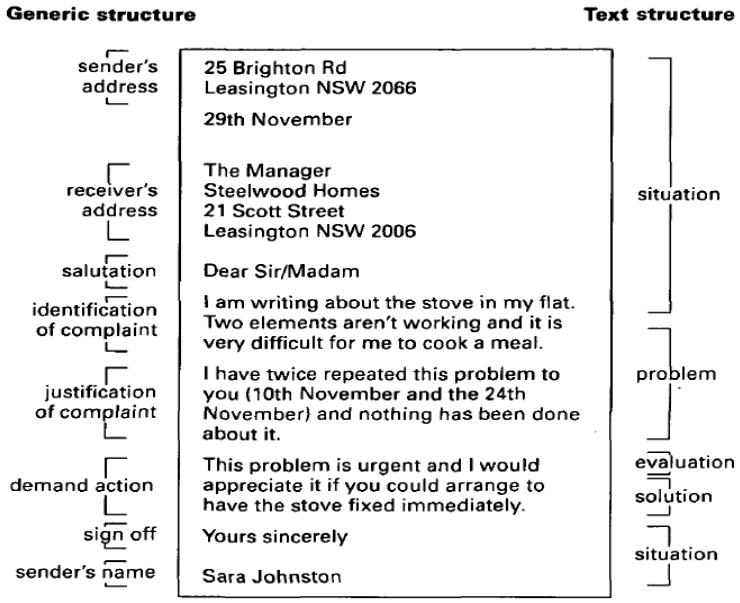


Figure 10. Generic and textual structure analysis (Paltridge 1996:240)

Paltridge (ibid) posited that the frameworks which conflate the notions of genre and text type do not reflect genre peculiarities fully and may conceal some phenomena, therefore should be complimentary. However, the analysis proved that different genres may possess similar text types and demonstrated 'how the rhetorical patterns associated with one particular text type may be usefully drawn on for the production of significantly different genres'. (ibid:241)

The scholars of the New Rhetoric Genre School (Bawarshi and Reiff 2010; Bawarshi et al, 2003; Bazerman et al, 2009; Miller, 1984; Berkenkotter and Huckin 1995) considered genre as a social action and a mediation tool between situations and rhetorical responses. Hence, the regularities of genre were viewed inextricably in relation to social processes. Genre analysis in this tradition is initiated by collecting genre samples (Bawarshi et al, 2003; Bawarshi and Reiff, 2010). Following this, genre scene is identified and the situation is described, the constituent contextual parts being setting, subject, participants and purposes (c.f. Bhatia's and van Dijk's contextual models). Afterwards, recurrent generic patterns are identified and the scholars propose to ask the following questions:

> What recurrent features do the samples share? For example: What content is typically included? What excluded? How is the content treated? What sorts of examples are used? What counts as evidence (personal testimony, facts, etc.)? What rhetorical appeals are used? What appeals to logos, pathos, and ethos appear? How are texts in the genres structured? What are their parts, and how are they organized? In what format are texts of this genre presented? What layout or appearance is common? How long is a typical text in this genre? What types of sentences do texts

in the genre typically use? How long are they? Are they simple or complex, passive or active? Are the sentences varied? Do they share a certain style? What diction (types of words) is most common? Is a type of jargon used? Is slang used? How would you describe the writer's voice? (Bawarshi and Reiff 2010:194)

Upon completion, genre scene and situation are revisited in the attempt to relate the regularities with the social action. The process has language implications and is aimed at raising genre awareness among professionals at a work place, apprentices and students who study language across the curriculum. The students are exposed to rhetorical structures identification, evaluation and relation to social actions with the primary aim not to master a particular genre, but to develop transferable genre-learning skills. (ibid)

To summarise, all three genre schools investigate organisational discourse regularities as a part of genre analysis to arrive at a framework that would facilitate genre production and genre consumption. The supporters of the SFL relate rhetorical structures with language metafunctions, claiming that their aims are to realise ideational, interpersonal and textual meanings, rather than to pursue composition.

The ESP scholars build their research around the communicative aim, which is crucial for genre identification. Their framework was criticised for the lack of relation of the lexico-grammatical means and the aims themselves and the fact that moves and steps represent topical, rather than rhetorical staging. Despite criticism, the framework of moves and steps has been widely applicable for the analysis of organisational discourse. Trimble (1985) attempted to combine the concepts of communicative aims and recurrent rhetorical organisation, however, the primary focus being on genre rhetorical organisation and textualisation processes.

The focus of investigation of the New Rhetorics Studies scholars is the relation of the rhetorical structures with the social action, and the ability to transfer the knowledge of meta-genre to various (including new) social situations. The tenets of all three genres were applicable in the empirical part and a holistic model for genre analysis was built.

3.3.4 Textualisation of genre: discourse beyond sentence level. Construing the textual meaning.

At this stage, genre is investigated in terms of recurrent lexico-grammatical features, which contribute to communicative purposes or the functional discourse value. The approach became popular in the 1960s and the 1970 with the development of register analysis and the first attempts to contextualise and "conceptualise text through semantics and pragmatics by van Dijk

(1977, 1985), Beaugrande and Dressler (1981), Brown and Yule (1983) and other scholars who focused on 'developing a relationship between the choice of lexico-grammar and specific forms of discourse organisation that can be viewed as an extension of linguistic description." (Bhatia, 2004: 5)

According to Bhatia (ibid), it is considered to be a significant shift in text linguistics turning from descriptive perspective of language *per se* to specific instances of language use, focusing on cohesion and coherence (Halliday and Hasan, 1976), macro-structures and information structures of discourse (van Dijk, 1985) and standards of textuality (Beaugrande and Dressler, 1981).

Text linguistics is referred to as "the formal account of the linguistic principles governing the structure of texts". (Crystal 1997) However, van Dijk (1979) highlighted that text linguistics cannot be a designation for a single theory or method. Instead, it is rather a contribution of any work in language science devoted to the text as a primary object of inquiry. It can be observed that the text has been investigated under the scrutiny of various branches of humanities and social sciences (e.g. rhetorics, stylistics, anthropology, tagmemics, ethnomethodology, discourse analysis a.o.). However, since the primary focus of our study is discourse analysis of IT organisational documentation, we would select the theoretical framework for textual analysis accounting for it. Unveiling the relations between text linguistics and discourse analysis, R. Beaugrande (1997) admitted that text linguistics is more allied with formalism, whereas discourse analysis with functionalism. However, he claimed that these two approaches gradually converged within text linguistics shifting the focus from the text to be a formal unit to primarily a functional unit. (ibid)

As it was stated in Chapter 2, the study of discourse as sentences in combination and the early accounts for textual analysis beyond the sentence first appeared in the work of Harris (1952).

A number of other authors have attempted to provide a formal account "of how speakers of English come to identify a text as forming a text" (Brown and Yule 1983: 190) (e.g. van Dijk, 1972; Gutwinski, 1976; Halliday and Hasan, 1976; Beaugrande and Dressler, 1981); however, a shift to functional perspective in later works is obvious (c.f. van Dijk 1997, 2004, 2004a, Halliday, 1997, Halliday and Mathiessen, 2004, Eggins, 2004).

The attempts to conceptualise and contextualise text analysis were observed in the works of van Dijk (1985), Beaugrande and Dressler (1981), Brown and Yule (1983) and others who investigated a relationship of lexico-grammar and discourse organization, e.g. the study of

cohesion and coherence (Halliday and Hassan 1976), macro-structures (van Dijk) and information structures of discourse. It was a turning point in text linguistics since the focus was changed from the generalised descriptions to the instances of language use in specific professional discourse.

Some of the early analysis of lexico-grammar in specialised texts used in language teaching and learning gave an incentive to investigations of functional values that features of lexico-grammar in specialized texts represent, though often within clause boundaries without much reference to discourse organisation. Functional characterisation of lexico-grammar or textualisation in terms of discoursal values within the rhetoric of scientific discourse was investigated in Selinker, Lackstrom and Trimble (1973). During this phase there was a clear emphasis on the characterisation of functional values that features of lexico-grammar take in written discourse. (Bhatia 2004:5)

3.3.4.1 Trimble's (1985) framework for the analysis of textualisation

Trimble's (1985) research of technical texts combined cohesion, rhetorical patterning and communicative aims in one framework for discourse analysis. In his investigation he did not account for tenor (participants), rather he focused on information organisation and transfer, unveiling the peculiarities of technical domain. Communicative aims are analysed at a paragraph level. Genre is not yet overtly in focus in this framework, therefore, the author of the thesis considered his views only at a textualisation level.

Trimble (ibid) stated that "'we use the term rhetoric to refer to one important part of the broad communicative mode called discourse. Rhetoric is the process a writer uses to produce a specific set of purposes and a specific set of readers." (L. Trimble, 1985:5)

His top-down framework (ibid) enables one to analyse the overall communicative aims of discourse units, the general rhetorical functions that serve to achieve these aims, the specific rhetorical functions to develop the general ones and the rhetorical techniques accounting for coherence, texture and cohesion. Trimble suggested dividing the discourse unit into four rhetorical levels.

Level A provides the aim of the 'total discourse' (L. Trimble 1985:10). The next level of rhetorical organization **(level B)** consists of "those major pieces of the text which, when added together, make up the complete discourse… and develop the objectives of level A" (ibid) (c.f. Swales's moves and steps theory, 1990). **Level C** is made up of the specific rhetorical functions that are found most commonly in written English for Science and Technology discourse:

description, definition, classification, instructions and visual-verbal relationships... **Level D** consists of one or more of the rhetorical techniques a writer chooses (or is sometimes required to use) as the most functional for presenting the framework into which the items of information given at level C fit or the most functional for showing the relationships between these items, i.e. **orders** (time, space, causality and result orders) and **patterns** (causality and result, order of importance, comparison and contrast, analogy, examplification and illustration) (Trimble 1985: 10-12)

As it can be seen from the framework above, it is concerned with attempts to describe language use in its contextualized character with discourse at a 'micro-level', within the local linguistic context. Only the aim at Level A indicates to the intentionality and wider linguistic context. Conducting discourse analysis as language use, applying this framework is not driven by the questions how we can characterise technical discourse in such a way as to distinguish it from other types of discourse, rather by how the formal resources of the language system are used in the performance of different communicative events and how they contribute to forming texture.

3.3.4.2 Beaugrande and Dressler's standards of textuality

Beaugrande and Dressler (1981) proposed their framework to explore textuality and postulated that the text is a communicative event, which should meet the following criteria: cohesion, coherence, intentionality, informativity, situationality, acceptability and intertextuality, referring to the first two criteria (cohesion and coherence) as text-internal, whereas the remaining ones as text-external.

Intentionality reflects the attitude and the aims of the speaker or writer. Beaugrade and Dressler (1981) claim that intentionality as a user- centred category.

Informativity is a standard of textuality accountable for the "extent to which the occurrences of the presented text are expected vs. unexpected or known vs. unknown/certain." (ibid.)

The investigation of information structure in terms of the notions "given and new" was facilitated by Prague School after the Second World War. Brown and Yule (1983:53) mentioned that the scholars of the Prague Linguistic Circle studied 'what they called the çommunicative dynamism' of the elements contributing to a sentence within the framework of 'functional sentence perspective'.' (Brown and Yule 1983)

Situationality indicates that the situation in which the text is produced is crucial in the production and reception of the message. **Intertextuality** is regarded considering the conditions

that a text is always related to some preceding or simultaneous discourse and is linked and grouped in particular text varieties, genres or colonies by formal or functional criteria, which was extensively discussed above. (ibid)

Beaugrande and Dressler (1981) defined **acceptability** in terms of attitude that the set of means to constitute a coherent and cohesive text invokes relevance for the receiver. They claim that "his attitude is responsive to such factors as text type, social or cultural setting, and the desirability of goals" (ibid), which corresponds to the modern interpretation of genre. Hence, the abovementioned standards of textuality are viewed through the prism of genre theories in the empirical part.

Beaugrande and Dressler (1981:3) defined **cohesion** as "the ways in which the components of the surface text, i.e. the actual words we hear or see, are mutually connected within a sequence. The surface components depend upon each other according to grammatical forms and conventions, such that cohesion rests upon grammatical dependencies".

The definition by Halliday, whose framework in the field (Halliday and Hasan, 1976) has become canonical, does not differ much, i.e. cohesion can be defined as "the set of resources for constructing relations in discourse which transcend grammatical structure" (Halliday 1994: 309) and is the manifestation of the textual metafunction. He claims that the nature of the relation is semantic (1976: 8). However, other scholars (e.g. Jackson, 1990, Mathews, 2007) considered that element dependency is created by syntax.

The framework of cohesion by Halliday and Hasan (1976) comprises:

- reference
- ellipsis
- substitution
- conjunction
- lexical cohesion.

In addition to it, Gutwinski (1976: 57) included the category of grammatical parallelism. Expanding Halliday and Hasan's research (1976), the means of lexical cohesion have been further elaborated on, comprising repetition, synonymy, hyponymy, and clause complex components (Halliday 1994).

Martin (2001, in Shiffrin, et al.) defined reference as "resources for referring to a participant or circumstantial element whose identity is recoverable", comprising demonstratives, the definite article, pronouns, comparatives, and the phoric adverbs here, there, now. (2001: 36)

In compliance with the types of context discussed above, reference falls into three general types: **homophoric** reference, which concerns the information interpreted through the socio-cultural context (excluded from the present study), **exophoric** reference, which is shared through the context of situation, and **endophoric** reference (anaphoric, cataphoric, and esphoric) retrieved within the local linguistic context. (Halliday and Hasan, 1976)

Endophoric reference is further subdivided into **anaphora** in which the referent was mentioned earlier in the text, **cataphora** where the referent is yet to be announced (Cutting, 2002: 10) and **esphora** in which 'presuming' item precedes the referent and is situated in the same nominal group or noun phrase within the same clause (Halliday, 2004: 35). Moreover, Cutting distinguished one more type of endophora, i.e. **associative reference,** typical of noun phrases, when the relations are not expressed explicitly. (Cutting, 2002: 10)

According to Halliday and Hasan (1976), reference is also divided into **personal**, **demonstrative** and **comparative**, depending on the means of linguistic manifestation (1976: 38-39). **Personal reference** is represented in the text through the use of personal pronouns or possessive pronouns. **Demonstrative reference** denotes the location of object from the point of view of its 'proximity' and is observed in the use of demonstrative pronouns and adverbs (ibid.: 37-38).

Comparative reference illustrates 'similarity' or 'identity' using adjectives or adverbs (ibid.: 39). Eggins highlighted that the comparative reference is used when the presuming element is "retrieved' from the item to which it was compared and could function as anaphora, cataphora or esphora."(2004: 35)

Substitution and **ellipsis** are used when "a speaker or writer wishes to avoid the repetition of a lexical item and is able to draw on one of the grammatical resources of the language to replace the item." (Bloor and Bloor, 1995: 96). Halliday and Hasan (1976:88) distinguished between reference and substitution stating that "substitution is a relation in wording rather than in the meaning." (Halliday and Hasan, 1976: 88) Both substitution and ellipsis ('substitution by zero' (ibid.) fall into three categories: nominal, verbal and clausal (ibid.). Nominal substitution implements pronouns one, ones and same (ibid). Verbal substitution utilises the corresponding auxiliary as the replacement for the previously mentioned verb (Hasan and Halliday, 1976: 130). Finally, in case of the clausal substitution, the whole clause is omitted, with substituents so and not applied instead (ibid.: 114). The nature of relations is grammatical since there exists a synchronisation of grammatical categories between the substituting item and the substituent.

Bloor and Bloor (1995: 98) defined the conjunction as a "cohesive tie between clauses or sections of text in such a way as to demonstrate a meaningful pattern between them", though Halliday and Hasan (1976: 227) indicated that "conjunctive relations are not tied to any particular sequence in the expression". The nature of the relation is semantic and conjunctions are classified into four categories: **additive, adversative, causal** and **temporal**. Additive conjunctions bind the text by adding or negating to the presupposed item **Adversative conjunctions** are applied to indicate "contrary to expectation" (ibid: 250). **Causal conjunctions** express "result, reason and purpose" **Temporal conjunctions** signpost sequence or time. (ibid).

Lexical cohesion is identified as the "cohesive effect achieved by the selection of vocabulary" (ibid: 274), but is excluded from the scope of the present research.

To show the link between cohesion and coherence, Martin (2001:35-36) describes cohesion "as one aspect of the study of texture, which can be defined as the process whereby meaning is channeled into a digestible current of discourse." Texture, in its turn, is considered as one aspect of the study of coherence. (ibid.)

3.3.5 Textualisation of genre: discourse at sentence level. Construing the ideational meaning.

Investigating the formation of the ideational meaning within a sentence/clause, Halliday's transitivity theory is implemented. The author of the present thesis selected this theory since the verb is central to convey the ideational meaning in IT organizational discourse.

Halliday and Mathiessen (2004) claimed that experience is represented as a flow of events. According to them, this flow of events is chunked into quanta of change by the grammar of the clause: each quantum of change is modelled as a figure — a figure of happening, doing, sensing, saying, being or having (2004:170). All figures consist of a process unfolding through time and of participants being directly involved in this process in some way; and in addition there may be circumstances of time, space, cause, manner or one of a few other types. The transitivity framework construes the world of experience into a manageable set of process types.

According to Halliday and Mathiessen (2004), **material processes** reflect the action which "construes a quantum of change in the flow of events as taking place through some input of energy" and is limited in time, in other words that action which is done or happens in the material world. (Halliday 2004: 179) Within IT discourse, material processes define the actions undertaken to describe, create an application or follow a process. They also illustrate the effect of some operation which happens as a result of a system activity or some manipulations.

Relational processes describe, identify and outline the features of a system in this genre.

Mental processes represent the way a "senser" experiences the world as a thought, a perceprion or an emotion. (ibid) The perception of a user regarding some operations (e.g. on the screen) are mostly reflected in this genre.

Existential processes point at the occurrence of a phenomenon and mostly formed with the help of 'existential' there.

To summarise the chapter, presently there are three schools accounting for genre analysis from the point of view of linguistics, i.e. SFL, ESP, and New Rhetoric Studies. The joint definition of genre considers it as a social event with clearly distinct communicative purposes, rhetorical structure and lexico-grammatical means accounting for generic integrity, recognised by the members of discourse communities. Although conventionalism is a key principle in this definition, genre dynamisms, hybridity, embedding and recontextualisation should not be disregarded, which is dictated by dynamism and complexity of communicative practices and activity systems of professional communities. Genre should be distinguished from a text type by recognizing its text external features. Conducting genre analysis, linguists usually consider a number of perspectives in an integrated manner, e.g. socio-cultural, cognitive, critical, ethnographical, textual a.o.

Considering the development of genre in a professional setting (ESP, SFL and New Rhetoric School), it is investigated as an artifact of social practice, functional and cognitive construct, possessing pertinent textualisation. The present study approaches the concept of genre analysis as an integral part of discourse analysis since Bhatia (1993, 2004) and Cook (1992) claim that discourse analysis as language use covers genre analysis, highlighting its applied nature and "multifaceted, multidimensional and ethnographically grounded thicker descriptions of genres" (Bhatia 2001: 79, ed. M. Hewings) addressing the problems of genre hierarchy (Swales 1990, 2004; Bhatia 1993, 2004) and genre systems (Spinuzzi,2000, 2004; Orlikowski and Yates,1994; Berkenkotter, 1995), genre cognitive and rhetorical structures (Swales 1990, 2004; Martin 2000, Trimble 1985), and textualisation, i.e. coherence, cohesion and verbal processes. (Halliday and Hasan 1976; Beaugrande and Dressler 1981; Trimble 1985; Halliday and Mathiessen, 2004)

THEORETICAL CONCLUSIONS

The theoretical data synthesis has enabled the author to devise a framework for the discourse and genre analysis of the professional documentation in English in order to identify the linguistic peculiarities underlying the professional communication in English for IT, the overarching pre-conditions being the purposeful functional use of language and contextualisation. There are three types of linguistic concepts which are of paramount significance creating or processing technical documentation in IT, namely contextualization, discourse organization and textualisation, which are schematically shown in Table 5 below

Ideational, textual and interpersonal language metafunctions		
Types of context, situational context modeling		
Contextualisation of discourse	**Organisation of discourse**	**Textualisation of discourse**
Genre as a social action	Genre as a rhetorical event	Genre as text

Table 5. The general theoretical framework of the research

The theoretical framework to unveil the generic and discourse aspects comprises:

1. the investigation of the language metafunctions to identify the dominating ones of IT professional communication;
2. the exploration of the types of context to conduct a multi-level discourse and genre analysis;
3. situational context modeling to ensure the contextualization of discourse, considering macro and micro- contextual categories;
4. the research of intertextuality and interdiscursivity leading to genre organisation into systems; genre constellations: genre hierarchies, chains; genre colonies to identify and interpret the relations between genres in the network.
5. genre move and steps analysis and the identification of rhetorical patterns to account for the organization of discourse.
6. the investigation of the textualisation of lexico-grammar applying the frameworks of rhetorical techniques, cohesion and transitivity.

The table below illustrates the correlation of linguistic theories to fundamental principles of genre analysis by Bhatia (1993, 2004), which has enabled the author to conduct the empirical part of the present research.

<table>
<tr><th colspan="3">DISCOURSE ANALYSIS</th><th></th></tr>
<tr><td rowspan="2">Contextualisation of Genre</td><td>Situational context modeling: Fairclough (1992, 1995, 1995a); Munby (1978); van Dijk (2004) Bhatia (1993, 2004), Conrad (2001), Gray (2011);</td><td>Socio-cultural context

Situational context</td><td rowspan="2">Construing ideational and interpersonal meanings</td></tr>
<tr><td>Genre networks: Miller (1984), Berkenkotter and Huckin (1995), Spinuzzi (2004), Spinuzzi and Zachry (2000), Orlikowski and Yates (1994), Bazerman et al (2009), Bawarshi and Reiff (2010), Swales (2004); Bhatia (2004);

Intertextuality and interdiscursivity Kristeva (1980), Fairclough (1992); Spinuzzi and Zachry (2000), Orlikovski and Yates (1994);</td><td>Situational context

Wider linguistic context</td></tr>
<tr><td>Organisation of Genre</td><td>Moves and steps analysis (Swales 1990);

Rhetorical patterns analysis and text types (Paltridge, 1997; Martin, 2000; Trimble, 1985);</td><td>Wider linguistic context

Local linguistic context</td><td>Construing ideational and textual meanings</td></tr>
<tr><td>Textualisation of Genre</td><td>Trimble’s framework of rhetorical functions and techniques(1985)

Halliday and Hasan’s framework of cohesion(1976)

Halliday’s transitivity theory (2004).</td><td>Local linguistic context</td><td>Construing textual meaning</td></tr>
</table>

Table 6.The applicability of linguistic theories for a multi-perspective discourse and genre analysis.

