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Supervisor(s)	Ph.D. Antonin Ricard (Main Advisor, IAE Aix) prof. dr. Anne-Françoise Rutkowski (Second Advisor, Tilburg) Dr. Sc. Eija Koskivaara (Reader, Turku) Artem Vymorkov (Company Supervisor, Moscow)				

Abstract

The dramatic evolution of technology has encouraged the shape of hypercompetitive landscapes where only highly adaptable firms can survive. The Financial Services traditional sector adoption of technology allowed it to remain unchanged until recent times where FinTech disruptors have emerged, thus requiring global companies become more dynamic, adaptable and flexible by the adoption of Agile mindset through management of change and knowledge, culture awareness and best practices methodologies deployment across the businesses. This study uses grounded theory and case study research methods to explore the status, effects and challenges experienced in the Russian Financial Subsidiary of a Dutch European Multinational company by the Agile Global implementation strategy directed from Headquarters, in order to answer the research questions: "What are the challenges, particularities and status in the adoption of Global Agile policies in project management and IT teams in a Russian subsidiary of a financial European multinational enterprise?, "What is the influence of the adoption level of Global Agile policies on certain projects and possible improvement actions?".

Valuable results include the compatibility of the methodology with the business roles, the usefulness of Agile-Stage-Gate hybrids to facilitate product development and the usage of knowledge management strategies to propel adoption, as well as the hierarchical, cultural and bureaucratic challenges to integrate Business and IT teams that provoked questionable results in the initial phase of a non-standard Testing Automation outsource project. Further research can be done to explore the degree of adoption in other subsidiaries, monitor the pilot phase of automation project and the evolution of the integration between the business and IT teams.

Key words	agile, business teams, multinational, change management, scrum, spotify, fintech, culture dimensions, grounded method, case study, knowledge management, tender, outsourcing, test automation, stage-gate, agile stage-gate, hybrid methodology, global strategy, agile hybrid, financial sector, call for bids, distributed agile
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Turun yliopisto University of Turku





AGILE TRANSFORMATION FOR BUSINESS AND TECHNICAL COLLABORATIVE TEAMS CASE STUDY OF COMPLEXITIES IN A FINANCIAL EUROPEAN MULTINATIONAL'S RUSSIAN SUBSIDIARY

Master Thesis International Master in Management of Information Technology - IMMIT

Author: William Ernesto Cornejo-Sánchez

Supervisors: Main Advisor (IAE Aix) Ph.D. Antonin Ricard Second Advisor (Tilburg) prof. dr. Anne-Françoise Rutkowski Reader (Turku) Dr. Sc. Eija Koskivaara Company Supervisor (Moscow) Artem Vymorkov

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Turun kauppakorkeakoulu • Turku School of Economics

Tilburg School of Economics and Management

Institut d'Administration des Entreprises d'Aix-en-Provence

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1 TABLE OF CONTENTS

1	TAB	LE OF	CONTENTS	4
2	LIST	OF FIC	GURES	6
3	LIST	T OF TA	ABLES	
4	INTI	RODUC	CTION	9
	4.1	Financ	ial Services and Technology	9
	4.2	Hyper	competition	11
	4.3	The *F	Fin* Disruptors	
	4.4	Chang	e management and Agility	14
	4.5	Study	and Research Question	17
5	CON	IFIDEN	TIALITY	
6	THE	ORETI	CAL BACKGROUND	19
	6.1	The M	ultinational Enterprise	19
		6.1.1	Corporate Management	19
		6.1.2	Cultural dimension influences	21
		6.1.3	Knowledge Management, as deployment driver	24
	6.2	Agile v	way	25
		6.2.1	Mindset and Definition	25
		6.2.2	Adoption challenges and guidelines	
		6.2.3	Scrum methodology	
		6.2.4	Large enterprise and business implementation	
	6.3	Agile a	and Stage-Gate Hybrid	
		6.3.1	Stage-Gate	
		6.3.2	Agile-Stage-Gate	
	6.4	Outsou	arcing Dilemma	
		6.4.1	Definition and Types	
		6.4.2	Approaches to selection	
		6.4.3	Call for tenders	
7	RES	EARCH	I METHODOLOGY	40
	7.1	Ground	ded Theory	40
	7.2	Case S	study	
	7.3	Data g	athering and analysis	