CHAPTER 4. RESEARCH METHODOLOGY, DESIGN, DATA COLLECTION AND ANALYSIS

4.1 Research methodology and design

The paper has been envisaged as **qualitative cross-sectional research** with quantitative research elements at data representation level, i.e. the use of *Oxford Wordsmith Tools 6.0* Software to conduct the frequency analysis of linguistic units (*Wordlist*) and identify the local linguistic context (*Concordance*).

The essence of research questions allows us to select in favour of **cross-sectional study** since we are interested to determine the existing genres in IT domain, identify their recurrent linguistic features. However, further scientific work may follow the longitudinal perspective, focusing on generic integrity and genre dynamism.

In choosing between qualitative and quantitative research paradigms, the author was driven by Holmes and Marra's (2002) opinion about undertaking research in a professional setting who claim that "while discourse studies are often seen as 'by nature' qualitative, being largely based on naturally occurring 'real-life' data, recent work has shown how quantitative and qualitative paradigms can be combined for a better understanding of the interactants' norms and practices in discourse." (cited in L. Litosseliti 2010: 36)

Tashakkori and Creswell (2007) illustrate that the integration of qualitative and quantitative paradigms may occur in one of the following ways:

– two types of research questions (with qualitative and quantitative approaches)

–the manner in which the research questions are developed (participatory vs. pre-planned)

– two types of sampling procedures (e.g., probability and purposive)

– two types of data collection procedures (e.g., focus groups and surveys)

– two types of data (e.g., numerical and textual)

– two types of data analysis (statistical and thematic), and

–two types of conclusions (emic and etic representations, 'objective' and 'subjective', etc.). (2007: 4)

In the present study, the integration of qualitative and quantitative paradigms was realised when formulating the research questions and this resulted in varied types of data.

One more opinion in favour of the integrated research framework is the one by Bargiela-Chiappini et al. who claims that "one of the defining features of business

discourse research is that it has not relied on any one approach or methodology." (2007: 15). She claimed (2007) that discourse analysis in the professional setting is usually determined by ESP and critical DA and usually unfolds in the form of textual and rhetorical analysis for the former and genre analysis for the latter adopting different data collection and analysis techniques, i.e. quantitative and qualitative respectively. If collected and analysed separately, the data does not infer consistent conclusions.

Bargiela-Chiappini and Nickerson (2002: 276) held even a more radical view, claiming that "any static skills-based approach, or indeed any quantitative method, cannot by itself 'meet the needs of business communication". Some scholars (Bargiela-Chiappini and Harris, 1997; Holmes and Stubbe, 2003) asserted that both quantitative and qualitative research relying only on indirect sources (e.g. interviews, observations and questionnaires) and excluding the analysis of naturally occurring language can be criticised for failing to reflect the dynamism of communication.

The abovementioned views have determined the qualitative paradigm as dominating, with the quantitative one expressed only through research questions and data representation.

Dörnyei (2007:19) discriminated between quantitative, qualitative and language data, i.e. **quantitative** "is most commonly expressed in numbers", **qualitative "**usually involves recorded spoken data that is transcribed to textual form as well as written (field) notes and documents of various sorts," and **language data** which "involves language samples of various length, elicited from the respondents primarily for the purpose of language analysis, which is often subsumed under qualitative data in the literature". In this respect, the present research has three types of data, with qualitative and language data dominating, hence data collection procedures primarily result in open-ended, non-numerical data which is then analysed by non-statistical methods.

Describing a research tradition, Dörnyei (ibid) distinguished between a purist, a situationalist and a pragmatist researcher. Considering the applied nature of the study and possible language acquisition implications for the tertiary level curriculum and IT staff professional development training on-site, the author has chosen the last approach since, according to Rossman and Wilson (1985), it allows one to "corroborate (provide convergence in findings), elaborate (provide richness in detail), or initiate (offer new interpretations) findings from the other methods."(1985:627)

Hence, it determines **the theoretical framework**, which is of comparative and holistic nature. It comprises the analysis of secondary sources on the selected linguistic and applied linguistic theories that approach language use from a discourse analytical and systemic-functional perspectives.

The study has been at large facilitated by the theoretical frameworks of

1 the London School of Functional Linguistics enabling the author to analyse the language use both in its situational and linguistic context;
2 the School of Systemic Functional Linguistics accounting for the correlation of form and meaning, functional language use uncovering ideational and textual meaning construction in professional discourse;
3 the discourse analysis unveiling the principles of language use beyond the sentence level, rhetorically staged and as a social practice;
4 the ESP enabling the author to conduct genre analysis of IT professional documentation, identify genre systems, repertoires, ecologies,colonies and describe genre intertextual network;
5 the New Rhetoric Studies highlighting phenomena required for discourse production and consumption as a social practice, encompassing the wider social context in which the communicative event occurs and the concept of interdiscursivity.

The empirical investigation is a descriptive case study with exploratory and explanatory elements. Basing this investigation around R. K. Yin's view on case study (1984:23), its distinct features are a contemporary phenomenon of language use, as the object of the present research, embedded in the professional context with multiple sources of evidence. It is defined as emergent since initially the interpretive analysis of language data was of primary importance, but in the course of research the need to explore the social context arose. Since the research considers the practical application of the obtained results, the explanatory and interpretive factors are crucial. The data is both indirect (interviews and questionnaires) and naturally occurring, i.e. discourse analysis of technical documentation produced and consumed in a professional setting compiled in an annotated corpus. Stake (I995: xi) suggested that the case study explores the "particularity and complexity of a single case", therefore several research tools have been selected. According to Dörnyei (2007), the case study is organised around people and is usually multi-levelled, in our case, we conduct the research of language use in IT domain *per se*, at international and national level (Latvia, Russia,

Estonia, Belarus), institutional (company) level, and last but not least, the level of an individual; hence, the discourse community is crucial for this investigation.

Following Stake's taxonomy (1995, 2005), we undertake the **'multiple or collective instrumental** case study' since a joint data of language use pertaining to several companies operating in different countries has been collected as well as language use facilitates context study, thus assuring instrumental value.

Dörnyei (2007) emphasised the ultimate significance of sampling in case studies. She asserted (ibid) that a sampling plan describing the sampling parameters (participants, settings, events, processes) should be written and aligned with the overall aim, objectives and research questions.

Our research features the following **purposive, typical, criterion-based** sampling parameters:

Participants are technical specialists or managers employed by IT companies, involved in IT product design and service provision, excluding sales, in Latvia and abroad with at least one year working expertise in the field. One of the responsibilities should encompass technical documentation production, consumption or both. They are non-native English language users with language proficiency of B2 and above representing all levels of professional expertise (trainee, junior, common, lead and/or senior specialists) and at least low and middle level management aiming at **maximum variation**.

The sample of the present research may be characterised as **homogeneous**, in terms of the professional domain, yet **heterogeneous** in terms of the level of expertise and the nature of positions (technical, managerial or both).

Iterative chain sampling was implemented since the initial spread of questionnaires and conducting interviews (87 participants) resulted in obtaining additional 49 contacts. Therefore, the author decided to run the procedure in an iterative way to ensure the saturation of the sample.

Dörnyei (ibid) expressed an opinion in favour of the selected procedure claiming that

> the participant selection process should remain open in a qualitative study as long as possible so that after initial accounts are gathered and analysed, additional participants can be added who can fill gaps in the initial description or can expand or even challenge it. This cyclical process of moving back and forth between data collection and analysis is often referred to as 'iteration'. (2007:126-127)

Extreme, deviant and critical case sampling parameters were not considered.

According to the typology of mixed method designs suggested by Bryman (2006), (cited in L. Litosseliti 2010:34) **triangulation** stands for the convergence of findings and corroboration of research results and is "a central methodological concept comes high on the list of key features of good research designs".

Implementing Denzin's (1970: 472) taxonomy, the present study implements data **triangulation**, i.e. "the application of more than one sampling method for data collection", **theoretical triangulation**, i.e.the use of more than one theoretical stance and **methodological triangulation**, i.e. "the use of more than one methodology" (ibid).

The overarching aim of triangulation is to reflect the reliability and validity of the study. Silverman (2005) considers that **reliability** refers to the "degree of consistency with which instances are assigned to the same category by different observers or by the same observer on different occasions". (2005: 224) Morse and Richards (2002: 168) state that reliability requires that the same results would be obtained if-the study were replicated. Within the framework of this study, in addition to triangulation, reliability is ensured by careful elaboration on the research design and the author's prolonged engagement in the domain, i.e. twelve years experience working in ESP *per se* and with the students at the tertiary level, acquiring the first level of higher professional education in IT in particular as well as seven years work experience training IT professionals of various positions in English language proficiency for professional purposes on-site.

Following Maxwell's (1992) proposed taxonomy of validity in qualitative research, the present study complies with the requirements of **descriptive validity**, in terms of undertaking multi-level discourse and genre analysis to ensure the factual accuracy of data. **Interpretive validity,** which is highly dependent on the abovementioned type, is addressed by means of participant involvement in interpreting results and providing feedback discussing the communicative events and the communicative purposes of technical documentation. **Theoretical validity** to some extent corresponds to the internal validity and concerns "the appropriate level of theoretical abstraction and how well this theory explains or describes the phenomenon in question." (Dörnyei, 2007:58) The cause and effect nature of the investigated problem will ensure **internal validity** and will allow the author to build a consecutive chain of multiple evidence. The research tools for data collection account for **construct validity** which is achieved by applying the correct measures for the research and mitigate idiosyncratic risk. According to leading ESP linguists, such as Dudley- Evans and St Jonh (1998), Strevens (1977), Munby (1978),

Hutchinson and Waters (1987), English for Specific Purposes, of which English for IT is an integral part, is distinguished by the awareness of the need and needs analysis. Therefore, the data collection for this research is based on the needs analysis which involves the design and administration of questionnaires and semi-structured interviews on site, the discourse and genre analysis of relevant documentation identified in the preceding stage. Another category of Maxwell's (1992) framework is **generalizability**, i.e. "the account to persons, times or settings other than those directly studied, [when] **'internal generalizability'** concerns generalizing within the community or institution observed, whereas **'external generalizability'** refers to generalizing to other communities or institutions." (cited in Dörnyei 2007:58)

According to Maxwell (1992) (cited in Dörnyei 2007:58), **evaluative validity** accounts for the researcher's ability to evaluate the phenomenon studied (for instance, in terms of practical application and desirability) and accurately assign value judgments to the phenomenon. In the present research it is achieved by means of the etic perspective throughout the research whereas the emic perspective was required for corpus compilation in order to ensure linguistic data sharing. The management of IT companies is not gladly willing to share the internal documentation of the company due to the presence of internal managerial procedures, know-how and a possibility of industrial espionage. Clearly, empathic relations are required to compile a relevant corpus, even for educational and research purposes. To comply with ethical norms and meet legal requirements, a non-disclosure agreement was signed between the author of the paper and the legal entities involved binding the author not to publish the corpus obtained, use it solely for educational and research purposes and either remove or substitute any sensitive information (e.g. company or product names, figures etc).

The following research design has been selected:

1. the choice of the participants for the sample, the situational analysis and context modelling to define the wider linguistic and local situational contexts;
2. the selection and the comparative analysis of linguistic and applied linguistic theories of the 20th and the 21st centuries to establish a theoretical framework for this research;
3. a case study comprising both deskwork and fieldwork activities, i.e. questionnaires, semi structured interviews, corpus compilation, annotation and mark-up;

4. discourse, genre analysis and frequency analysis to describe the wider and local linguistic contexts leading to the summary of the research results;
5. data interpretation and drawing relevant conclusions.

Describing the procedure, the research was initiated when the author, being a lecturer at Riga Technical College was encouraged to review the English language syllabusof the first level higher education study program in computer systems and computer networks administration and improve it in compliance with market needs, which is considered as a preliminary research activity and is not reflected in this study. The author analysed the types of syllabuses, teaching materials used at Riga Technical College, Riga Technical University, Latvian Agricultural Academy, the availability of up-to-date resources in English for IT and arrived at the conclusion that the development of discourse competence and genre awareness are not accounted for there to a sufficient extent, if at all. Teaching resources listed in the required literature did not consider the development of the abovementioned competences or the genre writing. Moreover, an HR department of a Latvian- based software development company requested the author to design an intensive in-house training course in English aimed at the development of their writing skills with the specific focus on rhetorical organisation and genre awareness.

The abovementioned activities led the author to formulating the theme and research questions. Since then, the theme has been shaped several times in order to narrow down the focus of the study. Following this, the sample of 100 participants was chosen in accordance with the criteria specified below. Alongside the theoretical study of linguistic and applied linguistic theories, questionnaires to identify genres pertinent to the IT professional domain as well as situational context were designed and administered. Eighty-seven questionnaires were returned, hence later during semi-structured interviews to specify the communicative aims of the recurrent genres, the communicative events surrounding them as well as genre intertextual relations were studied. Jorgensen and Phillips (cited in Dörnyei, 2007:26) express an opinion in support of the selected tool by claiming that within discourse studies semi-structured and unstructured interviews are the dominant methods of producing material as opposed to questionnaires or structured interviews. In semi-structured interviews, the researcher makes sure that all the themes on the interview schedule are covered albeit not necessarily in the same order or with the same formulations, ensuring exhaustive and extended account on the data.

Later, forty-nine more interviews were conducted in an iterative way using the same procedure, which was feasible due to an established network of contacts with the members of discourse community.

Afterwards, a corpus of professional documentation of 2,224,603 tokens representing naturally occurring language was compiled, marked-up and annotated for discourse and genre analysis. Where applicable, Oxford Wordsmith Tools 6.0 software was used to do the frequency analysis and identify local linguistic context applying *Concordancer*.

Discourse analysis is applied as both theory and method adhering to the procedure described in the literature review and the following principles (Baxter, cited in Dörnyei, 2007:124-125):

- **principle of variability,** i.e. language is used for a variety of functions, with systemic functional linguistics framework uncovering textual, ideational and interpersonal language functions;
- **constructed and constructive nature of language**: according to Gilbert and Mulkay (1984: 7), 'discourse can never be taken as simply descriptive of the social action to which it refers, no matter how uniform particular segments of that discourse appear to be.' Genre theories and critical discourse analysis disclose this perspective.
- **interpretative repertoire:** research accounts often provide evidence of regular, descriptive features or devices. The term 'repertoire' here denotes 'recurrently used systems of terms used for characterising and evaluating actions, events and other phenomena' (Potter and Wetherell, 1987: 149). This is achieved by the analysis of recurrent linguistic means and rhetorical structures and the interpretation of their use.
- **a combination of micro- and macroanalytical approaches:** micro- and macro-analytical approaches work together to produce an interpretation within DA. The analysis of language use is conducted at a clause, paragraph and text level (micro-analytical approach). When a professional genre in located in its local or wider social context, e.g. within one institution or a professional domain, the macro-analytical approach is undertaken.

Given the multifaceted nature of research on discourse, collecting data from different sources was undertaken in an iterative way. Van Dijk(2002: 10) considers that we should devise theories that are complex and account both for the textual, the cognitive, the social, the political and the historical dimension of discourse. Considering time and space constraints, the author has integrated the social, functional, cognitive and textual principles in the present research framework.

4.2 Empirical Data Analysis and Evaluation

4.2.1 Research stakeholders

Prior to commencing research activities, its primary stakeholders have been identified comprising:

- ✓ the authorities of Riga Technical College interested in the enhancement of the first level higher education curriculum in IT systems and IT networks administration and design *per se*, and English language syllabus in particular;
- ✓ Human Resource Management and Training departments of six IT companies based in Latvia and abroad providing outsourcing services of software development, IT product design and maintenance expecting the assessment the social setting of English language use for further design of training courses;
- ✓ Employees of IT product design and service provision companies, who are involved in documentation compilation, production and consumption, possessing an extensive database of documentation samples, but missing a systematic approach to its analysis, interpretation and use;
- ✓ Tertiary level students of Riga Technical College and other higher education institutions interested in the practical application of the empirical research results for the development of the communicative language competence for professional purpose as such to increase their competitiveness in the international labour market.

Hence, the choice of the participants for the sample of the present research was determined by the groups of stakeholders listed above, excluding Riga Technical College authorities since the reasons for their interest were primarily of methodological, not linguistic or discursive character.

The members of the professional discourse community, i.e. the representatives of Human Resource Management and Training departments and the IT specialists were inquired through the questionnaires with the subsequent participation in semi-structured interviews.

4.2.2 Analysing situational context

The sub-chapter presents how the analytical framework for investigating the specific situational characteristics of written professional communication in IT devised in the theoretical part is applied and reports the results of a situational analysis, which covers relevant non-linguistic characteristics of professional genres. The linguistic, i.e. intertextual, interdiscursive,

rhetorical and lexico-grammatical means are investigated in the sub-sequent subchapters.

The ultimate significance of situational context *per se*, context modelling and its impact on professional genres were discussed in chapters 1.4 and 2.3.2 of the present paper. The following parameters from table 3 have been used to design questionnaire and semi-structured interview questions: **participants, setting, communicative event, instrumentality and genres.**

Hence, the questions aimed to uncover (a) the written professional genres used in the IT domain, (b) their communicative aims, (c) the communicative events they reflect, (d) the intertextual and interdiscursive relations among the genres, (e) participants and setting in which these genres occur.

4.2.2.1 Situational context criteria and characteristics

At a macro level, the participants of the research are IT business entities located Latvia, Estonia, Belarus and Russia, providing software development and system administration services for re-insurance, igaming and gambling, instant messengers, banking and finance, social networks and industry.

In the present research we distinguish two types of participants, namely, discourse community members- informants in the surveys and the semi-structured interviews and discourse community members- addressers and addressees of genres in question. All participants performed both roles, i.e. an informant and an addresser or an addressee of a genre. However, it should be noted that an addressor or an addressee may also located externally, e.g. a client or a business analyst.

When building the sample, the following criteria have been considered:

- experience;
- position;
- native language;
- exposure to written professional genres where English is used as a *lingua franca;*
- age;
- gender.

Thus, the representatives of the sample should have at least one-year experience working in IT industry. The positions within company organisational structure should range from junior technical specialists to heads of departments and, if possible, top managers. Their native language should be other than English, with English being primary means of written communication at a work place, which is used for discourse processing, i.e. genre production

and consumption in accordance with professional activities, actions and operations. The English level proficiency of the respondents and genre addressors and addressees is at least B2 (CEFR) verified upon recruitment and later during the semi-structured data collection interview. Age and gender are non-defining criteria, however, the author has attempted to involve informants of both genders and various age groups.

Investigating the **setting** of the genres in question, the following characteristics are crucial for the analysis: genre frequency and internal or external use.

As it was asserted above, due to time and space constraints, the author has excluded **interaction,** i.e. the interpersonal language metafunction and the description of roles and relations in genres respectively from the present investigation.

The question aims to identify the domain or sub-domain to which the genre belongs and investigate discursive practices, activities, actions and operations pertinent to it.

The next section unveils the nature of the **communicative event** and seeks to identify if genre in question is a corporate or an individual practice to convey information.

Instrumentality presupposes the analysis of the documentation in written mode, Word or Excel processed, archived by the companies or stored within a document management or issue tracking system.

Communicative key and dialect are excluded from the present study since the former criterion focuses on register variation, and the latter on local peculiarities of language use, which is beyond the scope of the present research.

The following section aims to identify **genres** pertinent to particular domains and sub-domains within IT industry, relate them with communicative events and among themselves through interdiscursivity and intertextuality.

Table 8 below summarises the situational characteristics significant for written genres of IT professional communication in accordance with the criteria distinguished above:

Criteria	**Characteristics**
Participant	Informant Addresser Addressee
Setting	Time: frequency Space: internal vs. external use
Interaction	_____
Purposive domain	Separate independent business domains vs. sub-domains of IT Discursive practices, activities, actions and operations

Communicative event	Nature of communicative event Corporate or individual practice to convey information Link between discursive practice and communicative event Communicative aim
Instrumentality	Written mode Retrieval
Communicative key and dialect	_____
Genres	Relation to communicative events, intertextual relations, genre sequential organisation, genre hierarchical organisation, individual genre sets, genre colonies

Table 8. Framework for describing the situational characteristics of written professional genres in IT (designed by the author)

Based on the analytical framework described and summarised above, two survey-based research tools were developed for the study: questionnaire and semi-structured interview questions, which can be seen in appendix 1-2.

Bawashi and Reiff (2010:109) highlighted the significance of the discourse community in the process of data collection and claimed that "without access to the immediate evidence of the readers' uptakes of a genre or to the immediate contexts in which genres are used, researchers often have to rely on their intuitions about a text, creating a related methodological challenge—the challenge of achieving a kind of critical distance or reflexivity." (2010:109).

4.2.2.2. Administering questionnaires

The first level of situational analysis involved administering 87 questionnaires (see appendix 1) with the subsequent 49 questionnaires due to the extension and saturation of the sample, which took place in December 2011and January 2012 respectively.

The questionnaires consisted of categorical (i.e. only one option can be selected), multiple response (all applicable options can be selected) and open-ended questions (when the respondents provide answers themselves). The results have been manually processed and are presented in the figures below.

4.2.2.3. Participants

As it is seen in figure 9 below, the companies in the sample are located in the Baltics, Belarus and in the west of Russia. All of them either have head offices, branches

or subsidiaries in Latvia. Company A is located in Latvia, has a subsidiary in Belarus and provides software development and maintenance services for re-insurance sector worldwide). Company B is situated in Latvia, has a subsidiary in Belarus and operates in igaming and gambling software development). Company C is placed in Latvia and executes projects in software development for mobile devices and social networks in the USA and Asia). Company D is located in Estonia, is a subsidiary of a multinational corporation and provides software development for instant messengers. Company E is situated in Latvia and Russia and provides systems and network administration as well as software development solutions for social portals. Company F is located in Latvia and its IT department implements corporate IT solutions for industry), Company G is situated in Latvia and its IT department implements corporate IT solutions for banking and finance, including the administration of e-banking systems.

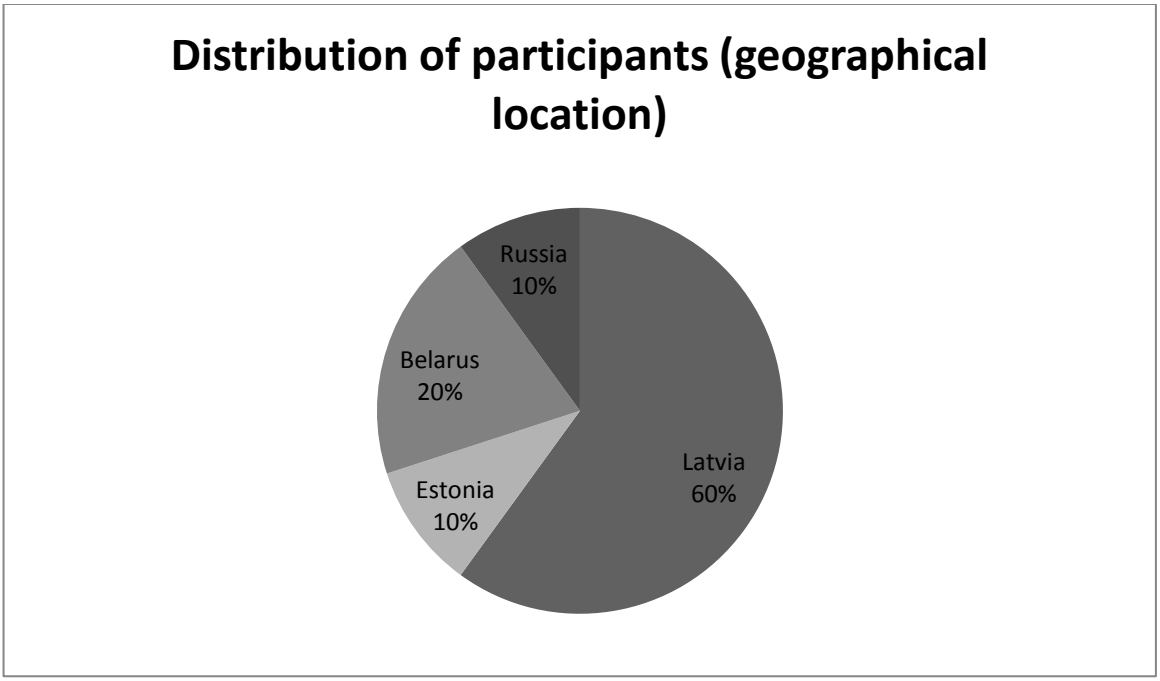


Figure 9. Geographical distribution of the companies in the sample

The data in figure 10 below justify the fact that all respondents in the sample are exposed to English as *a lingua franca,* to communicate with external stakeholders (e.g. partners, clients, owners and auditors), with native languages being Russian, which totals 65%, Latvian, which makes up 15%, Belorussian, which constitutes 11% and Ukrainian, which is 9%. As it was described above, native language, gender and age parameters are non-defining in this study. However, these data have been collected to ensure the representativeness and is summarised

below:

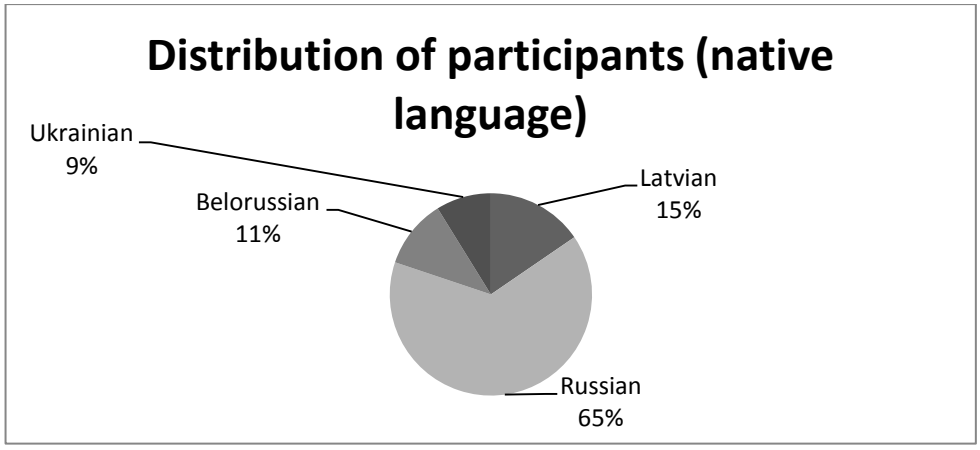


Figure 10. Native language distribution of the participants in the sample

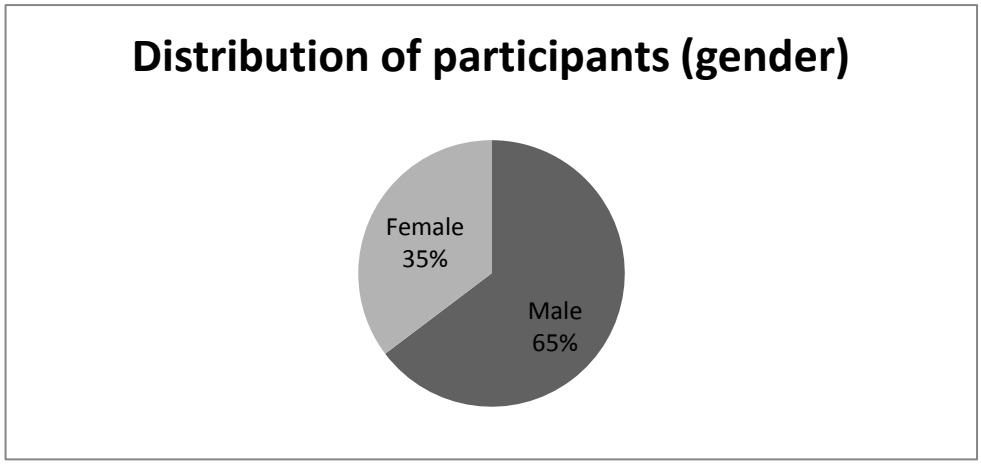


Figure 11. Gender distribution of the participants in the sample

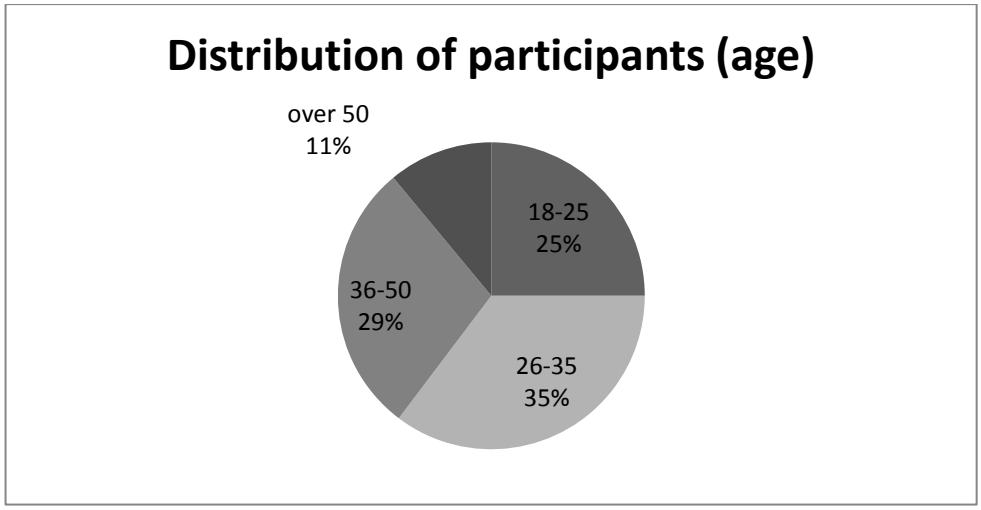


Figure 12. Age distribution of the participants in the sample

4.2.2.4 Purposive domain

The participants in the sample represent software development (functionality development, mobile application development, user interface development), testing (user acceptance, software performance, load, regression testing), system administration, project management and quality assurance business domains and sub-domains.

The informants were chosen randomly, based on their availability and eagerness to participate in the survey, since it was not feasible to question the whole population of the companies. Despite this fact, it is clearly seen from Figure 12 that software developers (programmers) and test engineers dominate in the sample, the other specialists performing facilitators' role in the software development process. Therefore, the primary set of documentation to be analysed is technical operational.

According to the information in the questionnaires, the technical operational documentation is divided into three major genre sub- sets and generally adheres to the business processes and communicative events associated with them, i.e. product or service development, testing, configuration and launch. The respondents referred to Information Technologies Integrated Libraries (ITIL) framework, which defined activities in a software development lifecycle, i.e. strategy, design, transition, operation, continual improvement. The documentation in the sets is grouped accordingly. Software architecture reflects the strategy of the IT product or service; systems requirements, functional and non-functional specifications and manuals outline design; test strategy, test plan, test case description, change request and bug report account for transition, describe operation, report on bug fixes, and documentation updates focus on continual improvement.

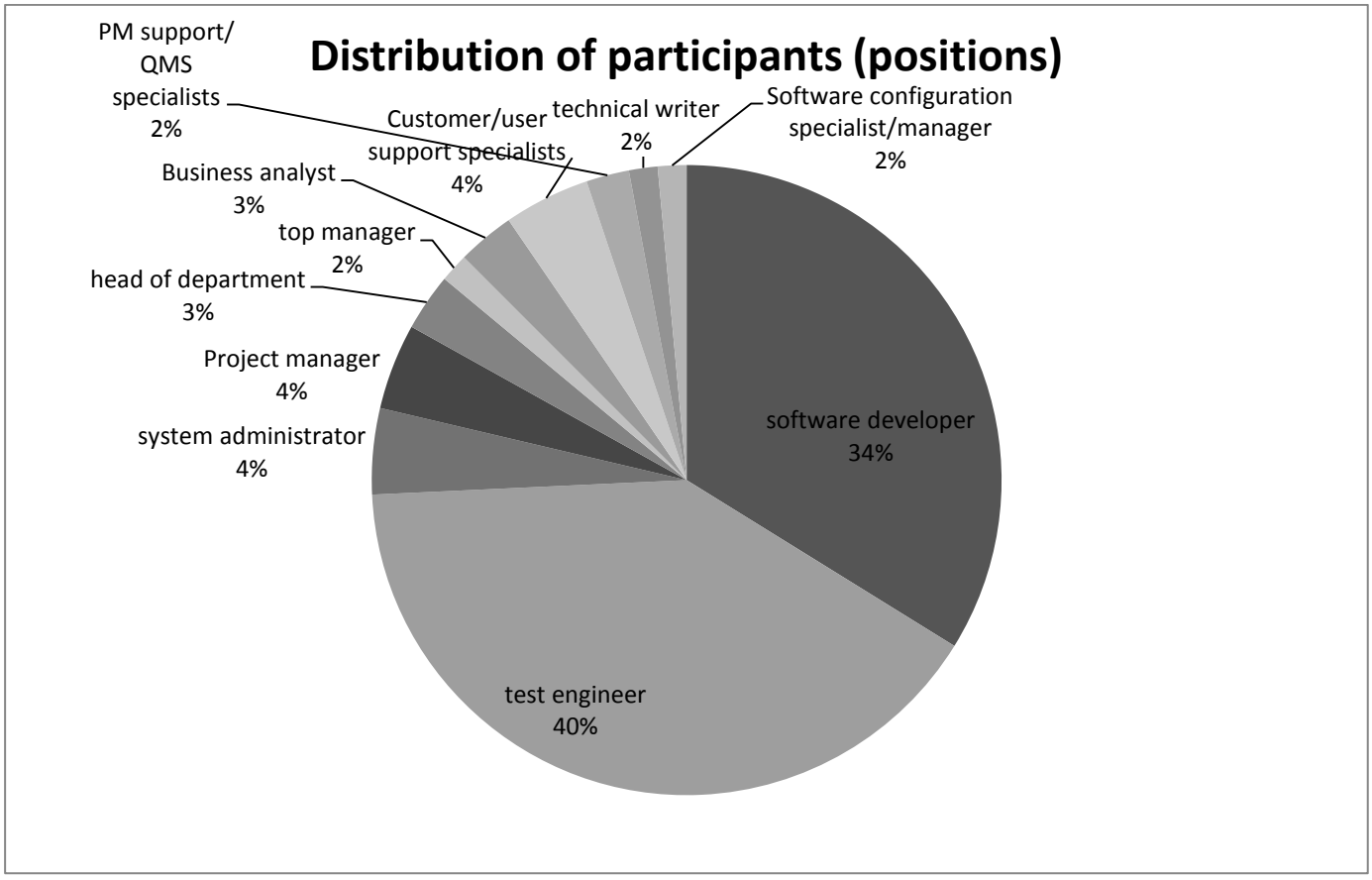


Figure 12. Positions distribution of the participants in the sample

4.2.2.5 Instrumentality

The respondents of the sample did not provide consistent answers to the questions in this section, claiming that all documents are stored electronically, however, various file formats (.doc, .docx, .pptx,. xls, .rar, .pdf), systems and tools are used, depending on the preferences of a client or a project manager to ensure easier file access and update.

To summarise, the findings of the first stage of situational analysis (administering questionnaires) presented above have supported the theoretical considerations of the scholars of the New Rhetoric Studies, who view genre as a typified social action produced and consumed as a result of rhetorical situation and discursive practice. The respondents of the sample produce and consume genres within activity systems, in which genres adhere to the stages of a software development lifecycle, i.e. strategy, design, transition, operation, continual improvement.

Although the sample was collected at random, alongside the non-defining characteristics (e.g. age, gender, native language of participants) which serve descriptive purposes, the defining characteristic of the social context modelling process (the positions of the IT specialists) make us

assume that software developers and test engineers are key professionals who generate value in a company, therefore, the documents processed by them will be used for the discourse and genre analysis further.

4.2.2.6. Analysis of semi-structured interview data

Following the administration of the questionnaires, in-person semi-structured interviews were conducted and aimed to obtain data about the setting, the communicative events and genre repertoire pertinent to this domain, trace genre intertextual and interdiscursive relations, organise genres into the systems, chains, hierarchies forming genre ecology as well as specify the answers provided by the respondents in the questionnaires since the open-ended questions were not addressed with sufficient details by the discourse community. The interviews were conducted in February and June 2012 on-site during the working hours, each interview lasting for 15-20 minutes as it was specified so by the top management of the companies in the sample and consisting of at least 19 questions (see Appendix 2). According to the non-disclosure agreement signed by the companies and the author, it was not allowed to tape the answers, so the interview protocol sheet (Appendix 3) was completed during each interview with further review and approval by the management of the companies.

The data from the protocol sheets were first sorted out according to the domain or sub-domain it belonged to, i.e. software development, testing, business analysis, project management, quality assurance and retrieved gradually.

The results revealed that depending on the domain and communicative aims, the documentation is subdivided into four streams, namely, quality assurance, project management, technical operational and business operational (administrative). Office operational documentation has been eliminated from the present study since its creation is determined by local legislation (e.g. job descriptions, labour contracts, invoices, Second Level Agreements (SLA) etc) and office management operations, but professional discursive processes govern the creation of technical operational, project management and are influenced by quality assurance domain documentation.

According to the respondents, quality assurance (QA), in its broadest sense, is any action taken to prevent quality problems from occurring. In practice, this means devising systems for carrying out tasks which directly affect product, service or management system quality. The concept of quality is addressed at two levels in the companies in the sample,

i.e. we deal with the quality of management and the quality of software. The former involves top management, project managers, project support office and specialist in lead and senior positions (lead and senior test engineers, the latter mostly refers to test engineers and developers, software configuration managers and system administrators).

Turning to the project management domain and describing its situational context, a project-based approach to conduct business operations has infiltrated many companies. According to leading Project Management Institute (PMI) practitioners (online), project, in its broader sense is a unique endeavour to produce a set of deliverables within the specified time, cost and quality constraints.

Downsizing, outsourcing and the accelerating pace of change have led to project management becoming one of today's indispensable disciplines, especially in IT. This discipline is about managing *ad hoc*, one-off projects instead of ongoing operations. According to the respondents in the sample, effective project management delivers better return on investment, better realisation of benefits, customized solutions, ensuring a customer-oriented approach. As a matter of fact, a larger task can be considered as a project and can be implemented both internally and externally. To track the processes, eliminate obsolete procedures and ensure transparency, knowledge management and overall efficiency all project processes and tasks have to be carefully documented, therefore, all involved parties are expected to possess generic and discourse competences and be able to do the basics of genre and discourse analysis.

Irrespective of the methodology one chooses, i.e. Waterfall, Prince 2, Agile, Scrum, Atern, XP Lean to manage a project, the project lifecycle consists of the following stages: initiation, planning, execution, closure, with each stage involving a certain amount of documentation devised. Depending on the project management approach, the length of each stage and the amount of the documentation respectively may be different This layer of documents mainly concerns top management for monitoring and control, project managers, business analysts, software architects, lead test engineers and developers, who compile them for record-keeping, status tracking, benchmarking, and reporting to a client as well as knowledge transfer and management within the company.

Technical operational documentation, which is the primary focus of the present investigation, is implemented by business and system analysts, technical writers, software developers, test engineers, configuration managers, system administrators. It outlines, describes and classifies technical systems, operations, processes.

4.2.2.7. Genres

The primary research interest of this study lies in the investigation of genre intertextual relations, organisational and lexico-grammatical peculiarities. The questionnaires helped the author to identify the recurrent genres and the professional activities, actions and operations they mediate, but the interviews and discourse analysis enabled the author to refine the situational context and analyse the linguistic peculiarities pertinent to them.

As it was described above, the data obtained from the interviews in the protocol sheets were grouped according to the domain or sub-domain it belonged to, i.e. software development, testing, business analysis, project management, quality assurance, forming genre repertoire with further gradual retrieval after coding. First, the genres were coded in interview protocol field notes, using the interviews to identify genres. A genre was codified if it was mentioned by at least two professionals (minimum value in distribution per position, see Figure 12). The genre was further verified when a textual artefact was submitted to the corpus.

The coding of genre relations is outlined in table 9 below:

Category	Activity	Example
Sequential	Rank according to chronological sequence	A test case is tested, a bug is identified and an incident report it written.
Hierarchical	Rank according to significance/ from general to particular	Specifications, configuration management plan and test strategy are subdued to operational architecture
Transformational	Transfer information of one genre into the other	A business solution is outlined in a business case and business requirements and then converted by a business analyst, software architect and project manager into a technical solution presented in the form of operational architecture, system, functional and non-functional requirements

Table 9. Coding relations between genres

Table 10 below illustrates the organisation of the genres in the sample into a repertoire (Bhatia, 2004) based on the discursive practices/ activities and communicative aims and ecology (Spinuzzi, 2004) or constellations (Swales, 2004) based on their meditational relations, the outline being the same.

Characterising genre repertoire, it takes the perspective of the discourse community, thus, being communitarian. The networks of genres model action as communication, possessing performative character; hence, the model of action is communicative/ performative as the reader is induced to action. The relationships are initiated by the discourse community, thus, being assymetrical. The genres in the columns are organised chronologically into chains, the relations being sequential, and hierarchies, the relations being dominant (Swales 2004). The overlapping relations or relations between the domains are marked with arrows and are of a transformational character, namely the source genre is reconceptualised and modified into a target genre. The system as a genre repertoire is considered to be stabilised for now.

Investigating the network as genre ecology, it takes the perspective of the professional activity, thus, the model of action being mediatory. New activities can result in the emergence or elimination of genres; thus, the relationships are intermediatory/ overlapping. The network deals with agency symmetrically, with individuals and genres mutually controlling, guiding, and mediating each other. The genre ecology is considered to be dynamic, for instance, in some projects automated testing is performed (activity); therefore test cases are not generated by test engineers, but by the testing tool (having a different rhetorical organisation and linguistic content), if any. It provides an example how an activity may influence the process of genre creation or elimination. Moreover, in Scrum, Agile and Atern project management approaches the amount of technical operational documentation is kept minimal to ensure the speed of the software development process and its compliance with customer needs.

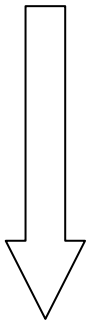
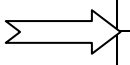
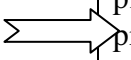
Genre Chains and Genre Hierarchies	Quality Assurance	Project Management	Technical Operational
	**quality standard**	**business case description business requirements** 	**system architecture systems requirements**
	quality policy		functional and non-functional specifications
	quality manual		test strategy test cases problem/bug report or change request
	quality procedures 	**a project plan** project plan (project scope, project schedule, change management plan, resource, financial, quality, risk and acceptance plans)	configuration management plan repositories configuration
	assessor's report	status reports	reports on fixes
	certificate	a closure report	manuals
		an acceptance act/note	

Table 10. Genre ecology of the participants in the sample

Exploring genre colonisation in the domains and sub-domains outlined above, the network takes the communitarian perspective, assessing action as communication. The agency is dealt with symmetrically since both individuals and professional activities may initiate system changes. Table 11 below intends to exemplify a broadening of genre investigation into the mapping of generic activity characteristic across the domains and sub-domains according to their communicative aim, describing genre colonisation.

General communicative aim	Genre	Specific communicative aim	Domain/ sub-domain
To regulate and guide the professional activity	project plan (change management plan, resource, financial, risk and acceptance plans)	to outline project milestones, deliverables, dates, resources involved, risks and acceptance criteria	project management
	configuration management plan	to outline software configuration activities	technical operational/software configuration
	test strategy	to outline software testing activities	technical operational/software testing
	quality standard	to set requirements while implementing a quality management system	quality assurance

	quality policy	to set the quality aims and objectives and define quality benchmarks, the roles of departments and personnel	quality assurance
	quality manual	to detail work processes accounting for quality management assurance	quality assurance
	quality procedures	to provide instructions or action points	quality assurance
To report progress of a professional activity	report on fixes	to inform about changes made to an application	technical operational
	status report	to inform about a status of a task	project management
	closure report	to inform about completed a project and submission of deliverables	project management
To inform about a professional activity, system, product, application, etc	system architecture	to describe design goals; to provide a general overview of the system architecture, system interaction patterns with other applications and data flow. To outline partitioning of functionality and responsibilities of the system were partitioned and then assigned to subsystems or components.	technical operational/ software design
	system requirements	to describe the data design related to the system, interaction, interface and operational scenarios;	technical operational/ software design
	manuals	to describe the operational circumstances to ensure proper system, software application or functionality use	technical operational/ software development, testing, configuration or use
	functional and non-functional specifications	to exhibit the functional capabilities of the system/ application; to outline non-functional constraints to the solution, e.g performance, safety, reliability, environment and other criteria	technical operational/ software development
	test cases	to outline the purpose of testing, input data, steps to reproduce, expected results, pass and fail criteria	technical operational/ software testing

	repositories configuration	to outline criteria for data storage repositories adjustment	technical operational/ software development
	business case description	to outline a business process that requires a software	project management
	business requirements	to outline criteria for a business process and describe the instances of use	project management
	project scope	to outline project deliverables	project management
	project schedule	to outline project milestones and time frames for deliverables	project management
To verify/ evaluate the compliance a professional activity, system, product, application etc with certain requirements	acceptance act/note	to inform about the acceptance of deliverables	project management
	assessor's report	to inform about the quality management system compliance with the requirements of a standard	quality assurance
	certificate of compliance	to verify the compliance of the system with external (standard) criteria	quality aasurance

Table 11. Genre colonies

The distinguished colonies of the genres in the domains in question are the colonies of regulatory, informative, reporting and evaluative genres.

4.2.3. Contextualisation of discourse: technical operational genres as social actions

The results illustrate that the technical operational documentation is discursively embedded in the project management documentation due to the functional organisational structure with quality being an overarching domain monitoring the quality of management and the quality of software. The interdiscursive relations may be traced when Scrum or Agile project management approaches are chosen reports on fixes become obsolete to speed up continuous software delivery. Moreover, system requirements and system architecture may be merged and written after the application has been delivered not prior to its development. At discourse contextualisation level all three streams are considered, whereas at organisation and textualisation levels only technical operational documentation is analysed.