/99

8	FIN	DINGS	AND RESULTS	47
	8.1	Projec	ct Governance	47
		8.1.1	Agile Global Guidelines Framework	47
		8.1.2	Business case development	
	8.2	Agile	Integration Challenges	
		8.2.1	Business Teams Structure and Flow	
		8.2.2	Cross-functional Integration Complexities	54
		8.2.3	Artefacts deployment	58
		8.2.4	Distributed specialization	62
	8.3	Busine	ess cases testing automation outsourcing	65
		8.3.1	Business motivation	65
		8.3.2	Special characteristics	66
		8.3.3	Tendering Chronology	67
		8.3.4	Testing Automation Knowledge	68
		8.3.5	Vendor selection	71
		8.3.6	Aftermath	73
	8.4	Know	ledge Management Strategies	74
		8.4.1	Internal Agile Marketing	74
		8.4.2	Community of Practices	76
9	CON	NCLUS	IONS	78
	9.1	Subsic	diary's environment influences adoption	79
	9.2	Know	ledge Management is key for Agile deployment	
	9.3	Busine	ess Teams nature importance	
	9.4	Mater	ialization of the Methodologies' Concerns	
	9.5	Resear	rch answers and Recommendations	
10	LIM	IITATIO	ONS AND FUTURE WORK	
11	GLO	DSSARY	Υ	
12	BIB	LIOGR	APHY/REFERENCES	91
13	ACH	KNOWI	LEDGMENTS	99

2 LIST OF FIGURES

Figure 1	Disruptive technologies: Framework for economic issues analysis 1	13
Figure 2	Change Management in dynamic environments simplified	16
Figure 3	Confidentiality: Enterprise Information Security Label	18
Figure 4	Framework for Project Management methodology selection	21
Figure 5	Comparison between headquarters and subsidiary national culture2	22
Figure 6	Scrum overview: Actors, Artefacts and Sprint	28
Figure 7	Stage-Gate internals: Stages composition	30
Figure 8	Stage-Gate diagram: Five stage, five gate system	31
Figure 9	Agile-Stage-Gate Hybrid: Implementing iterations within Stages	33
Figure 10	Outsourcing: Allocation choices for value chain activity	34
Figure 11	Example of AHP decision tree for vendor selection	37
Figure 12	Adaptation of the Ground theory process to context	41
Figure 13	Projects domains	13
Figure 14	Grounded embedded case study example	14
Figure 15	Project Lifecycle	18
Figure 16	Teams depicted in Agile Spotify Methodology	19
Figure 17	[AGGF] Domain of action of teams within Themes/Epics/Features . 5	50
Figure 18	Product development Pre-Project Phase	51
Figure 19	Agile teams configurations and bureaucracy	53
Figure 20	Flow of Feedback between PMO, IT and Upper Management	54
Figure 21	Scrum implementation in a Small-sized Software Company	55
Figure 22	[AGGF] teams theoretical configuration	56
Figure 23	Interaction between PMO and IT	57

7/99

Figure 24	Model of the Strategic Yearly Wall
Figure 25	Model of the Quarterly Wall 60
Figure 26	Agile Vortex wall adaptation61
Figure 27	IT high level Distributed Interoperability Architecture63
Figure 28	Case Study: Core Migration Interoperability 64
Figure 29	Testing Automation Project with Stage-Gate
Figure 30	Testing Hierarchies and Automation applicability
Figure 31	Agile Automation – Agile Test Quadrants
Figure 32	Testing types grouping and quadrants categories
Figure 33	Transformation Agile campaigns75
Figure 34	Agile Community of Practice Strategy76
Figure 35	Agile Deployment & Project Impact