The technical operational documentation is divided into three major genre sub- sets and generally adheres to the business processes and communicative events associated with them, i.e. product or service development, testing, configuration and launch. The respondents in the sample claimed that Information Technologies Integrated Libraries (ITIL) framework (reference) organises a software lifecycle into the following stages: strategy, design, transition, operation, continual improvement. The documentation in the sub sets is aligned with the processes and grouped accordingly, which is summarised in Table 12 below:

Discursive Practice/ Activity (respondents' breakdown)	**Discursive Practice/ Activity (ITIL)**	**Corresponding Genres**
Product or service development	strategy	operational architecture
	design	system requirements, technical specifications and manuals
Testing	transition	test strategy, test plan, test case description and incident/bug report, change request
configuration and launch	operation	software configuration plan, repositories configuration
	continual improvement	report on fixes, documentation updates, maintenance documentation, change requests

Table 12. The correlation of the genres to the discursive practices/activities

As it is seen in the table above, operational architecture reflects the strategy of the IT product or service; systems requirements, technical specifications and manuals outline the design; test strategy, test plan, test case description and problem/bug report account for transition, describe operations, report on bug fixes; configuration documents outline operational activities and documentation updates focus on continual improvement.

System requirements and operational architecture are the dominant overarching genres in these sets since they outline detailed infrastructure and ensure that these systems perform as expected by a centrally unifying control mechanism setting benchmarks for performance. (*e.g. The test cases should be developed based on business requirements*

*specification and validated with system requirements by ***Tracker QA team*. Extracted from operational architecture)

The implementation of operation architecture involves a description of a dedicated set of tools and processes. The process of recontextualisation takes place due to the fact that the same technical solution is described in all genres in question with a different level of generalisability and fragmentation. Namely, the technical solution has been designed and documented in order to perform business logic described in business case description and business requirements. It is further fragmented in technical requirements and specifications, test case description and incident/ bug reports. (e.g. *To support human resource assignment to a project and to provide necessary information to accounting related reports, an organization tree reflecting organizational structure of a company should be maintained for an integrated system. The organization tree maintained in *** will serve as the common source of information about organizational structure for all sub-systems of Company Information System (CIS)* Extracted from a business case description).

A part of the same business functionality and the respective technical solution, i.e. application is presented in technical specifications.(*e.g.*

Preconditions:	*The Actor is logged on* *The Actor has a permission to manage employees (persons)*
Postconditions:	*Updated assignment is saved to the system (see below)* *Updated assignment is added to Resource Allocation Plan and to the list of employee assignments.* *Updated assignment can be viewed in respective Reports.*

Extracted from technical specifications.)

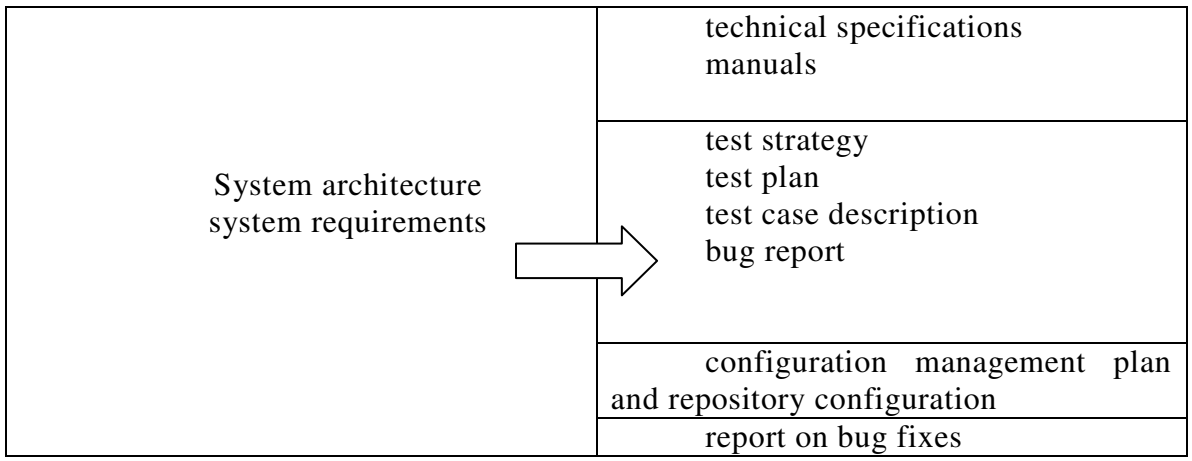


Table 13. Genre hierarchy of IT technical operational documentation

Technical specifications and manuals, in their turn, are dominant for the other genres in the set and guide the creation of a test strategy a test plan, test case descriptions, bug/incident reports, a configuration management plan, a repository configuration and report on bug fixes determining the rhetorical organisation and lexico-grammatical means. *(e.g. According to Project Initiation Notes and Client Acceptance Criteria, QA team defines and prepares a set of acceptance tests based on technical specifications and runs them to identify if the product is suitable or not. All Acceptance Tests are stored in XCasino Major Test Plan.* Extracted from test strategy.)

technical specifications manuals
test strategy test plan test case description bug report
configuration management plan and repositories configuration
report on bug fixes

Table 14. Hierarchy of IT technical operational documentation: software development and testing sub-set

Ranking genres chronologically, the genre chain is organized in the following way:

1. Operation architecture and system requirements are drawn up in response to business analysis and project management documentation
2. Functional and non-functional specifications are devised.
3. Test strategy and test plan are generated.
4. During the functionality testing against technical specifications, bug/incident reports are generated iteratively, detailing defects.
5. When defects are fixed, reports on big fixes are written or the issue is closed in the tracking system.

Prior to the functionality launch to production environment configuration management plan and repository configuration are created.

4.2.4. Contextualisation of discourse: project management genres

Refining the situational context, key documentation drawn up in the process of project management is a business case description resulting in business requirements, a project scope, a project schedule, a change management plan, status reports, a closure report, and an acceptance note/act. It should be noted that genre transformational relations were observed between the domains resulting in genre intertextuality and recontextualisation between quality procedures and project plan; business case with greater degree of generalisability and business requirements, system architecture and system requirements presenting a business case in a fragmented way.

Organising the above mentioned genres and sub-genres into a hierarchy, a business case description as well as a scope management plan are dominating, as they predetermine the communicative purpose and content of other genres as well and guide their sequential development. *(e.g. The main goal of ***process is to automate yearly review of small deals in order to optimize work of *** client managers and marketing actuaries.* Extracted from business case.)

Business case description management plan	**business requirements**
	system architecture and system requirements
	functional/ non-functional specifications
	project plan (project scope, project schedule, change management plan, resource, financial, quality, risk, communication and acceptance plans)
	status report
	closure report
	acceptance act/ note

Table 15. Hierarchy of PM documentation

The recontextualisation between the project management and technical operational domain is traced and the stages for implementing the abovementioned business case are outlines in system architecture. (e.g. *Technology Stack*

The implementation is intended to be based on the following key technologies:

- *Existing Common Components library set;*
- *CommonJ WorkManager – for running time-triggered batch jobs;*
- *Apache Camel – for running asynchronous jobs. No integrations with JMS or other queuing technologies will be used, just loop-back connection (http://camel.apache.org/);* Extracted from system requirements.)

*(e.g. The *** process is a fully automated process that does not require user input. The requirements state that there will be several processes that will run periodically. They are:*

Preprocessing job – should be run every day;

Notifications job – should be run once per month (on 15th);

Review job – should be run every day.

Each process business background and technical details will be described in separate sections below. Extracted from system architecture.)

Ranking the genres chronologically in order to form a genre chain, they can be allocated as follows:

1. A business case is developed and explored by the stakeholders of the discourse community.
2. A feasibility study is performed and a scope management plan is written by a project manager, and reviewed by subject matter experts and consultants.
3. Terms of reference are compiled.
4. A project team is appointed and job descriptions are reviewed or devised.
5. A project plan is written.
6. A resource plan is devised.
7. A financial plan is developed.
8. A quality plan is designed.
9. A risk plan is developed.
10. An acceptance plan is specified.
11. A communication plan is envisaged.
12. During the execution phase, when project deliverables are developed, status reports, agendas, meeting minutes, change requests, test plans and incident reports are created iteratively .
13. The project closure report is devised to measure project compliance with scope requirements and identify non-conformances. Finally, when the requirements of the acceptance plan are met, an acceptance note is created.

(e.g. *PROJECT OVERVIEW*
2.1 BUSINESS CASE
2.2 SCOPE
2.3 OUT OF SCOPE
2.4 PROJECT TAILORING
2.5 BUDGET
2.6 ASSUMPTIONS AND CONSTRAINTS
2.7 OBJECTIVES
2.8 ITERATION PLAN
3. PROJECT TEAM ORGANIZATION
3.1 ORGANIZATION CHART

3.2 ROLES AND RESPONSIBILITIES
3.3 COMMUNICATION PLAN
3.4 CONTACTS
4. PROJECT MANAGEMENT
4.1 ISSUE MANAGEMENT AND ESCALATION PLAN
4.2 MONITORING AND CONTROL PLAN
4.3 RISK MANAGEMENT PLAN
5. PROJECT EXECUTION
5.1 CONFIGURATION MANAGEMENT PLAN
5.2 SECURITY PLAN
5.3. REGULATORY ANALYSIS/LEGAL ISSUES
5.4 CHANGE MANAGEMENT PLAN
6. QUALITY ASSURANCE
6.1 PROJECT QUALITY ASSURANCE PLAN
6.2 PROCESS QUALITY ASSURANCE PLAN
6.3 PRODUCT QUALITY ASSURANCE PLAN . Extracted from a project plan.)

Considering the size of the project, the methodology adopted, the local tradition, or the preference of a client and, a company, individual ordering and forming a genre set may take place. Then, some other genres or sub-genres may be eliminated, introduced and embedded, for instance, a report on fixes has become obsolete in some projects and the problematic issue is just closed in the tracking system, which signals the solution of the problem and the report is no longer required. (The discursive practices of companies A, B and D)

4.2.5. Contextualisation of discourse: quality assurance genres

According to the respondents in the sample, to implement a quality system for an organisation, first it has to be developed; secondly, it has to be appropriately documented (in the form of quality manual, policies, procedures, and reference information); thirdly, staff has to be informed, instructed, and adequately trained to use it. Finally, it has to be certified and afterwards recertified by an external authorized body, e.g. Lloyd Register Quality Assurance (LRQA) or Det Norske Veritas to ensure system efficiency.

Refining the situational context, key documentation drawn up in the process of quality system design and implementation is a quality standard, a quality manual, policies, procedures, external auditors' report and a certificate of approval. All companies in the sample complied with the requirements of ISO quality management system and possessed ISO 9000 certificate and two companies have implemented CMMI (Capability Maturity Model Integration) framework to verify their managerial processes.

Genre relations within the quality assurance domain are reflected in table 16 below:

Quality Standard	quality manual
	quality policy
(e.g. BS EN ISO 9001:2008	quality procedures

	assessor's report
	certificate of compliance

Table 16. Hierarchy of quality assurance genres

A quality standard is issued by the International Organisation for Standardization and is available through national standards bodies. The overall communicative aim is to set requirements for a company to comply with while implementing a quality management system within the frames of management responsibility, resource management, product realization, measurement, analysis and improvement (Standard ISO 9001, sections 4-8). The standard predefines the creation of a quality policy and quality manual with the following sub-genres: control of documents (4.2.3), control of records (4.2.4), internal audits (8.2.2), control of nonconforming product / service (8.3), corrective action (8.5.2) and preventive action (8.5.3). The quality policy is a long-term strategic document jointly devised by top management and quality consultants to set the quality aims and objectives of the organization and define the roles of departments and personnel as well as quality benchmarks ensuring quality. It has to be communicated throughout the company and understood by personnel at all managerial levels.

Quality procedures are developed jointly by a quality manager and responsible staff (heads of departments, team leads, specialists) to detail work processes and provide clear instructions or action points. Record-keeping and documenting enable the professionals to reduce errors through the clarity of instructions and to revisit the information for further reference, ensures knowledge management within the organization in case of personnel turnover, act as a management tool for control and planning. These procedures are linked with project management documentation through constitutive intertextuality since the nature of message they contain is declarative and induces managers to the adherence to certain procedure. *(e.g. Quality management system Manual (01.06.2009); Confluence.***.com; Additional part to QM Manual - *** Production environments Incident Report (sampled TECHADM-18009) was added as a preventive action after the previous surveillance audit.* Extracted from the external assessment report to comply with *ISO 9001:2008* requirements.*)*

An external assessor's report is written after the audit when a company seeks to obtain the certificate of compliance and is sent to an independent expert within the certification body and the company top management under consideration.

Organising the above mentioned genres and sub-genres into a hierarchy, quality standard is undoubtedly a dominating one, with other being subordinate, as it predetermines the communicative purposes and content of other genres as well as and guides their development. (e.g. *The main objective of the visit was to assess management system control against ISO 9001:2008 requirements. The outcome of the surveillance visit is indicative of continued compliance with ISO 9001:2008 from the processes and records sampled.The Quality Management System of the company is well established and maintained, complying with ISO 9001:2008 requirements. The prolongation of certification against standard ISO 9001:2008 is recommended.* Extracted from the external assessment report to comply with *ISO 9001:2008* requirements.)

Ranking the genres chronologically in order to form a genre chain, they are allocated as follows:

1. Quality standard is issued and explored by the stakeholders of the discourse community.
2. Quality policy is developed by the top management with the help of quality experts and consultants.
3. A more elaborated description of company vision and activities regarding quality is prepared in the quality manual.
4. Quality procedures reflect consistent actions of personnel in certain job related situations.
5. External assessor's report is drawn up to review the quality management system operation and overall efficiency as well as state company's compliance with standard requirements and non-conformances.

Considering company individual genre ordering and forming a genre set, control of documents (4.2.3), control of records (4.2.4), internal audits (8.2.2), control of nonconforming product / service (8.3), corrective action (8.5.2) and preventive action (8.5.3) may exist as separate sub-genres or a part of quality manual depending on the size of the company.

To summarise, genre constellation or genre ecology in IT comprise four domains, i.e. technical operational, project management, quality assurance and business operational, the first three being crucial for the present study. Genre ecology is devised underlying sequential, hierarchical and transformational relations. Genre recontextualisation is observed between the domains (e.g. in case of business case and business requirements transformation into operational architecture and system requirements. Refer to appendices 6 and 7). All the genres in the

network across the domain share four common communicative aims, i.e. to regulate and guide the professional activity; to inform about a professional activity, system, product, application; to report progress of a professional activity; to verify/ evaluate the compliance a professional activity, system, product, application to certain requirements.

4.2.6. Building the corpus for discourse and genre analysis

The goal of the present research is to describe the linguistic (discursive and generic) peculiarities that govern English written communication in IT professional setting. To undertake discourse and genre analysis, the study relies on the corpus of technical operational, project management and quality assurance documents compiled by the author.

This sub-chapter describes overall corpus design and details full-text corpus compilation procedures, mark-up and annotation. The methodology used in the present study allows for an empirical investigation of linguistic peculiarities of IT professional genres through manual discourse and genre analysis of systematically organised and representative collections of texts. As it was mentioned in the introduction, the available research in the field is fragmented and mostly focuses on linguistic (organizational and lexico-grammatical) peculiarities of separate genres, excluding the significance of situational context, whereas the present research approaches discourse and genre holistically at three levels, i.e. social, organizational and textual, placing the given genres in their situational context and relating them to professional activities, genre being a mediatory tool.

The compiled corpus is specialised (Biber et al 2007, Baker 2006). According to Baker (2006:26), 'this would be used in order to study aspects of a particular variety of genres of language'. Baker (ibid), Leech (1991), Kennedy (1998) drew a distinction between corpora and text databases and archives, claiming that although corpora and text archives are very similar, yet a corpus is compiled in a structured and systematised way and performs a 'particular representative function' (Leech 1991:11 cited in Baker 2006:26). The present research utilises corpus linguistic principles for text database compilation and design. In this respect, the compiled collection of texts is considered to be a corpus. However, Baker (ibid) also defines corpus as 'a body of electronically encoded text'. Due to the qualitative nature of the present study and the focus on genre and discourse analytical features, the present collection of texts was manually encoded and manually processed, automating only some operations, thus possessing more features of a text archive or a text database. Therefore, when describing the

compilation and design methodology, the term corpus will be used. When referring to encoding and data processing, the term database of documents will be utilised.

The criteria for the inclusion of genres into the corpus were the following:

1. topic, i.e. all genres must be related to the software development process or IT operations directly (i.e. technical operational documentation) or guide and facilitate them (e.g. quality assurance and project management documentation);
2. time, i.e. the documents have to be created not later than 2005;
3. space, i.e. IT companies or IT departments in other domains;
4. participants/ addressers, i.e. IT professionals, non-native speakers of English possessing B2 level (CEFR);
5. genre as a mediatory tool, i.e. genre in question should reflect professional activities;
6. source, i.e. genres must be obtained from multiple sources.

The corpus compilation was based on the analysis of the situational context detailed above to ensure representativeness and balance and prevent it from being skewed by design (, 1993; Biber et al, 2007). It was initially intended to analyse technical operational documentation; however, the results of the situational analysis prove that project management and quality assurance documentation sets should not be underestimated due to interdiscursivity; therefore, they have been included for intertextual and interdiscursive analysis. Thus, since the research focuses on naturally occurring language, it should not be confined to the analysis of solely linguistic peculiarities, accounting for situational representativeness.

Baker (2006:27) also addressed the issue of corpus representativeness in terms of sampling procedure. He asserted that, generally, when using equal size samples, 'we are more likely to be able to claim that our sample is representative' (ibid). However, dealing with a small corpus, conducting discourse analysis or having particular research questions, sampling of texts is not required and full-sized texts can be used (ibid).

Since the participants in the sample perform different responsibilities (see Figure 12), and we analyse three streams of interrelated documentation, stratified sampling procedure was applied to ensure that the compiled corpus is balanced, the priority given to the technical operational documentation so the streams of the documentation in the corpus are proportionally balanced. More importantly, the primary focus of the study is a qualitative exploratory and explanatory case study aimed at describing institutional language use with genre being the primary unit for analysis, quantitative perspective being secondary. It also determined the fact that full texts were selected for the inclusion in the corpus.

The sources of texts were identified and four companies in the sample agreed to provide documentation for research analysis purposes, obliging the author to remove all sensitive information, consider ethical and confidentiality norms, publish it in a fragmented way as a part of research article or thesis with prior approval of the responsible manager. Quality assurance documentation was obtained from companies and an authorised certification body database.

Initially the corpus consisted of 198 texts, i.e 110 technical operational, 68 project management and 20 quality assurance documents. Following this, the author undertook several procedures to ensure the representativeness of genre and corpus balance, and the documents were selected consisting of approximately the same number of words and similar rhetorical structure, considering genre integrity principle and applying topological genre identification (described in sub-chapter 3.3.1. of the present paper). All the documents were thoroughly read in their entirety. To account for consistency, the technical operational documentation and project management documentation of the same project were selected in order to investigate intertextual peculiarities, which resulted in the exclusion of 57 documents from the initial corpus.

Table 17 shows the composition of each corpus section (technical operational, project management and quality assurance), including the number of texts collected and the number of words each document contains. The refined corpus for analysis consisted of 88 technical operational documents, 40 project management documents, 13 quality assurance documents as presented in Table 17 below:

Genre	**No of documents**	**No of words**	**Source**
operational architecture	4	19,584	companies A, B,C, E
systems requirements	4	15,840	companies A, B,C, E
functional non-functional specifications	8	98,112	companies A, B,C, E
test strategy	4	23,304	companies A, B,C, E
test cases	20	12,840	companies A, B,C, E
problem/bug report or change request	20	4,874	companies A, B,C, E
configuration management plan	4	8,421	companies A, B,C, E
repositories configuration	4	8,015	companies A, B,C, E

reports on fixes	20	2,011	companies A, B,C, E
Sub-total	**88**	**193,001**	
business case description	4	\16,213	companies A, B,C, E
business requirements	4	14,224	companies A, B,C, E
project plan (project scope, project schedule, change management plan, resource, financial, quality, risk and acceptance plans)	4	59,215	companies A, B,C, E
status reports	20	21,660	companies A, B,C, E
closure report	4	2,272	companies A, B,C, E
acceptance act/note	4	1,264	companies A, B,C, E
Sub-total	**40**	**114,848**	
quality standard	1	9,485	companies A, B,C, E
quality manual	4	21,815	companies A, B,C, E
quality procedures	4	20,324	companies A, B,C, E
assessor's report	4	6,504	companies A, B,C, E
Certificate	4	208	companies A, B,C, E
sub-total	13	**58,336**	
Total	141	**366,185**	

Table 17. The composition of the corpus compiled for the study

The compiled corpus is monolingual, in which English is used as a *lingua franca.* It should be noted that no correction activities have been undertaken since the level of the professionals is B2 and higher, which is a pre-requisite during the recruitment process. If the level is lower, professionals attend in-house language training. Therefore, infrequent mistakes were encountered, which were insignificant for the present research (e.g. omission of articles, improper tense-aspect forms and wrong word order).

Although the compiled documents were created in the years 2006-2013, the corpus is considered to be synchronic as they were viewed as separate units, created to function at a time.

Having been subjected to genre typological confirmation, the database of documents was left without further editing. For manual genre and discourse analysis, the files were coded and analysed in the format they were submitted, i.e. .pdf, .doc and .docx, adding comment notes

(.doc and .docx) or annotation notes (for .pdf, when accessed through LinuX Document Viewer) since the format of tables, charts, diagrams and other objects was affected if further file conversion was undertaken. Only when Oxford Wordsmith Tools software was applied, the files were converted to plain text (.txt) with further manual editing to remove conversion faults.

For genre and discourse analysis, paratextual features (Genette 1997) , including all disclaimers, notices, documentation pages, acknowledgements, tables of contents, lists of terms, organisational charts, footnotes, reference lists, and appendices were left without changes since they reflected professional activities and were vital.

4.2.6.1. Discourse and genre analysis: organisation of genre

The compiled corpus is used to investigate generic and discursive (rhetorical and lexico-grammatical features) pertinent to English written communication in IT for professional purposes in which English is used as *a lingua franca.* To accomplish that, the present study draws on the ESP tradition of genre analysis (Swales 1990, Paltridge 1997, Bhatia 2004) framework to correlate moves and text types, Trimble‘s rhetorical functions (text types) and Martin’s (2000) particulate (serial and orbital patterns) information ordering.

As it was mentioned in the theoretical part, move and step analysis (Swales 1990) seeks to identify organizational patterns of genre in relation to the communicative purposes. Each move may consist of several steps in relation to lower level communicative aims. The methodological constraints of such analysis in terms of the semantic boundaries of moves, labour intensity and difficulty to codify the data leading to frequent criticism were addressed in sub-chapters 3.3.1 and 3.3.2 of the present study. Therefore, other frameworks for situational, rhetorical and textual analysis have been used in addition to the one by Swales resulting in a descriptive design at large.

The procedure of the descriptive genre analysis is outlined below:

1. identifying the general communicative aim of the genre to allocate it to a colony;

2. determining larger discourse organisational units and moves within them for technical operational documentation, applying Beaugrande’s standard of informativity(as described in sub chapter 3.3.3.2);

3. identifying/ coding moves within the organisational units and verifying them with a member of discourse community;

4. summarising the moves in the coding protocol;

5. indentifyng information ordering, text types and their correlation to moves;

6. analysing recurrent linguistic peculiarities, applying Oxford Wordsmith Tools software where applicable;

7. identifying manifest and constitutive intertextual relations manually;

8. summarising the findings.

There is no strictly defined framework for move analysis for technical operational documentation, unlike for the abstract of research articles (CARS model, Swales 1990). Therefore, the moves can vary in length, may or may not have a predetermined order and strictly adhere to communicative events they reflect. The criteria for move identification for the present study are linguistic evidence of move boundaries, text rhetorical organisation and the correlation to communicative aims and communicative events.

Since the move and step analysis may involve subjective cognitive considerations, the process of coding was further validated by requesting a member of the discourse community to review the coding of one document of each genre in the sample, e.g. a test lead reviewed a test strategy, a test plan, a test case description, a problem or bug report since they create and process such documents on a regular basis. Each genre was represented through 4, 8 or 20 documents respectively (see Table 17 for reference).

The coding scheme for genre analysis is outlined below.

Move 1. Establishing a territory

As the steps of this move suggest, it provides the background information of the document and the project it belongs to, i.e. proprietary notes, table of contents, authorisation and review history, document aim, definitions, acronyms, abbreviations and references. It also includes the outline of the scope of a system, application or a functionality, a development, setup or testing process. The information is usually organised in tables. The characteristic text types are descriptions and definitions.

Move 2. Establishing a niche.

This move presents the system, application, functionality or process declared in move 1, stating its aims, objectives, assumption, constraints, and risks. The recurrent text types are definitions and descriptions.

Move 3. Occupying the niche.

This move presents a detailed view of the system, application, functionality or process, sometimes from different angles (e.g. a system user-case view, a logical view, a process view, a

deployment view). The recurrently encountered text types are descriptions, definitions, classifications, instructions and the hypothetical-real pattern.

Having financial considerations, the genre annotation was conducted manually, since the available software solutions for qualitative research (e.g. atlas.ti, NVivo or Qualrus for computer assisted qualitative data analysis (CAQDAS)) are expensive. The screenshots of the annotated documents are seen in appendices in a fragmented way.

According to the results of the interviews, business and system analysts identify a software development process as core for value and cash flow generation; thus, software architecture, system requirements, technical specifications, testing and configuration documentation will be further analysed in terms of discourse organisation and the use of lexico-grammar. Moreover, these genres are used at all levels within a company starting with technicians, test engineers and developers and finishing with project managers and top management.

4.2.6.2.Move and step analysis of system architecture

As it was described in table 11, system architecture belongs to informative genres and describes system design goals, various system views, outlines constituent parts and interaction patterns with other applications and data flow. The addresser of the genre is a systems architect, a lead developer and a project manager, the addressees are all the technical team involved in the project implementation.

Conducting move and step analysis the following structure has been identified:

Moves and steps	Examples	Rhetorical organisation

Move 1. Establishing a territory Step 1. Providing background information (proprietary notes, table of contents, authorisation and review history) Step 2. Declaring the aim of the document; Step 3. Outlining the scope and the purpose of the system; Step 4. providing a glossary (definitions, acronyms, abbreviations and references).	Step 1. *** *and* ****proprietary rights are included in the information disclosed herein.* Step 2. *It is intended to capture and convey the significant architectural decisions which have been made on the system.* Step 3. *To integrate MS PJS and JIRA with the aim to increase efficiency of planning, management, controlling and analysis of tasks and resources Task Operational Data Storage (TaskODS) - a centralized task storage base – will be implemented. TaskODS will contain replicas of data both from MS PJS and JIRA. Information exchange interfaces – PJS to/from TaskODS and JIRA to/from TaskODS – will be set up and maintained to provide single input point for any portion of information while any of three systems can get and use necessary information.* Step 4. *Task Operational Data Storage – a centralized task storage base, which contains replicas of data both from MS PJS and JIRA sides.* *MS PJS- Microsoft Project Server*	Step 1. description; serial ordering; Step 2. description; serial and orbital ordering; Step 3. description; serial and orbital ordering; Step 4. definition, serial and orbital ordering.

Move 2. Establishing a niche Step 1. outlining architectural representation; Step 2. Stating goals and identifying assumptions, constraints, risks.	Step 1. *This document presents the architecture as a series of views: use case view, logical view, process view and deployment view.* Step 2. *The integrated system will consist of three components:* • *TaskODS* • *MS PJS* • *JIRA* *Interfaces TaskODS <-> MS PJS and TaskODS <-> JIRA will be supported to provide proper system integration.* *At the same time with rich functionality, well developed user interfaces and information visualization these systems have a number of drawbacks. As a result none of them alone can fully support task planning and tracking at the level required by both companies.*	Step 1. description; serial ordering; Step 2. description; serial and orbital ordering;
Move 3. Occupying the niche Step 1. Describing various system views (a user-case view, a logical view, a process view, a deployment view); Step 2. Outlining various architecture (software, hardware, information, internal communication architecture) Step 3. Describing various designs (database design, user interface design a.o.)	Step 1. *The use case involves:* • *Maintenance of united project task tree with hierarchical structure (parent–child relations), containing MS PJS tasks on higher levels and JIRA issues on lower levels;* Step 2. *The Workflow provides process instance lifecycle tracking functionality, validation of each transition to find out whether it is acceptable in current circumstances (Figure 3 Workflow Support).* Step 3. *The*** *data model is driven by the principle that a Client can have one or more Offers. On the other hand, several Clients can participate to an Offer with different roles (Cedent, Broker, etc.).*	Step 1. description; serial ordering; Step 2. description; serial ordering; Step 3. description; serial ordering. .

Table 18. Move and step analysis of system architecture.

As it can be seen in the table 18, the genre in question consists of 3 moves ordering information from general to more specific. The prevailing text type is description, followed by definition. The serial pattern for information ordering dominates. The data obtained may be correlated with the general communicative aim to provide information about system architecture.

4.2.6.3. Moves and steps analysis of system requirements

System requirements define the aim and objectives of the software functionalities under design, outline the functional components and detail the key features of functionalities for each release. The addresser of the genre is a system architect, a lead developer and a project manager, the addressees are all the technical team involved in the project implementation.

Conducting the move and step analysis, the following structure has been identified:

Moves and steps	**Examples**	**Rhetorical organization**
Move 1. Establishing a territory. Step 1. Providing background information (proprietary notes, table of contents, authorisation and review history) Step 2. Setting system aim.	Step 1. *** *and* ****proprietary rights are included in the information disclosed herein.* Step 2. Setting system aim. *This document describes the use of *** system that has been designed and developed to support the loading, reporting and analysis of ***.*	Step 1. description; serial ordering; Step 2. description; serial and orbital ordering.
Move 2. Establishing a niche Step 1. Outlining system functionalities.	Step 1. *** *Data Module artefacts to be translated are as follows:* *Application Language pack – Excel list of all language elements of the application (labels, messages, etc.) supplemented by Data Dictionary and Functional Specification for the translation references .*	Step 1. description; serial ordering.
Move 3. Occupying the niche Step 1. Outlining functionalities features for each release	Step 1. *FE-2: Register, view, modify, unregister Organization Units in TaskODS corresponding to departments as well as employees of the company and forming a resource pool for task fulfillment.*	Step 1. description; serial ordering. .

Table 19. Move and step analysis of system requirements.

Similarly to system architecture, the genre in question consists of 3 moves ordering information from general to more specific. The recurrent text type is description, with the dominating serial pattern for information ordering. The data obtained may be correlated with the

general communicative aim to provide information about system requirements highlighting the manifestation of the ideational language metafunction.

4.2.6.4. Move and step analysis of technical (functional) specifications

Technical (functional) specifications are meant for providing information for further reference, while developing, testing or launching a technical application or a system. The nature of the communicative event it describes is performative.

The target audience of this genre can be both internal, i.e. development team members (to prepare a detailed schedule), developers (to develop software), testers (to test software), technical writers (to write end-user documentation – manuals, guides, etc.), support team members (to consult end-users), and external, i.e. end-users (to read how to use software) and outsourcers (to use and modify software further).

Moves and steps	**Examples**	**Rhetorical organization**
Move 1. Establishing a territory Step 1. Providing background information (proprietary notes, table of contents, authorisation and review history) Step 2. Stating functionality aim.	Step 1. **** and ***proprietary rights are included in the information disclosed herein.* Step 2. *This document provides the overview for the steps to be accomplished to introduce the new language for the *** Data Module.*	Step 1. description; serial ordering; Step 2. description; serial and orbital ordering.
Move 2. Establishing a niche Step 1. Defining relevant terms. Step 2. Outlining user types, authority, common components and rules	Step 1. *Account login name (username) is merchant's external ID for each customer (for some merchants serves as internal ID as well).* Step 2. *IC Business User sets up and uses up to 4 repositories, receives weekly *** Log files in small batches, occasionally will run conversion process, will use reporting functionality.* *Main Tab widget is used for navigation purposes.*	Step 1. definition; serial and orbital ordering; Step 2. description; serial ordering.

Move 3. Occupying the niche Step1. Detailing functional requirements/ functional use cases.	Step 1. *Edit User Flow* *The Actor navigates to the User Management functionality and selects "Edit User" Tab.* *The Actor selects the user to be updated.* *The Actor may update user credentials and save the changes*	Step 1. description; serial ordering.

Table 20. Move and step analysis of technical (functional) specifications

Conducting the move and step analysis, it has been revealed that the rhetorical organisation of discourse is similar to that of system requirements. The major difference is that functional specifications describe functionalities with greater amount of detail meant for technical implementation, whereas system requirements show an application or functionality situated within a system. Therefore, the orbital information pattern is used in more steps than in previously analysed genres. The information in moves is ordered from general to more specific. The key language metafunction manifested in this genre is transactional (ideational) .

4.2.6.5. Move and step analysis of non-functional specifications

According to the International Institute of Business Analysis (IIBA) Business Analysis Body of Knowledge (BABOK) v1.6, non-functional requirements describe system or environment attributes which can cause constraints to the technical solution. According to the respondents in the sample, these are the requirements that do not include functional, data or process requirements, but focus on accessibility, security, compatibility, maintainability, reliability, scalability, supportability and other criteria. They are usually drawn up, but not confined to, by a business analyst on clients' side and are meant for IT project managers, software developers and test engineers. The set of requirements may be different from project to project, depending on its size, design, participants and functional requirements.

The move and step analysis of non-functional specifications is presented in table 21 below:

Moves and steps	**Examples**	**Rhetorical organization**

Move 1. Establishing a territory Step 1. Providing background information (proprietary notes, table of contents, authorisation and review history) Step 2. Stating the aim of the document.	Step 1. **** and ***proprietary rights are included in the information disclosed herein.* Step 2. *The main aim of this document is to illustrate the requirements of the project ***. It provides the detailed description of the non-functional requirements proposed by ***.*	Step 1. description; serial ordering; Step 2. description; serial and orbital ordering. .
Move 2. Establishing a niche. Step 1. Outlining business requirements, assumptions and constraints.	Step 1. *The integrated system should support comprehensive project cost planning and management functionality.*	Step 1. description; serial ordering.
Move 3. Occupying the niche Step1. Detailing non-functional requirements (e.g. accessibility, security, compatibility, maintainability, reliability, scalability, supportability and other criteria).	Step 1. *The implementation is intended to be based on the following key technologies:* *Existing Common Components library set;* *CommonJ WorkManager – for running time-triggered batch jobs;* *Apache Camel – for running asynchronous jobs. No integrations with JMS or other queuing technologies will be used, just a loop-back connection (http://camel.apache.org/).*	Step 1. description; serial ordering.

Table 21.Moves and steps analysis of non-functional specifications

According to the findings, **t**he genre in question consists of 3 moves, ordering information from general to more specific. The prevailing text type is description, followed by definition. The serial pattern for information ordering dominates.

5.4.6.6 Moves and steps analysis of manuals

Manuals have a wider application scope. They are aimed at not only outlining technical operations, but also at providing information for further reference and guiding a technical specialist while developing, testing or launching a technical application and a system or an end-user while using them.

Analysing the communicative aims of the discourse units used by the IT professional community in the sample, the following types of manuals have been revealed: user manuals, reference manuals, policies and procedures, training manuals, and operator manuals.

Their communicative aims are to detail an operation or a troubleshooting activity as well as train users in obtaining new skills. Additionally, they help to build customer satisfaction, reduce support, advertise product upgrades and facilitate smooth product launch. Since the previously analysed documents outline a software design process, user manuals will be analysed further. They are intended to support a user when applying software for business or entertainment purposes.

Moves and steps	**Examples**	**Rhetorical organisation**
Move 1. Establishing a territory Step 1. Providing background information (proprietary notes, table of contents, authorisation and review history, contact persons) Step 2. Stating the aim of the functionality.	Step 1. *** *and* ****proprietary rights are included in the information disclosed herein.* Step 2. *** *Marketing Module is a back-office system that has been developed for marketing team to monitor and manage* *** *marketing activity.*	Step 1. description; serial ordering; Step 2. description; serial and orbital ordering;

Move 2. Establishing a niche. Step 1. Defining key terms. Step 2. Outlining key processes and system non-functional requirements.	Step 1. *Interface is the layout of an application's graphic or textual controls in conjunction with the way the application responds to user activity.* Step 2. *The main aim of any marketing campaign is to attract new players, encourage and motivate existing users and, of course, increase casino profit and turnover.* *Casino and its Marketing Module support the following browsers:* • *Microsoft Internet Explorer versions starting from 6.0 SP2.* • *Mozilla Firefox versions starting from 1.5.x.*	Step 1. definition; serial and orbital ordering; Step 2. description; serial ordering.
Move 3. Occupying the niche Step1. Detailing activities, actions and tasks.	Step 1. *In case of successful registration, a message with activation link will be sent to the customer's e-mail.* *The reports are grouped into two categories:* • *Executive Summary reports provide information about profit/loss;* • *User Information reports provide information about Customers* *To log into the *** Back-Office system, follow the instructions below:* *1. Start an Internet browser. It is recommended to use Internet Explorer 6.0 SP2 or higher under Windows 2000/XP.* *2. Open the *** Back-Office login page using appropriate URL. This URL must be provided to you by your *** administrator. After that, the *** Login page will be open, as Figure 1 displays.*	Step 1. description; classification; instruction; hypothetical-real patterning, serial and orbital ordering.

Table 22. Move and step analysis of manuals

In comparison with the other genres selected for analysis, while having the same move structure, manuals have more varied text types, which is also related to the communicative aim. In addition to the definitions and descriptions observed in other genres, classifications and instructions are used when detailing the professional activities of performative character. Both serial and orbital information ordering is observed.

4.2.6.7. Move and step analysis of test strategy

Test strategy is the overarching document in software quality assurance and testing. It outlines a testing approach, techniques, tools and types of tests implemented in a certain project. It is usually devised by a testing team lead and addressed to test engineers and clients' representatives to provide a general overview of the software testing methodology and the management of the testing process.

Moves and steps	**Examples**	**Rhetorical organization**
Move 1. Establishing a territory Step 1. Providing background information (proprietary notes, table of contents, authorisation and review history, contact persons) Step 2. Stating the aim of the document.	Step 1. PREFACE 1.2 DOCUMENT' RESPONSIBLE CONTACT PERSONS 1.2 RELATED DOCUMENTATION 1.3 OPEN ISSUES 1.4 CHANGE HISTORY Step 2. *The document defines how the testing of the CTXM products games applications will be undertaken and managed by CTXM QA team.* *The purpose of the document is to provide a central artifact to govern the QA scope control of the test effort.*	Step 1. description; serial ordering; Step 2. description; serial and orbital ordering; .
Move 2. Establishing a niche. Step 1. Outlining key testing criteria and processes	Step 1. *Module functional tests are Out of QA scope for the Project.*	Step 1. description; serial ordering.

Move 3. Occupying the niche Step 1. Detailing testing criteria and processes.	Step 1. *According to Project Initiation Notes and to Client Acceptance Criteria, QA defines and prepares set of acceptance tests to run them to identify product compliance.*	Step 1. description; classification; serial and orbital ordering;

Table 23. Moves and steps analysis of test strategy

Similarly to the genres analysed above, a test strategy consists of 3 moves ordering information from general to more specific. The prevailing text type is description, followed by definition and classification. The serial pattern for information ordering dominates, which is also determined by genre communicative aim.

4.2.6.8. Move and step analysis of a test plan and test cases

A test plan consists of a set of test cases aimed at specific releases. It is aligned with functional and non-functional requirements, specifications and client acceptance criteria, which is also the case of genre recontextualisation. It is written by test engineers and in case of a bug, failure or change request is used by developers. Test cases in automated testing are generated by a testing tool/ software and are beyond the scope of the present study.

Moves and steps	**Examples**	**Rhetorical organisation**
Move 1. Establishing a territory Step 1. Providing a test case title	Step 1. *Logging into ***system*	Step 1. description; serial ordering.
Move 2. Establishing a niche. Step 1. Providing a brief test case description and data required	Step 1. *The test case simulates one of the actions undertaken by a broker on a daily basis.* *(Password) which is valid for the (username).*	Step 1. description; serial ordering.

Move 3. Occupying the niche Step1. Outlining steps to be reproduced and expected results.	Step 1. *Start logging in the system by invoking the application from the desktop icon.*	Step 1. description; instruction; serial ordering.

Table 24. Moves and steps analysis of a test plan and test cases

Although the genre in question is considerably smaller in volume, it also consists of 3 moves ordering information from general to more specific. The only text type is description and information ordering pattern- serial respectively. The test case is another vivid example of the manifesation of transational (ideational) language metafunction.

4.2.6.9 Moves and steps analysis of an incident/bug report

An incident report is created following a testing process if a failure or a bug have been identified. The genre is created by a test engineer and is addressed to developed for further fixing. It is a recontextualised version of a text case since significant amount of information is transferred from it and is embodied into a new form as a result of another subsequent discursive practice.

Moves and steps	**Examples**	**Rhetorical organization**
Move 1. Establishing a territory Step 1. Providing a problem title or a reference to a test case	Step 1. *CP service: the problem with debit/credit/void2 for blocked users on ewallet merchants*	Step 1. description;
Move 2. Establishing a niche. Step 1. Providing a problem summary	Step 1. **** Change service to allow transactions for blocked customers" was not implemented for ewallet merchants.*	Step 1. description; serial ordering.

Move 3. Occupying the niche Step 1. Outlining steps reproduced and discrepancy between expected and observed results.	Step 1. *<cak:amount>2</cak:amount>* *<cak:currency>EUR</cak:currency>* *</cak:amount>*	Step 1. description; instruction; serial ordering.

Table 25. Move and step analysis of an incident /bug report

4.2.6.10. Move and step analysis of a configuration management plan

According to the respondents in the sample, a configuration management plan governs software configuration process to ensure and maintain application and its components consistency and sustainability in different environments and at different lifecycle stages. Its addresser is the project manager or configuration managers, and the addressees are developers and test engineers.

Moves and steps	Examples	Rhetorical organization
Move 1. Establishing a territory Step 1. Providing background information (proprietary notes, table of contents, authorisation and review history, contact persons)	Step 1. *mark, status legend->not done.*	Step 1. description; serial ordering.
Move 2. Establishing a niche. Step 1. Defining key terms Step 2. Outlining components for configuration	Step 1. *Confluence is an enterprise Wiki located at https://confluence.***.com* Step 2. *Environments ***.***com Staging App*	Step 1. definition; serial and orbital ordering. Step 2. description; serial ordering.

Move 3. Occupying the niche Step1. Detailing a configuration process (conventions, coding styles, versioning and retrieval).	Step 1. *The Java programming language is used for project applications. Naming conventions and coding styles are taken in conformity with Code Conventions for the Java TM Programming Language (revised April 20, 1999).*	1. description, serial ordering.

Table 26. Move and step analysis of a configuration management plan

The genre in question consists of 3 moves, ordering information from general to more specific. The prevailing text type is description, followed by definition. The serial pattern for information ordering dominates. Repository configuration outlines configuration data in schemes and tables with surrounding text reduced to the minimum. Therefore, it is not subjected to moves and steps analysis represented above.

Report on bug fixes does not commonly provide a detailed procedure description since it reflects the discursive practice outlined in an incident report. As soon as the problematic issue is eliminated or fixed, the status is changed in the issue tracking system. It illustrates genre dynamism since report on bug fixes has become obsolete with the introduction of the electronic issue tracking system.

To summarise, the genres subjected to a move and step analysis have consistency in the move organisation irrespective of their size. All genres analysed contained three moves, i.e. establishing a territory, establishing a niche and occupying the niche, organising the information in the genre from more general to more specific, with a greater variety of steps. The nearly identical organisational structure may be explained by a high genre recontextualisation rate, i.e. a business need is converted into a technical solution, with further detailed systemic, functional and non-functional outline. Then, the software is designed adhering to specifications and functional and non-functional requirements with follow-up testing against these requirements and referring to them in the incident report. The incident/bug report is devised based on the specifications as well. The report on fixes is generated addressing the issues raised in the bug report. The empirical study proves that the whole or a part of the preceding genre in the chain is restructured and recontextualised and a subsequent one is created. The move and step structuration is directly dependent on the communicative events and professional practices they reflect, thus, genre being a mediation tool. The communicative events also determine text types,

the dominating being the description. Instructions are used when the discourse nature becomes performative, i.e induces the reader to an action. The information is mostly ordered in a serial way, the orbital is used mostly in definitions. Thus, it can be concluded that the discourse-linguistic features described above contribute to the manifestation of ideational and textual language metafunctions.

4.2.7. Textualisation of discourse

The subchapter illustrates the implementation of Trimble's framework of rhetorical functions and techniques (1985), Halliday's transitivity study (2004) and Halliday and Hasan's framework of cohesion (1976) in order to investigate the construal of the ideational and textual meanings. Trimble's (1985) framework enabled the author to trace the transition from discourse organisation to textualisation of lexico-grammar. In Hallidayan tradition (2004), transitivity theory unveils types of processes in terms of the grammatical patterning of the verb as process and participants involved in the process. Since the nature of the communicative events is either performative or descriptive, the verb representing the process is central to the reflection of events, hence this theory was chosen for the implementation. Halliday and Hassan's (1976) framework of cohesion enabled the author to account for the textual language metafunction and investigate the semantic ties that bind the document together and make it cohesive.

4.2.7.1 Textualisation of system architecture: construal of ideational and textual meanings

Level A rhetorical organisation was revealed above through the move and step analysis. According to level B rhetorical organisation, the system architecture is composed of three sections, the first providing the background information of the document, its aim and and the glossary, the second section states the aim of the system and provides its general outline, the third section contains detailed system descriptions from different view points. The characteristic feature of this document is the abundance of graphs and charts, which ensure the graphic system representation and reduces the amount of text. Each graph or diagram is accompanied by a text, describing the relations of the components in the system. Surprisingly, not many references have been encountered to relate the description and the visual. However, the coherence is achieved by a physical text layout, not by linguistic means singling out a graph or a diagram and its

description into a separate sub-section. As the communicative aims of level A suggest, the recurrent text types are descriptions and definitions.

The examples of the rhetorical organization at level C are illustrated below:

- **Descriptions** *(e.g. It is intended to capture and convey the significant architectural decisions which have been made on the system.)*
- **Definition** *(e.g.Task Operational Data Storage – a centralized task storage base, which contains replicas of data from both MS PJS and JIRA sides.)*
- **Visual-verbal relations** *(e.g. Business processes of *** and *** companies may be represented by the following scheme.)*

As moves and steps and rhetorical analysis showed, the verb representing the process is central to the construal of events. In Hallidayan tradition (2004) transitivity theory unveils types of processes in terms of the grammatical patterning of the verb as process and participants involved in the process. Halliday distinguishes material, mental and relational processes as **central** and behavioural, verbal and existentional as **borderline**. The author identified the most recurrent verbs used in system architecture documents using Word List application to investigate the types of processes further. The choice of the theory was driven by empirical considerations, hence it is reflected in this chapter.

4.2.7.2. Quantitative focus: the verb frequency distribution in system architecture

In order to calculate the frequency of the selected linguistic features, the author of the thesis used Oxford Wordsmith Tools 6.0 to create word lists. Prior to text processing, the files were converted to plain text (.txt). The word lists reflected the token, its ordinal number, frequency, percentage and the number of texts in which it was encountered. The author has retrieved the first four parameters for further investigation. If required, Concordance was used to identify the local linguistic context of the item in question.

The table below represents the verb frequency distribution used in system architecture:

N	word	frequency	%
8	Is	257	1.52
13	Be	140	0.83
15	Are	129	0.76
28	Can	74	0.44
37	Will	58	0.34

47	Used	42	0.25
53	Reporting	39	0.23
62	Provides	34	0.20
72	Processing	31	0.18
98	Based	25	0.15
102	Required	24	0.14
107	Provide	23	0.14

Table 27. The verb frequency distribution used in system architecture

Although the verb *to be* and its tense aspect forms are most frequently used, the Concordance extract below proves that it forms the agentless passive voice to express material processes. The passive voice is abundantly applied to attract the primary attention to the action, not the agent. The subsequent process to observe is relational, which is used to describe system components and characteristics.

N	Concordance
6	. 1.2.3. Effort reporting Effort accounting is one of key functions of the integrated
7	in one or a few data centers. ALE is the technological basis for the
8	of distributed SAP systems. ALE is the technological basis for the
9	are not always possible to apply to an IS system. Therefore, a separate setup
10	for overall company processes analysis is significantly limited by poor
11	, it is a single point of failure, and is therefore subject to high-availability
12	software solutions is useful and is presented here as the foundation for
13	exists in Quote Tracker. New API is provided by ODS-P team to perform
14	The technical infrastructure for SAP APO is based on the SAP R/3 architecture (an
15	email messages. This approach is already used in Quote Tracker for
16	effort. • The SAP architecture is based on distinct tiers for user
17	as for archive management. Archiving is aimed to keep data available to the
18	production. This business area is a very complex part of SAP R/3,
19	Stage of baseline if new baseline is created and become active. Close

Figure 13. Concordance display of the verb *is*

The verb *be* is colligated with the modal verbs *can* and *should* or future auxiliary *will* to show a different degree of certainty, expectation or assurance in a future fact forming a stance. The concordance displays below exemplify the use of the modal verbs in colligation with copula *be* to form the passive voice, demonstrating a similar trend as above with the tense aspect form *is*.

N	Concordance
4	application instance, of which there can be many in one single SAP system.
5	database,e ven the Central Instance can be moved off onto an SAP R /3
6	Development and Test /QA systems can be combined on one server. This is the
7	application servers per component can be extended accordingly. Separate
8	systems with small databases. It can be on different OS and HW platform,

N	Concordance
106	accordingly. Separate servers need to be added for SAP APO (liveCache) and
107	working on (as offer team member) will be handled by iOTR process in coming
108	Content, on the other hand, will be enhanced on a regular basis. SAP BW

N	Concordance
55	. Three groups of reports may be differentiated: * Accounting related
56	. For smaller installations, SAP BW may be executed together with the database
57	CPU and memory utilization, so it must be accounted for on the server(s) that is
58	of large data sets—all of the data must be accessed for each analysis or report,
59	when huge amounts of data must be analyzed. In addition to an

Figure 14. Concordance display of the verb *to be* colligated with modal verbs

4.2.7.3. Natural orders, logical patterns and cohesion

According to Trimble's framework described in the theoretical part, the following natural orders, i.e. time order, space order, causality and result and logical orders, i.e. order of importance, comparison and contrast and exemplification will be investigated below.

Time and space orders are not common linguistic features for the present genre since the communicative aim of the present document is to provide a general overview of the system architecture, which is not bound to a particular time frame or place. Hence, the following time and space order examples have been found:

N	Word	frequency	%
363	Now	8	0.05
579	Then	5	0.03
2324	Today	1	

Table 28. The frequency distribution of the lexico-grammatical features of time order used in system architecture

N	Word	frequency	%
90	THERE	27	0.16
648	HERE	4	0.02
1469	BELOW	1	

Table 29. The frequency distribution of the lexico-grammatical features of space order used in system architecture

However, when the use of *there* was investigated through Concordance, it turned out that all instances exemplified introductory existential *there* without a direct reference to space and the examples are outlined in the figure below.

N	Concordance
1	payment transactions. In addition, there are analyzers for portfolio
2	exchange master data by ALE. There is a potential risk of corrupting
3	logically separate systems, although there may be fewer physical servers.
4	computer. The SAP Kernel Architecture There are two important terms to
5	of the Central Instance. Because there is only one CI possible per SAP

Figure 15. Concordance display of existential *there*.

Causality and result

The results from the Word Search demonstrate a scarce use of causality and result conjunctions due to the descriptive nature of the communicative event. Their frequency distribution is outlined in the table below.

N	Word	frequency	%
16	AS	129	0.76
148	SO	18	0.11
150	BECAUSE	17	0.10
214	THEREFORE	13	0.08
563	RESULT (AS A RESULT)	5 (2)	0. 03 (0.01)
2235	SINCE	1	

Table 30. The frequency distribution of the lexico-grammatical features of causality and result pattern used in system architecture

The conjunction *as* demonstrates high frequency in comparison to the results represented above, however, Concordance display shows the instance of its use, not only to express causative, but also additive and temporal relations as well as comparison.

N	Concordance
1	for SAP SEM configurations: 1. As a stand-alone application. The SAP
2	from one or more SAP R/3 systems. 2. As a data mart linked with an existing
3	R/2 customers to migrate to SAP R/3 as soon as possible. SAP R/3 4.6C is
4	(DRP) were executed in SAP R/3. As the planning process was extended
5	both types of work: ongoing activities as well as projects (e.g. to implement a
6	, increase effort reporting accuracy and as a result increase data quality used in
7	many new business applications as part of the mySAP.com initiative. The

Figure 16. Concordance display of the conjunction *as*

Logical patterns

No linguistic means were identified to sequence the ideas or present them in the order of importance. To achieve text logical organization, graphical means are used, i.e. the processes or events are numbered, bulleted or organized into a flowchart.

Comparison and contrast

This pattern is used to compare and contrast the components of system architecture. Most frequently used linguistic items are a subordinate conjunction and a preposition *like,* conjunctions and discourse markers *however* and *although* conjunction *as*, adjectives *the same* and *similar,* since they allow for the factual comparison of two related components or processes.

N	Word	Frequency	%
16	AS	129	0.76
56	HOWEVER	37	0.22
213	SAME	13	0.08
234	BUT	11	0.07
248	LIKE	11	0.07
332	ALTHOUGH	8	0.05
709	SIMILAR	4	0.02

Table 31. The frequency distribution of the linguistic means of comparison and contrast patterns used in system architecture

The results do not demonstrate high variation due to the specificity of the communicative aim, i.e. to describe the system composition not to compare or contrast. A significant observation

is that the value of the conjunction as is relative, since it reflects temporal and causal relation in addition to comparison as it was described above. Interestingly, in all 11 instances of use lexeme *like* is used as a conjunction and a preposition only, serving solely the function of comparison.

Exemplification

Exemplification is expressed only using the noun *example* in 15 cases. It might be explained with the fact that most examples are presented graphically as visual aids. In 11 instance of 15 the collocation *for example* is used.

N	Word	Frequency	%
172	EXAMPLE	15	0,09

Table 32. The frequency distribution of the lexico-grammatical features of exemplification pattern used in system architecture

N	Concordance
1	Architecture Overview Figure 1-4 Example of a Three-Dimensional Infocube
2	. Explain the term server and provide an example of server-based processing;
3	explain the term client and provide an example of client-based processing. A
4	don't require an online response, for example, data loading from a file. •
5	enable the tight integration needed. For example, the SAP APO Plug-In, also

Figure 17. Concordance display of the noun *example*

Illustration

This pattern does not contain any vivid linguistic means, considering the amount of diagrams, flowcharts and figures pertinent to this genre. It might be explained with the fact that the system components and processes are organized in sub-sections with the appropriate title (e.g. *a process flow view*) and the description below and above. The frequency distribution of the located linguistic means is outlined below in Table 33.

N	Word	Frequency	%
1256	REFERENCE	2	0,01
1824	ILLUSTRATES	1	

Table 33. The frequency distribution of the lexico-grammatical features of illustration pattern in system architecture

Cohesion

As it was outlined in subchapter 3.3.3.2, cohesive devices are semantic ties that make a text unified. Implementing Halliday and Hasan's (1976) framework of cohesion for analysis, most frequently used means of cohesion were endophoric and exophoric references and conjunctions, the other being complimentary. The frequency of the linguistic means contributing to cohesion is outlined in Table 34 below. It has been compiled including 10 most frequent means of cohesion and the ones that have not been considered above. Causal conjunctions, comparative reference and cataphoric reference (below) have not been included since they were outlined and analysed above in causality and result, comparison and space order sections respectively.

N	Word	Frequency	%	Cohesive device
1	THE	861	5.10	anaphoric reference
3	AND	469	2.78	Additive conjunction
16	AS	129	0.76	Causal, temporal conjunction or comparative reference
23	OR	96	0.57	Additive conjunction
31	THIS	68	0.40	Demonstrative reference
36	THAT	64	0.38	Demonstrative reference
104	ITS	23	0.14	Personal reference
138	THEIR	19	0.11	Personal reference
139	ALSO	18	0.11	Additive conjunction
148	SO	18	0.11	Causal conjunction
150	BECAUSE	17	0.10	Causal conjunction
1205	ONES	2	0.01	Nominal substitution
1124	SPECIFICATIONS	2	0.01	Exophoric (intertextual) reference

1269	REQUIREMENTS	2	0.01	Exophoric (intertextual) reference

Table 34. The frequency distribution of the means of cohesion in system architecture

Table 34 shows that anaphoric reference manifested by the definite article *the* is by far the most frequently used cohesive device in systems architecture, occurring almost two times as frequently as additive conjunction *and*. It is followed by the causal and temporal conjunction or a comparative reference *as*, depending on the local linguistic context in which it occurs. Demonstrative reference manifested by the pronouns *this* and *that* occupies the fifth and the sixth position respectively. Other means are almost evenly distributed. The least common linguistic means are nominal substitutions and exophoric (manifest intertextual) references, which constitute two instances each. Ellipsis has not been identified in the genre in question. The scarce use of substitutions, intertextual references and the absence of ellipsis might be explained by the fact that the communicative aim of the document is to outline systems components and their views focusing on clarity since it will be further readdressed in the process of other genre creation (recontextualisation), e.g. systems requirements, functional and non-functional specifications.

To summarise, the results of the discourse analysis of systems architecture point out the varied nature of professional discourse and outline the lexico-grammatical means that contribute the construal of ideational (transactional) and textual meanings. Following moves and steps analysis by Swales (1990), the author has undertaken Trimble's (1985) rhetorical organisation analysis. In particular, the analysis has shown that the recurrent rhetorical functions of systems architecture are descriptions, defintions and visual verbal relations. Hence, the verb representing the process is central to the construal of events. Transitivity theory (Halliday 2004) reveals the types of processes in terms of the grammatical patterning of the verb as process and participants involved in the process based on the semantic meaning of the verb. The empirical findings demonstrate that material and existential processes are used more frequently than others, which is related to the communicative purposes of the genres in question and their constituent moves.

Applying Trimble's (1985) framework further and investigating natural and logical orders, the findings demonstrate that time and space orders are scarcely represented in the present genre since the general overview of the system architecture, which is not bound to a particular time frame or place. The linguistic features of the causality and result, comparison and contrast and exemplification patterns do not show high variation either. Although the genre

contains numerous visual aids (diagrams, figures and process flowcharts), there is no constant linguistic relation between the text and the image, yet it is achieved with the help of physical layout, i.e. the system components and processes are organized in sub-sections with the appropriate title (e.g. *a process flow view*) and the description below and above.

Last, but not least, Halliday and Hasan's (1976) framework of cohesion has been integrated and the findings reveal that references and conjunctions are most frequently used to contribute to cohesion in descriptions. Ellipsis and substitution are sparse to avoid the ambiguity.

4.2.7.4. Textualisation of systems requirements, functional and non-functional specifications: construal of ideational and textual meaning

This subchapter outlines the analysis of lexico-grammatical features recurrently met in systems requirements, functional and non-functional specifications. They have been grouped together for analysis since they belong to the same colony of informative genres in software development process with greater detailing of a professional activity, system, product, application or a functionality than systems architecture.

4.2.7.5. Rhetorical functions

Similarly to systems architecture, level A rhetorical organisation of genres in question was revealed above through moves and steps analysis. According to level B rhetorical organisation, the systems requirements, functional and non-functional specifications consist of three sections, the first providing the background information of the document and its aim or the aim of the system; the second section outlines the system components and environment, the third section contains detailed application features and behavior. As the communicative aims of level A suggest, the recurrent text types are descriptions and definitions.

The examples of the rhetorical organization at level C are illustrated below:

- **Description** *(e.g. This document describes the use of *** system that has been designed and developed to support the loading, reporting and analysis of ***.)*
- **Definition** *(e.g. Account login name (username) is merchant's external ID for each customer (for some merchants serves as internal ID as well).)*

The significant lexico-grammatical feature manifested in the rhetorical functions of descriptions and definitions is verb patterns, therefore, the transitivity theory is applied further (Halliday 2004). The verb frequency distribution is outlined in Table 35 below:

N	Word	Frequency	%
7	IS	393	1.25
24	ARE	172	0.55
29	PENDING	147	0.47
34	BE	125	0.40
50	RETURNS	97	0.31
51	USE	97	0.31
69	RESERVED	79	0.25
72	DISPLAY	77	0.24
73	SELECTED	77	0.24
76	SHOULD	73	0.23
88	WILL	64	0.20
91	HAS	62	0.20

Table 35. The verb frequency distribution used in system, functional and non-functional requirements.

The verb *to be* and its tense aspect forms demonstrate the highest frequency and, similarly to system architecture, form agentless passive to express material processes or relational processes. The former reflects the change done to the application and its components in the process of use, the latter provides the decription and characteristions of the functionality of the application. (As shown in Concordance extract below).

N	Concordance
6	3. Conducts Back-up procedure; 4. Is responsible for DP run and install
7	maintains the Deployment Calendar; 5. Is responsible for all Client's issues
8	account or test account. Test account is an account created for testing

N	Concordance
11	menu Preconditions: The Actor is logged into the MI Loader Post
12	Management" functionality the actor is navigated back to the recent workflow
13	flow#1 Preconditions: The Actor is logged into the MI Loader Application
14	should check that desired effect actually is applied correctly. 8.1.2 Payout Tables
15	for Coeffiecient and Win Amount is copied from animation sample

N	Concordance
69	reserved 1. PREFACE This document is a functionality specification of the

Figure 18. Concordance display of the verb *is*

When used in the infinitive form the verb *be* demonstrates a similar trend as in systems architecture and colligates with modal verbs future auxiliary to express different degrees of possibility, expectations, obligations and future facts (especially in the first conditional form). Other verbs (pend*, return*, use, reserve*, display*) contribute to the formation of material processes.

4.2.7.6. Natural orders, logical patterns and cohesion

Considering the communicative aims of the genres in question, the following natural orders, i.e. time order, space order, causality and result and logical orders, i.e. order of importance, comparison and contrast and exemplification will be investigated below.

Time and space orders are not common linguistic features for the present genre since the communicative aim of the present document is to provide a general overview of the system architecture, which is not bound to a particular time frame or place. Hence, the following time and space order examples have been found:

N	Word	Frequency	%
32	LAST	132	0.42
49	TIME	99	0.31
56	PERIOD	88	0.28
82	AFTER	66	0.21
96	WHEN	60	0.19
1 136	NOW	9	0.03

Table 36. The frequency distribution of the lexico-grammatical features of time order used in system, functional and non-functional requirements.

N	Word	Frequency	%
114	DOWN	51	0.16
124	UP	50	0.16
179	BELOW	34	0.11
284	THERE	21	0.07

Table 37. The frequency distribution of the lexico-grammatical features of space order used in system, functional and non-functional requirements

The variation of the lexico-grammatical means to express time order is higher than in system architecture, which may be explained by the length of the documents and the nature of

descriptions which illustrate how a system or a functionality behaves in certain conditions over a certain period of time. Most recurrently encountered linguistic means to express time order are the adjective *last,* abstract nouns *time, period,* the preposition *after*, conjunction *when*, adverb *now* and others.

The variation of space order is also higher than in system architecture and is represented through nouns, prepositions and adverbs. Having analysed the local linguistic context, the search results have to be further refined since Concordance search revealed that lexeme *down* is used not only as a preposition of place, but also as a particle in phrasal verbs and a part in compound nouns. Lexeme *there* was used as both the adverb of place and introductory existential *there*. The examples are outlined in the Concordance display below.

N	Concordance
47	(default value – All); • Currency Code drop-down list (default value – All); •
48	are in pixels. Positive values moves down, negative up. // Time in frames.
49	(move them left, right, up or down). var LINE_COUNT = 9; Indicates
50	(move them left, right, up or down). var LINE_COUNT = 9; Indicates
51	frames with following labels: up, over, down, dis. Each frame should have

N	Concordance
6	the appropriate Jira issue to verify if there is TECHADM jira fulfilled with
7	, when winning combination is met. There should be one box for each color

Figure 19. Concordance display of the linguistic means of the space order

Causality and result

The results from the Word Search demonstrate a scarce use of causality and result conjunctions due to the descriptive nature of the communicative event. Their frequency distribution is outlined in the table below.

N	Word	Frequency	%
118	AS	115	0.36
162	BECAUSE	7	0.02
1601	THEREFORE	5	0.02
1671	SO	4	0.01
1782	THEREOF	3	

Table 38. The frequency distribution of the lexico-grammatical features of causality and result pattern used in system, functional and non-functional requirements

The causality and result pattern is most frequently represented through subordinate conjunctions. The conjunction *as* demonstrates high frequency in comparison to the other results represented above, however, Concordance display shows the instance of its use, not only to express causative, but also additive and temporal relations as well as comparison and exemplification. The frequency of the other conjunctions is not high since the causal relations are not typical of the present genre.

Logical patterns

No linguistic means were identified to sequence the ideas or present them in the order of importance. To achieve text logical organization, graphical means are used, i.e. the processes or events are numbered or bulleted.

Comparison and contrast

This pattern is used to compare and contrast the components of an application, functionality or their components. Most frequently used linguistic items are a subordinate conjunction and a preposition *like,* conjunctions and discourse markers *however* and *although*, the conjunction *as*, adjectives *the same* and *similar,* since they allow for the factual comparison of two related components or processes.

N	Word	Frequency	%
118	AS	115	0.36
372	SAME	15	0.05
378	BUT	14	0.04
556	LIKE	8	0.03
1232	HOWEVER	2	
1428	ALIKE	1	

Table 39. The frequency distribution of the linguistic means of comparison and contrast patterns used in system, functional and non-functional requirements

The results do not demonstrate high variation due to the specificity of the communicative aim, i.e. to describe the functional and non-functional requirements of a system, application or functionality not to compare or contrast. The conjunction *as* expresses not only causal, but also temporal relations, comparison and exemplification.

Exemplification

Exemplification is expressed only using the conjunction *as* in 21 cases out of 118, forming the collocation *such as* and the noun *example* in 15 cases, forming the collocation *for example* in all instances. Low frequency might be explained by the fact that the factual information is conveyed and all feasible scenarios are investigated. Exemplification is used to move from more general to more specific at a clause level or to specify a superordinate.

N	Word	Frequency	%
37	AS	198	0.45
564	EXAMPLE	17	0.04

Table 40. The frequency distribution of the lexico-grammatical features of exemplification pattern used in system, functional and non-functional requirements

N	Concordance
182	. • Product – a product category, such as 'XG Games', to display the report
183	are classified into various types, such as 'Single Event Sport Games', 'Multiple
184	if particular Affiliate Name is typed as a filtering parameter. In others cases

Figure 20. Concordance display of the linguistic means of exemplification and comparison patterns

Cohesion

In the present genres most frequently used means of cohesion were endophoric, exophoric references (items of situational context like reports, games and affiliates, when the discursive practice was described) and conjunctions, the other being complimentary. The ellipsis and substitution have not been encountered at all, for instance when a Concordance search of the lexeme *one* was undertaken, the findings revealed that it has been used only as a numeral, not the indefinite pronoun to account for the nominal substitution. The frequency of the linguistic means contributing to cohesion is outlined in table 41 below. It has been compiled including 10 most frequent means of cohesion and the one that have not been considered above.

Most frequently used means of reference is the definite article, serving as anaphora in most cases, demonstrative reference manifested through pronouns *this* and *that* and conjunctions. The data were further refined and Concordance investigation revealed that in 66 examples *that* is used as a relative pronoun, not a demonstrative one introducing a relative clause. Additive conjunctions (*and, or*) prevail over comparative (*as, than*), temporal (*as*) and causal (*because*). Adversative conjunction however is used least. The findings may be interpreted relating the

obtained data to the communicative aims of the genre, i.e. to outline the features of an application and a functionality, hence the additive conjunctions dominate. The manifest intertextual relations are traced to business requirements and systems architecture. Namely, 6 instances of business requirements mentioning out of 13 have been identified through Concordance search and all the identified cases of architecture mentioning refer to systems architecture. The manifest intertextual relations are present due to the interrelation of discursive practices, i.e. business requirements outline the business need of a customer, which is further recontextualised into a technical solution (i.e. systems architecture) with the detailed description of its functional application (functional requirements) and environment (non-functional functional requirements.

N	Word	Frequency	%
2	THE	1949	4.42
11	THIS	476	1.08
14	AND	425	0.96
37	AS	198	0.45
51	THAT	152	0.35
62	OR	133	0.30
70	IT	126	0.29
212	THAN	37	0.08
572	BECAUSE	8	0.02
1192	HOWEVER	2	

Table 41. The frequency distribution of the means of cohesion in system, functional and non-functional requirements

N	Word	Frequency	%
7	REPORT	794	1.80
10	GAME	488	1.11
136	AFFILIATE	66	0.15

Table 42. The frequency distribution of the means of exophoric references in system, functional and non-functional requirements

N	Word	Frequency	%
452	REQUIREMENTS	13	0.03
802	ARCHITECTURE	5	0.01

Table 43. The frequency distribution of the means of manifest intertextual relations in system, functional and non-functional requirements

To summarise the obtained results, the discourse analysis of three genres (system, functional and non-functional requirements) have been conducted together since they belong to the same colony of informative genres in the IT domain, proving a different degree of detailed information on system, system components their behavior and interaction. Further to moves and steps analysis by Swales (1990), the author has undertaken Trimble's (1985) rhetorical organisation analysis. In particular, the analysis has shown that the recurrent rhetorical functions of the genres under study are descriptions and definitions. Hence, the verb representing the process is central to the construal of events. Similarly to the DA of systems architecture, transitivity theory was applied and the findings revealed that material and existential processes are used more frequently than others, which is related to the communicative purposes of the genres in question and their constituent moves.

Applying Trimble's (1985) framework further and investigating natural and logical orders, the findings demonstrate that time and space orders demonstrate higher variation and frequency that systems architecture, which may be explained by the size of the corpus for the analysis and greater level of system, application and functionality detailing.. The linguistic features of the causality and result, comparison and contrast and exemplification patterns are scarcely represented, which may also be related to the descriptive character of the discursive practice underlying the genres under study. Last, but not least, Halliday and Hasan's (1976) framework of cohesion has been integrated and the findings reveal that references and conjunctions are most frequently used to contribute to cohesion in descriptions. Ellipsis and substitution are sparse to avoid the ambiguity. Manifest intertextual relations are identified and belong to the preceding genres (business requirements and systems architecture), which highlights the significance of the situational context modeling for discourse and genre analysis.

4.2.7.7. Textualisation of manuals: construal of ideational and textual meaning

Level A rhetorical organisation was revealed above through moves and steps analysis. Accordind to level B rhetorical organisation, the manuals are divided into introductions/prefaces or general rules and terms with the general rhetorical functions to set the context, state the purpose, establish contact with the audience; bodies to present the information on systems, their

functions and operations, state the problem and propose solutions and endings serving to presenting contact information. In operational manuals, the last section is usually not present. The quantitative study will focus on operational manuals since they belong to the genre chain in question. The addresser of manuals is any technical specialist. i.e. a software developer of a test engineer, the addressee being either an external system user or another technical specialist.

Level C rhetorical organisation

The following specific rhetorical functions were identified in all documents:

- **descriptions** *(e.g. This service will pass customer registration request to WHL PG application, where it will be processed. After registration in WHL PG, the same customer should be registered in WHLS. In case of successful registration, a message with activation link will be sent to the customer's e-mail.)*
- **definitions** *(e.g. This is a service for customer account activation. It is initiated by activation URL that is sent to a new customer by e-mail.)*
- **classifications** *(e.g. The reports are grouped into two categories:*
  - *Executive Summary reports provide information about profit/loss;*
  - *User Information reports provide information about Customers.)*
- **instructions** *(e.g. To log into the WHL Back-Office system, follow the instructions below:*
  1. Start an Internet browser. It is recommended to use Internet Explorer 6.0 SP2 or higher under Windows 2000/XP.
  2. Open the While Label Back-Office login page using appropriate URL. This URL must be provided to you by your WHLS administrator. After that, the WHLS Login page will be open, as Figure 1 displays. (direct)
- **visual-verbal relationships** *(e.g. refer to table 3.2, as Figure 1 displays)*

The frequency of the lexico-gramatical means of visual-verbal relations is not high despite the abundance of screenshots. The closer exploration of manuals revealed that very often exemplification is used to connect the screenshot and its description.

The manifestation of functions of descriptions, definitions, classifications and instructions is unveiled through the verbal pattern, therefore, the transitivity was applied and the quantitative findings are available in the table below.

N	Word	Frequency	%
6	IS	460	1.61
10	BE	280	0.98
33	RESERVED	137	0.48
35	CLICK	136	0.48
36	SELECT	136	0.48
37	ARE	131	0.46

44	CAN	115	0.40
45	ADD	114	0.40
48	WILL	112	0.39
74	USED	71	0.25
77	SEE	69	0.24
82	SET	65	0.23

Table 44. The verb frequency distribution in manuals

The concordance investigation of the verb *is* revealed that its common instances of use are the passive voice forming material processes, and the copula between the subject and the predicate to express relational processes in descriptions and definitions and existential ones if they are introduced by introductory there. Other verbs form materials processes. The verb *see* contributes to the creation of mental processes.

The linguistic means of the hypothetical-real pattern are represented in table 44 below.

N	Word	Frequency	%
58	IF	95	0.33
216	CASE	32	0.11

Table 45. Frequency distribution of the hypothetical real rhetorical pattern.

Concordance display below exemplifies the local linguistic context of the hypothetical real rhetorical pattern.

Figure 21. Concordance display of the hypothetical-real rhetorical pattern

The hypothetical-real pattern is manifested through the use of zero and first conditionals. In terms of frequency, the lexemes if and case are the 58th and 216th accordingly. Other lexico-grammatical means, (e.g. on condition, supposing, supposedly, unless) have not

been found, which can be explained by attempts to achieve clarity to ensure a precise reflection of a communicative event.

Time and space

The table below illustrates the frequency distribution of the lexico-grammatical means to express time and space orders.

N	Word	Frequency	%
9	DATE	296	1.04
22	LAST	169	0.59
79	WHEN	68	0.24
87	PERIOD	62	0.22
107	BELOW	52	0.18
139	AFTER	39	0.14
124	DOWN	43	0.15
192	THERE	27	0.09

Table 46. The frequency distribution of the linguistic means of the time and space pattern in manuals

Interestingly, the linguistic means of the time pattern demonstrate higher frequency than those of place order. Concordance display revealed that the noun *date* prevails since there are various versions of software release adherent to particular dates and the software application for which the manuals have been written contains operations with the field called date.

Causality and result

N	Word	frequency	%
50	AS	101	0.35
870	SO	3	0.01
879	THEREFORE	3	0.01
1124	THEREOF	2	

Table 47. The frequency distribution of the linguistic means of the causality and result pattern in manuals

The variation of the linguistic means to express the causality and result patterns is not very high either, which is explained by the communicative aims of the genre in question, i.e. to describe operational circumstances and guide a technical specialist or a user, not to show the

cause and effect of the activities, actions and operations. Interestingly, the conjunction *because* was not represented in the sample at all.

Comparison and contrast

The table below outlines the frequency distribution of the linguistic means of the comparison and contrast patterns.

N	Word	frequency	%
272	THAN	18	0.06
373	BUT	11	0.04
408	SAME	10	0.04
778	LIKE	3	0.01
1356	HOWEVER	1	

Table 48. The frequency distribution of the linguistic means of the comparison and contrast pattern.

The concordance search revealed that in 50 % of cases (9 instances) the comparison pattern is used together with the hypothetical-real pattern to describe the circumstances of actions. The comparison pattern is used considerably more often than the contrast for the same reason, i.e. to describe and compare the circumstances of use of an application or a functionality.

N	Concordance
7	. If the amount returned is greater than the amount staked then there is
N	Concordance
15	list. This option is obligatory if more than one criteria are specified for a

Figure 22. Concordance display of the comparison and hypothetical-real pattern

Exemplification

The table below lists the linguistic means of the exemplification pattern.

N	Word	frequency	%
270	SUCH	18	0.06
511	EXAMPLE	12	0.04

Table 49. The frequency distribution of the linguistic means of the exemplification pattern.

The concordance investigation of the lexeme *such* showed that to express exemplification it is used in collocation such as in 30% of the collected examples (6 instances). The collocation *for example* is very often used together with the screenshot to illustrate the operations on the screen.

Cohesion

Table 50 represents the linguistic means of cohesion which are recurrently used in manuals.

N	Word	frequency	%
2	THE	1344	4.72
19	THIS	183	0.64
23	OR	169	0.59
8	AND	357	1.25
43	THAT	118	0.41
50	AS	101	0.35
79	WHEN	68	0.24
373	BUT	11	0.04

Table 50. The frequency distribution of the linguistic means of cohesion

According to the aggregated results, most frequently used means of cohesion are exophoric (reference to other products of the company, equipment and technology brands etc), esphoric reference (typical of definitions) and endophoric reference. The use of the definite article and the demonstrative pronoun *this* signposts anaphoric reference**,** adverb *below* (listed in space order section) indicates to cataphora. The Concordance search that lexeme *that* is mostly used a relative pronoun not the demonstrative one. 5 instances of the collocation *after that* were identified, serving to express temporal sequential purposes. Ellipsis and substitution are not present on this genre. Other recurrently encountered means of cohesion are additive (and, or), temporal (when, as), causal (as) and adversative (but) conjunctions, adversative represented least.

To summarise, the results of the discourse analysis indicate that manuals have the higher variation of rhetorical function, i.e. description, definition, instruction, classification, hypothetical-real patterns and visual-verbal relationship, which, however, does not result in the high variation of linguistic means to manifest them. Since the verb representing the process is central to the construal of events in at least four rhetorical patterns, transitivity theory was applied and the findings revealed that material, relative, mental and existential processes are used

more frequently than others, which is related to the communicative purposes of the genres in question and their constituent moves. The nature of the communicative event is performative since the addressee should execute certain operations under certain conditions and circumstances. Hence, hypothetical-real pattern, which is sometimes used together with exemplification, is topical for this genre. The means of cohesion are not very much varied, i.e. references and conjunctions are used most, the prevailing grammatical means being the definite article. Manifest intertextual relations are not typical of this genre since it is related to the product and its instances of use rather than preceding genres, which could be identified only through the analysis the situational context preceding discourse and genre analysis.

4.2.7.8.Textualisation of testing documentation (test strategy, test plan, test cases and incident/bug reports)

This subchapter provides the analysis of lexico-grammatical features recurrently met in software testing documentation. They have been grouped together for analysis since they belong to the same colony of informative genres in software testing process with greater detailing of a professional activity, i.e. testing process and possess the same rhetorical organization, with descriptions being the dominating rhetorical patterns at all levels except for the lowest level where both descriptions and instructions are used.

Table 51 shows the verb frequency distribution in types of processes to illustrate the construal ideational meaning in the rhetorical patterns of descriptions and instructions.

N	Word	Frequency	%
10	IS	855	1.08
19	SEE	455	0.57
26	ARE	316	0.40
27	BE	311	0.39
32	SHOULD	252	0.34
54	CAN	200	0.25
73	FIX	149	0.19
74	TESTED	148	0.19

Table 51. The verb frequency distribution in types of processes

The concordance investigation of the verb *is* revealed that its common instances of use are the passive voice forming material processes, and the copula between the subject and the

predicate to express relational processes The verb *see* contributes to the creation of mental processes and is mostly used in instructions for referencing to a faulty component.

N	Concordance
26	3 Months" -> "Corrections" Application is selected after double-click on YSPD
27	such modern art Who should approve- is it acceptable- if messages look like
28	, 'XG', 'Arcades', 'Marketing' "Arcades" is missed, need add 2. Available values:

Figure 23. Concordance display of the verb *is*.

Natural orders, logical patterns and cohesion

Considering the communicative aims of the genres in question, the following natural orders, i.e. time order, space order, causality and result and logical orders, i.e. hypothetical-real and exemplification will be investigated below.

The linguistic means of time and space orders do not show high variation since the communicative aim of the documents is to provide a general overview of the testing process, and outline its detailed procedure which is not bound to a particular time frame or place. Hence, the following time and space order examples have been found:

N	Word	Frequency	%
47	WHEN	215	0.27
48	AFTER	210	0.27
109	THERE	120	0.15
129	PLACE	105	0.13

Table 52. The frequency distribution of the lexico-grammatical features of time and space orders used in software testing documentation.

Causality and result

The results from the Word Search demonstrate a scarce use of causality and result conjunctions due to the descriptive nature of the communicative event. Their frequency distribution is outlined in the table below.

N	Word	Frequency	%
49	AS	425	0.54
333	SO	41	0.05
338	BECAUSE	34	0.004

Table 53. The frequency distribution of the lexico-grammatical features of causality and result pattern used in software testing documentation.

The causality and result pattern is most frequently represented through subordinate conjunctions. The conjunction *as* demonstrates high frequency in comparison to the other results represented above, however, Concordance display shows the instance of its use, not only to express causative, but also additive and temporal relations as well as comparison and exemplification. The frequency of the other conjunctions is not high since the causal relations are not typical of the present genre.

Logical patterns

No linguistic means were identified to sequence the ideas or present them in the order of importance. To achieve text logical organisation, graphical means are used, i.e. the processes or events are numbered or bulleted.

Comparison, contrast and hypothetical-real patterns

This pattern is used to compare and contrast the instances of the testing process against the requirements. The hypothetical- real pattern is used to relate the expected and the observed results of the testing process.

N	Word	Frequency	%
35	IF	262	0.33
37	BUT	242	0.31
49	AS	219	0.57
299	THAN	47	0.06
307	SAME	46	0.06

Table 54. The frequency distribution of the linguistic means of comparison, contrast and hypothetical-real patterns used in software testing documentation.

The results do not demonstrate high variation due to the specificity of the communicative aim, i.e. to describe the testing process and the behavior of a system, application or functionality under certain circumstances not to compare or contrast. The conjunction *as* expresses not only comparative, but also exemplification, temporal and causal relations.

To conclude, the results of the discourse analysis indicate that software testing genres have the lowest variation of rhetorical organisation, i.e. description, instruction, hypothetical-real

patterns, which, in its turn, results in the low variation of linguistic means to manifest them. Since the verb representing the process is central to the construal of events and discursive practices, transitivity theory was applied and the findings revealed that material, relative and mental processes are used more frequently than others, which is related to the communicative purposes of the genres in question and their constituent moves. The nature of the communicative event is informative since the members of the discourse community outline the discursive practice of software testing and the instances of software faulty behavior and performative since the addressee should execute certain operations under certain conditions and circumstances, which is often expressed by the mental process of the verb *see* for referencing. The hypothetical-real pattern relates the expected and observed results . The means of cohesion are not very much varied, i.e. references and conjunctions are used most, the prevailing grammatical means being the definite article.

SUMMARY

As a result of the theoretical and empirical investigation on the discursive and generic aspects of the written professional communication in English for IT the author has undertaken the following research activities:

- devised a theoretical framework for the discourse and genre analysis of the professional documentation in English in order to identify the guiding linguistic principles underlying the organisational communication in English for IT,
- conducted a situational analysis and located the genres under study (operational architecture, systems requirements, functional and non-functional specifications, test strategy, test cases, problem/bug report or change request, configuration management plan, repositories configuration, reports on fixes, manuals) in the situational context,
- compiled the corpus/ text database of the documentation composed by the members of the IT discourse community and undertaken qualitative genre analysis with further quantitative discourse analysis of the selected lexico-grammatical means.

As a result of the conducted research, a special IT organisational discourse can be defined as a specific type of transactional discourse, attributed to the written mode of communication with genres being its constituent parts. Its genres are contextually sensitive and intertextually related, reflecting the discourse community members' discursive practices.

Discourse analysis as a theory proves that IT genres should be viewed through social, functional and textual perspectives, which are not mutually exclusive, but essentially complementary to one another. Discourse analysis as a method, in its turn, accounts for descriptive and critical investigation, the former grounded in ethnographic, the latter in socio-critical traditions. For consistent and sustainable discourse and genre analysis, the documentation has to be located within the wider socio-cultural, the local situational, the wider linguistic and the local linguistic contexts.

Exploring genre as a social action and a mediation tool, the findings of the questionnaires and interviews were aggregated, a dynamic network of interconnected genres was built, and the relationships among them within activity systems were determined, i.e. dominating, sequential or transformational, rather than viewing genres in isolation. It was revealed that genres in IT possess high recontextualisation characteristics within and across the domains, which is

determined by their adherence to the particular discursive processes and which results in the traceability of constitutive intertextual relation within the network.

An original genre typological classification was proposed. All the genres in the network across the domains share four common communicative aims. The investigation of the communicative aims further accounted for genre rhetorical organization and the results of the implemented move and step analysis show that all genres under study, irrespective of the length and activity systems behind, possess an identical rhetorical structure, i.e. establishing a territory, establishing a niche and occupying the niche.

At the next stage the concepts of communicative aims and recurrent rhetorical organisation were combined, ensuring transition from genre rhetorical organisation to textualisation processes.

Genre textualisation processes have been investigated in quantitative terms and lexico-grammatical means were attributed in relation to text rhetorical organization and language ideational and textual metafunctions.

Since the verbs is central in construal of the ideational meaning, transitivity theory was applied, and revealed the types of processes in terms of the grammatical patterning of the verb as process and participants involved in the process based on the semantic meaning of the verb.

Taking into account the above conclusions, the hypothesis of the present doctoral thesis advanced at the beginning of the research has been validated. Research results prove the significance of the discursive practice, the communicative events, communicative aims, genre rhetorical organization and linguistic choice.

Conclusions

1. Written organizational communication in IT is a reflection of discursive organisational processes which are linguistically manifested in genre dynamic system with hierarchical, sequential and transformational relations. Genres are characterized by dynamism at the social level and conventionalism at the rhetorical organization and textualisation levels.
2. Organisational communication in IT for professional purposes should be investigated inseparably from the types of context, contextual elements and context modelling. The primary parameters for situational context modeling include the participants, setting, communicative aim, discursive practice and genres, which are considered during the

selection of research tools, i.e. questionnaires and interviews. Discourse analysis as a theory determines that IT genres should be viewed through social, functional and textual perspectives, whereas discourse analysis as a method accounts for descriptive and critical investigation,

3. Conducting the genre analysis, contextualisation, organization and textualisation processes have to be revealed.
4. Organisational genres possess recontextualisation characteristics, i.e. genre complete or partial transformation to another genre in a system, which can be determined by investigation discursive practices and intertextual relations.
5. All the genres in the network across the domains share four common communicative aims: 1) to regulate and guide the professional activity; 2) to inform about a professional activity, system, product, application; 3) to report progress of a professional activity; 4) to verify/ evaluate the compliance of a professional activity, system, product, application to certain requirements.
6. The investigation of the communicative aims further accounted for genre rhetorical organisation, and the results of the implemented move and stepanalysis show that, irrespective of the length and activity systems behind, all genres under study possess an identical rhetorical structure, i.e. establishing a territory, establishing a niche and occupying the niche.
7. Rhetorical moves can vary in their length; steps may have a predetermined order, but both of them strictly adhere to the communicative events they reflect. Since the variation of steps is higher, it results in more varied rhetorical patterns/ text types.
8. In the rhetorical patterns the verb plays a crucial role to express ideational language metafunction. Material and existentional processes dominate reflecting the communicative aims of certain professional activities.
9. For each of the identified rhetorical patterns, i.e. time and space order, causality, result, comparison, hypothetical-real and exemplification patterns only a limited linguistic (lexico-grammatical) choice has been identified which is due to the necessity to avoid ambiguity and ensure clarity of expression since the nature of ideational meaning is performative, i.e. it induces a reader to actions. For the same reason, the linguistic means of cohesion do not demonstrate high variation, most recurrent being endophoric (anaphoras and demonstrative references), esphoric (recurrently met in definitions) and

exophoric (usually signalling manifest intertextuality) references and additive conjunctions.

Taking into account the above conclusions, the hypothesis of the present doctoral thesis advanced at the beginning of the research has been validated. The research results prove the significance of the discursive practice, the communicative events, communicative aims, genre rhetorical organization and linguistic choice in the process of organisational communication.

Written organisational communication in the IT domain is a reflection of the professional discursive processes, resulting in genre dynamic network with hierarchical, sequential and transformational relations aiming at genre dynamism at the social level and genre conventionalism at the rhetorical and textual levels.

The set aims and objectives have been reached: written professional communication in IT has been investigated theoretically and empirically and qualitative and quantitative data have been obtained. The genres pertinent to the IT domain (operational architecture, systems requirements, functional and non-functional specifications, test strategy, test cases, problem/bug report or change request, configuration management plan, repositories configuration, reports on fixes, manuals) have been organised into a network, unveiling genre contextualization processes. Each genre was subjected to the move and step analysis and the investigation of the recurrent linguistic means, describing the genre rhetorical organisation and textualisation processes.

The reviewed concepts and frameworks majoring in organisational discourse in IT as well as the drawn conclusions prove that the awareness of discursive and generic peculiarities of organizational documentation is a significant pre-condition to a successful professional activity in the international labour market

Thus, the obtained findings have theoretical and practical value and may serve as a methodological ground and incentive for further research activities in organizational communication in applied linguistics.

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APPENDIX 1.

QUESTIONNAIRE

Thank you very much for agreeing to complete this questionnaire on written genres used in IT for professional communication. It should take you about 10-15 minutes.

For the purposes of the present study written genres are broadly defined as any document created for corporate communication at a workplace and used internally, communicating with your colleagues and externally, communicating with clients, partners and other stakeholders.

The aim of the research is to investigate the institutional situational context in which English written communication for IT occurs; to determine recurrently used genres in IT written discourse;to systematise the network of genres used for written professional communication in the IT domain, state their communicative aims and organization and typical language. The information will help me to describe the peculiarities of written professional communication and identify the requirements for writing successful professional documentation in the workplace.

Could you please answer the following questions and help us conduct research to investigate the peculiarities of written professional communication in IT?

Participant (Addressor/adressee)

1. Company_____

2. Location_____

3. Age (tick the appropriate box)

18-25	26-35	36-50	over 50

4.Work experience in IT(tick the appropriate box)

Less than 1 year	1-2 years	2-5years	6-10 years	more than 10 years

5. Native language _____

Purposive domain

6..In which business domain and sub-domains do you work? (e.g. software development, user interface development)

7.What is your position?

_____

8.What responsibilities (activities, actions and operations) that require documentation compilation and processing do you perform?

Activity, action and operation	Document(s)

Instrumentality

9.How is the documentation stored and retrieved in your company?

	Repository (please specify file format)	issue tracking system, e.g. JIRA	team collaboration software, e.g. *Confluence*	Other (please specify)
Tick all that apply				
Notes				

Could you specify the most appropriate time for you for the interview?

Thank you for completing this questionnaire! I highly appreciate your contribution to this research.

APPENDIX 2.

Interview Protocol for the In-person Semi-structured Interviews

The aim of my research is to collect information about the written documentation used in IT companies for professional communication. The results will enable me to organise the documents used at a workplace into interrelated networks and further describe their rhetorical (organisational) and linguistic features. The research results may be applicable for personnel trainings, materials design and further documentation flow optimisation. By document I understand any formal written unit generated individually or collectively that has an addressee or a target audience, is recognised by them, has a typical organisational structure, and is devised in response to some professional activity. The interview will take you approximately 15-20 minutes.

Questions for the in-person semi-structured interviews.

Communicative event and setting

1. What documents do you draw up? What documents do you review?
2. How frequently do you do that?
3. Who is the addressee?
4. Is s/he located externally or internally? If externally, in what countries?
5. Can there be multiple addressees?
6. What professional activity does it describe? What product or service is it related to?
7. Is the creation of the document determined by the company operations or by client requirements?
8. What activities precede its creation? What activities follow its creation?

Genres

9. What documents are created before it? What documents are created after it?
10. Which documents dominate in the set?
11. What are their aims?
12. Are there documents with similar aims?
13. What sections does it consist of?
14. Are there usually any graphs, charts, diagrams or flowcharts?

APPENDIX 3.

Interview Protocol Sheet Sample.

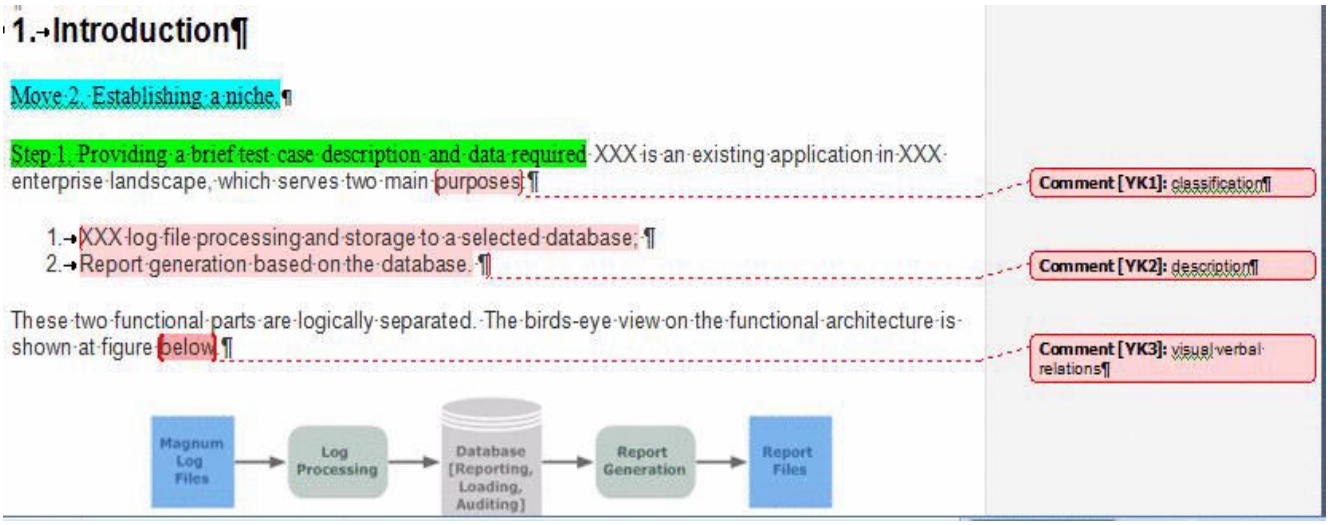
Genre	Addressor	Addressee	Communicative aim	Frequency of use	Professional activity/ product or service	Relation to other genres	Notes
Bug (incident) report/	Test engineer, project manager	Software developer	To inform about a bug in the application or about a system failure	Every time it occurs	Software testing	Technical specifications	
test plan	test engineers, test leads	Test engineers	To inform about planned testing activities	Every release	Software testing	functional and non-functional requirements, specifications and client acceptance criteria. May be followed by a bug report or change request.	contains test cases aimed at special releases
Technical (functional) specifications	Development leads, developers, test engineers, business analysts	development team members (to prepare a detailed schedule), developers (to develop software), testers (to test software), technical writers (to write end-user documentation – manuals, guides, etc.), support team members (to consult end-users), and external, i.e. end-users (to read how to use software) and outsourcers (to use and modify software further).	providing information for further reference, while developing, testing or launching a technical application or a system.	Designed for every functionality of the application	Software development	Business case, system architecture, non-functional specifications, testing documentation,	perfor mative

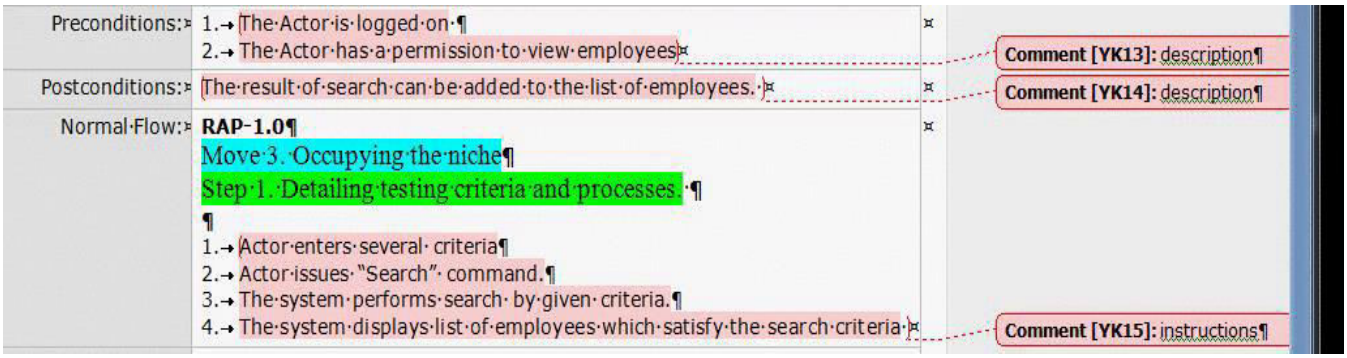
.

APPENDIX 4.

Sample Test Plan Discourse Analysis Mark-up (fragmented).

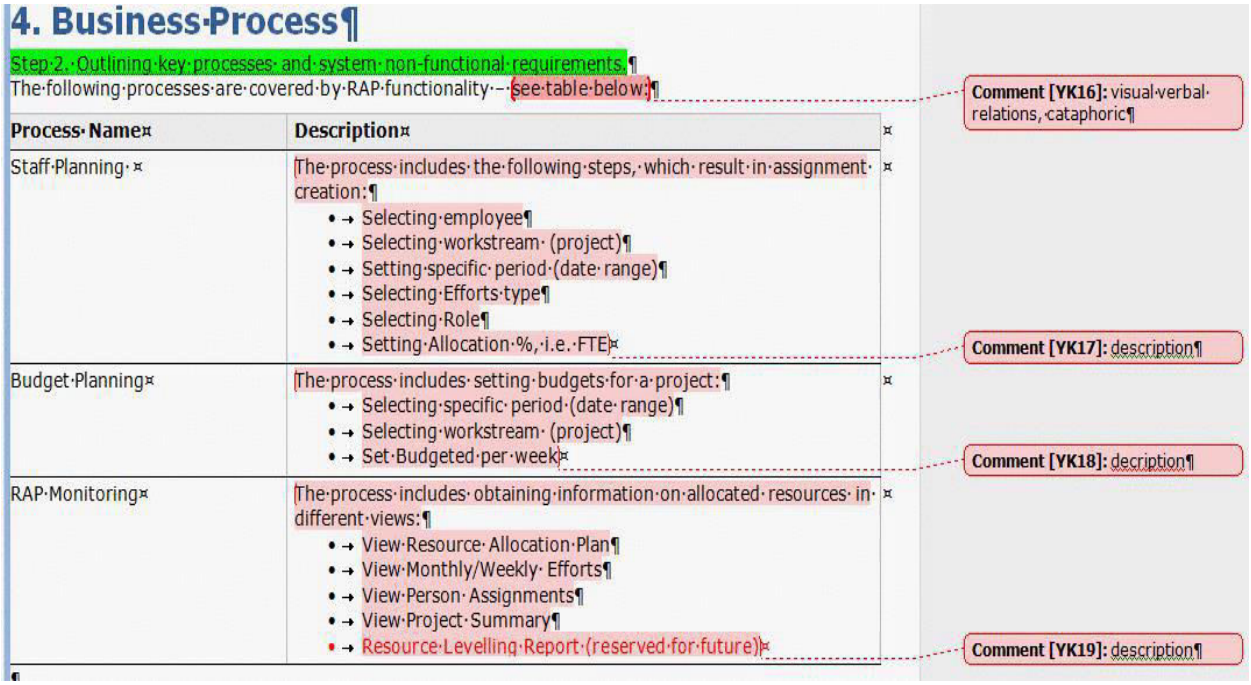
The data to be retrieved: Moves and steps; rhetorical petterns.





Interdiscursive recontextualisation relations between business (human resource and project management) and IT domains manifested textually. (fragmented)

The data to be retrieved: moves and steps; rhetorical petterns.



4. Business Process

Step 2. Outlining key processes and system non-functional requirements.

The following processes are covered by RAP functionality – see table below:

Process Name	Description
Staff Planning	The process includes the following steps, which result in assignment creation: • Selecting employee • Selecting workstream (project) • Setting specific period (date range) • Selecting Efforts type • Selecting Role • Setting Allocation %, i.e. FTE
Budget Planning	The process includes setting budgets for a project: • Selecting specific period (date range) • Selecting workstream (project) • Set Budgeted per week
RAP Monitoring	The process includes obtaining information on allocated resources in different views: • View Resource Allocation Plan • View Monthly/Weekly Efforts • View Person Assignments • View Project Summary • Resource Levelling Report (reserved for future)

Comment [YK16]: visual verbal relations, cataphoric

Comment [YK17]: description

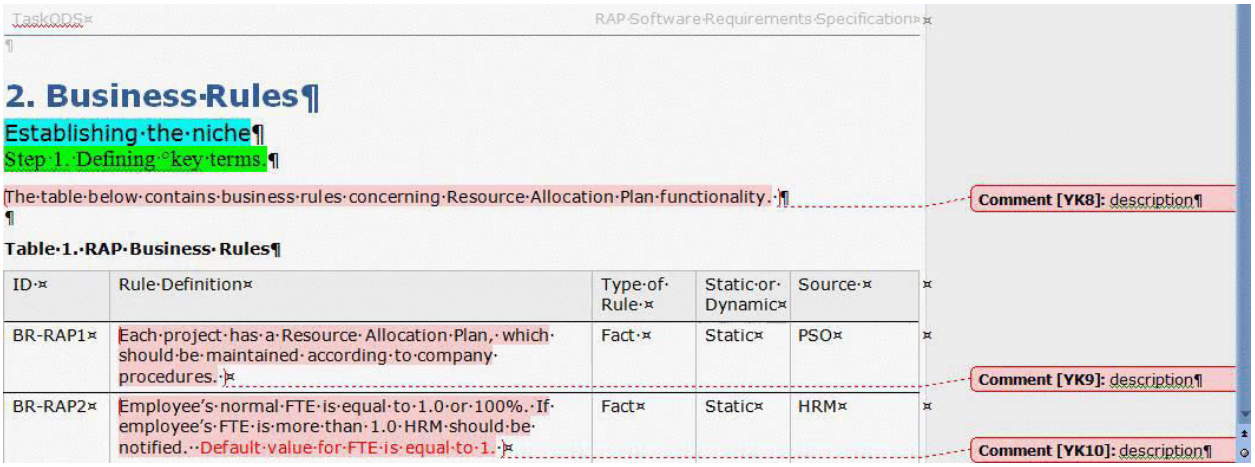
Comment [YK18]: decription

Comment [YK19]: description

APPENDIX 5.

Sample Software Requirement Specifications Analysis Mark-up (fragmented).

The data to be retrieved: moves and steps; rhetorical petterns.



TaskODS¤ RAP·Software·Requirements·Specification¤

2. Business·Rules¶

Establishing·the·niche¶

Step·1.·Defining·°key·terms.¶

The·table·below·contains·business·rules·concerning·Resource·Allocation·Plan·functionality.·¶

Comment [YK8]: description¶

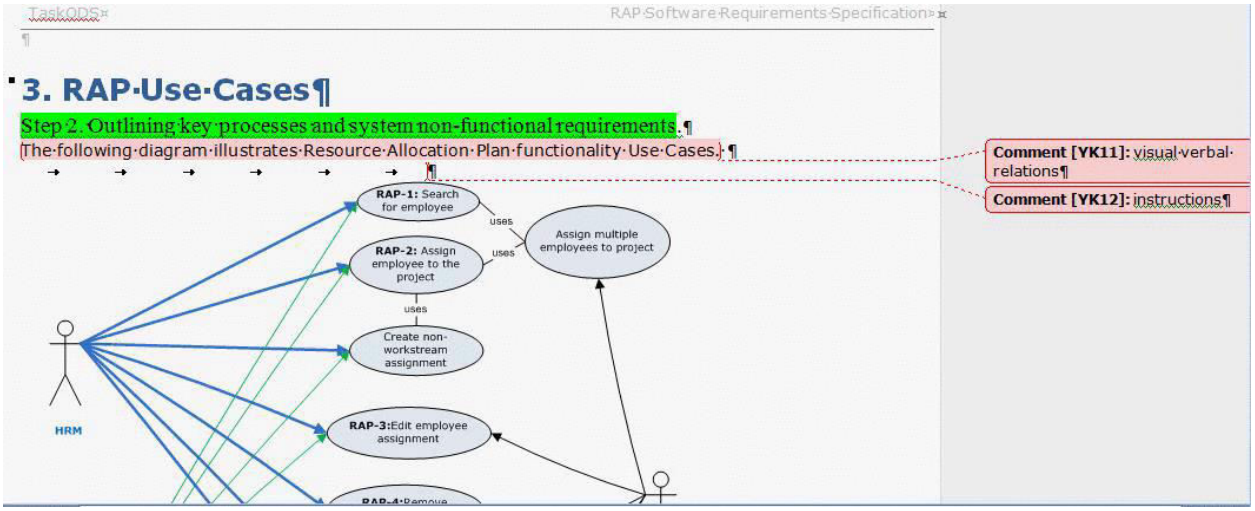
¶

Table·1.·RAP·Business·Rules¶

ID·¤	Rule·Definition¤	Type·of·Rule·¤	Static·or·Dynamic¤	Source·¤
BR-RAP1¤	Each·project·has·a·Resource·Allocation·Plan,·which·should·be·maintained·according·to·company·procedures.·¤	Fact·¤	Static¤	PSO¤
BR-RAP2¤	Employee's·normal·FTE·is·equal·to·1.0·or·100%.·If·employee's·FTE·is·more·than·1.0·HRM·should·be·notified.··Default·value·for·FTE·is·equal·to·1.·¤	Fact¤	Static¤	HRM¤

Comment [YK9]: description¶

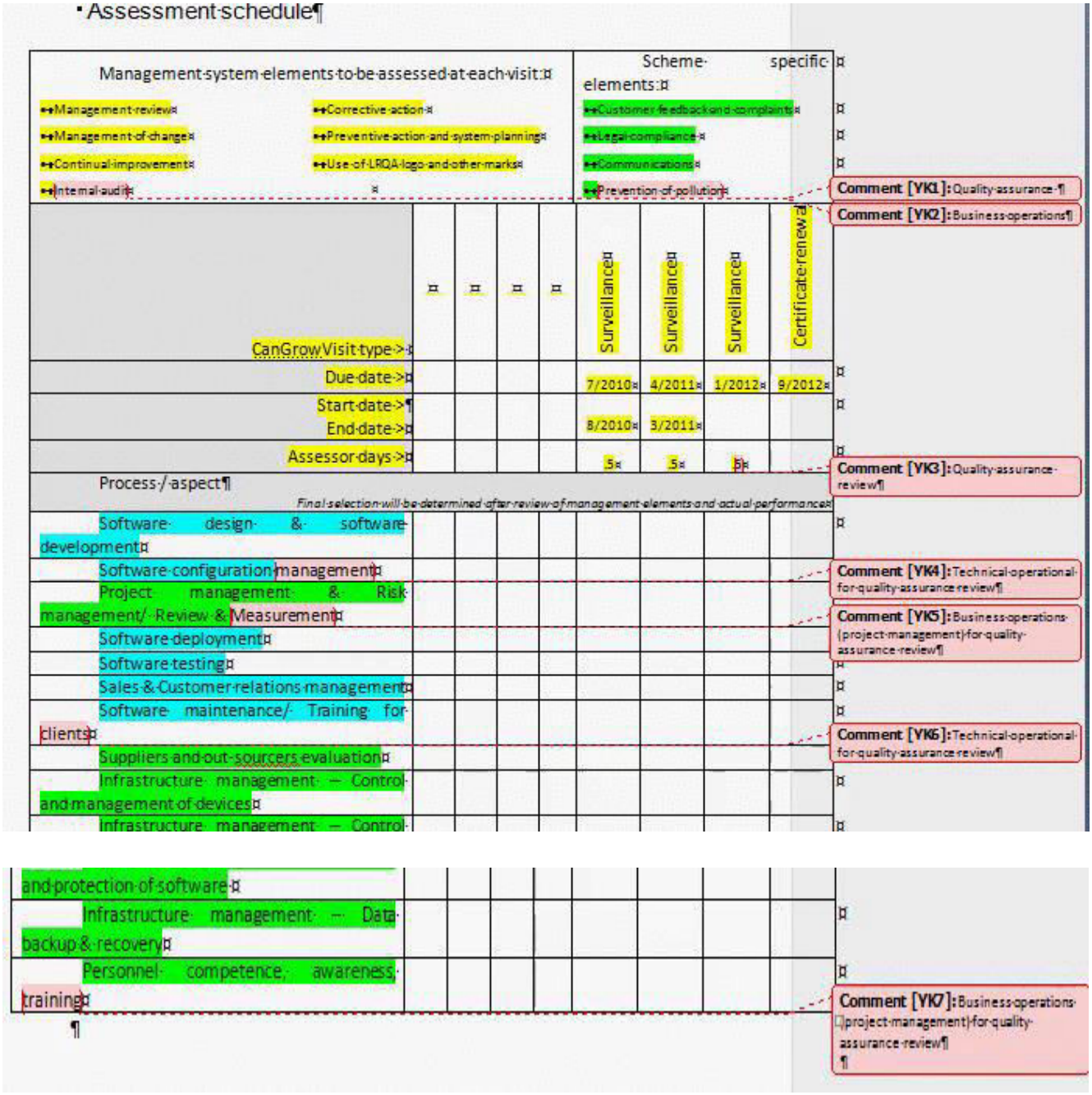
Comment [YK10]: description¶



APPENDIX 6.

Interdiscursive recontextualisation relations between quality assurance and project management domains in software development manifested textually. (fragmented)

The data to be retrieved: moves and steps; rhetorical petterns, interdiscursive relations.



Assessment schedule

Management system elements to be assessed at each visit:		Scheme specific elements:	
Management review	Corrective action	Customer feedback and complaints	
Management of change	Preventive action and system planning	Legal compliance	
Continual improvement	Use of LRQA logo and other marks	Communications	
Internal audit		Prevention of pollution	

Comment [YK1]: Quality assurance

Comment [YK2]: Business operations

CanGrow Visit type ->					Surveillance	Surveillance	Surveillance	Certificate renewal
Due date ->					7/2010	4/2011	1/2012	9/2012
Start date -> / End date ->					8/2010	3/2011		
Assessor days ->					5	5	5	

Comment [YK3]: Quality assurance review

Process / aspect								
Final selection will be determined after review of management elements and actual performance								
Software design & software development								
Software configuration management								
Project management & Risk management/ Review & Measurement								
Software deployment								
Software testing								
Sales & Customer relations management								
Software maintenance/ Training for clients								
Suppliers and out-sourcers evaluation								
Infrastructure management – Control and management of devices								
Infrastructure management – Control and protection of software								
Infrastructure management – Data backup & recovery								
Personnel competence, awareness, training								

Comment [YK4]: Technical operational for quality assurance review

Comment [YK5]: Business operations (project management) for quality assurance review

Comment [YK6]: Technical operational for quality assurance review

Comment [YK7]: Business operations (project management) for quality assurance review

Extracted from the external assessment report to comply with *ISO 9001:2008* requirements.)

APPENDIX 7.

Sample File Conversion to .txt file Prior to Processing in Oxford Wordsmith Tools 6.0. (fragmented)

6.1. CODE VERSIONING Code versioning based on Product versioning and project has no separate version for deliveries. 6.2. MODULE VERSIONING IN JIRA JIRA Project Subject URL to JIRA Location

*** integration and general project issues https://jira.ctxm.com/jira/browse/BGBB White Label Services WHL platform and services. https://jira.ctxm.com/jira/browse/WHLS XCasino XCasino platform and services https://jira.ctxm.com/jira/browse/OC Payment Gateway PaymentGateway platform and services https://jira.ctxm.com/jira/browse/WHLPG Reporting Dashboard/Reporting/CRM https://jira.ctxm.com/jira/browse/RPT Database Database common related issues https://jira.ctxm.com/jira/browse/DB 7. STORAGE AND RETRIEVAL OF CI'S

Storage procedures for CI's include process baselining, check-in/check-out procedures and access rights to artifacts for the project team:7.1. PROCESS BASELINING

Documentation is baselined by the last version in *** for document status "version".

7.2. CHECK-IN AND CHECK-OUT The procedure that is described below is used from November 15th, 2006. The check-in and check-out procedure obliges a programmer to sync his development environment with the latest version of the codeline available in the version control system repository right before starting any development activities. In order to make a change/fix programmer should check-out a respective file.

Upon the fix completeness programmer should attest that the changes do not harm the codeline (for example run the pre-submit tests or install application on developer's test server and test to guarantee the stability of the codeline). The development task is complete as soon as the programmer checks in the modified file (submit it to SVN). It is recommended to do a minimal number of changes in one SVN changelist. It is better to split the changes to several small changes and submit it to SVN as separate changelists in order to sync/rollback to this point in the future if required.

When submitting any changelist to the SVN an appropriate comment should be given which shortly describe performed changes. 8. RELEASE POLICY According to the defined milestones in the Development Plan, package of the application is created, label placed and version assigned to this application.