3 LIST OF TABLES

Table 1	Mindset outlook strategies for global companies	20
Table 2	Hofstede's Cultural Dimensions summarized	22
Table 3	Leadership styles comparison between Netherlands and Russia	23
Table 4	Agile Manifesto Summary	25
Table 5	Scrum methodology Artefacts	28
Table 6	Stage-Gate: Stages and Gates characteristics	31
Table 7	Agile and Stage-Gate comparison	32
Table 8	Case study Results: Outsourcing in Scandinavian firms	36
Table 9	Requirements and Call for tender comparison	38
Table 10	Case studies typology and research methodology	42
Table 11	Primary Data source	45
Table 12	Secondary data source	45
Table 13	Interviewees Roles	46
Table 14	Current Governance practices parallel to [AGGF] tasks	49
Table 15	Tender for Testing Automation: Project complexities	66
Table 16	Comparison between BlackBox and WhiteBox testing	69
Table 17	Bidders perceived performance	. 71
Table 18	Tender: Weights given by functional areas	72
Table 19	Tender: Vendor evaluation	72
Table 20	Agile Guidelines Implementation results	83
Table 21	Projects impact	84

4 INTRODUCTION

"Knowledge of the Past elevates the understanding of the Present to hopefully shape the threads of the Future".

Technological and socio cultural development of society has evolved exponentially in the last centuries. Entire civilizations and empires have raised and fallen, bringing humanity to modernity. Concepts given birth to be replaced subsequently by the transformation of environment, economics and politics, among other drivers.

Diminishing the timeline devises that change has brought disruption into business and otherwise important actors have succumbed or been weakened by the lash of seeming uncertainty and chaos generated by impacting factors such as technology.

Besides the clear benefits of transition from theory towards the industry applicability of knowledge within a business internship (Knouse & Gwen, 2008), the additional improved experience within the framework of a theoretical evaluation is the emergence of empirical knowledge put into a context which used wisely can give valuable explanation on phenomena occurrence.

This study has the goal to project the professional work in a European Financial Multinational ("The Multinational") and its Russian subsidiary ("The Russian Subsidiary") to explore the challenges its Dutch headquarters ("Headquarters") undergoes to deploy global guidelines for agility transformation in the context of their project management activities. Under a substantial attempt to make a large and cross border enterprise more Agile and adaptable and tolerant to change, a recommended approach (Highsmith & Cockburn, 2001) to overcome the upcoming turbulence in the financial services industry environment.

Consequently, this section will summarize the relationship between finance sector and technology, describe the hyper competition and disruptive technologies that can potentially affect a company in this sector and who are a constant cause of analysis, thus emphasising on the need and importance of change management and how being Agile becomes paramount as a driver for a firm's subsistence.

4.1 Financial Services and Technology

The term Fintech has captured strong interest from both industry and academy, however it is new definition for an existing relationship, which represents the interaction between technology and financial services and it goes beyond specific sectors and business models, covering the full spectrum of services and products offered by the industry (Arner, Barberis, & Buckley, 2015).

The interconnection between Technology and Finance has been classified in three difference eras (Arner et al., 2015):

- FinTech 1.0: The first interlink phase, dating from the second half of the 19th century, related directly the analogue industry with financial services impacted with inventions such as the telegraph, which broaden the impact and increased communication and transfer of information across far locations.
- FinTech 2.0: From 1967 and along with the introduction of the ATM the industry transitioned to the digital technology, notably in the field of communications and transactions processing, which enabled the globalization of products and services by 1987 and was dominated by traditional regulated institutions who offered services such as e-banking.
- FinTech 3.0: Having year 2008 as a milestone, new entrants enter to compete against established businesses using technology to deliver financial products and services directly to the public, resulting in their digital democratization.

Furthermore, the business sector of financial services has been recognized to be among the ones with the highest and increasing IT spending, procured by the improvement of efficiency and product offering.

New generations are more tech-savvy (Dapp, 2014), with millennials being the starting point for the increase in awareness and usage of information technology on a daily base with an increasing trust for the digital landscape and their applicability to fulfil their needs. Some individuals may prefer to use means other than cash to prevent managing change or losing their bills, increasing expectations for electronic payment options (Au & Kauffman, 2008).

The individual switch to digital consumption henceforth promotes an ecosystem of digital products involving industries such as software and finance where previous long payment processes are being replaced by mobile by step authentication, requiring financial sector companies to focus their strategies to develop Digital banking platforms effectively (R. W. Gregory, Keil, Muntermann, & Mähring, 2015). Furthermore, this influence expands to include banking and technology services within cities transportation systems.

Although the turmoil for the sector started from the last part of the second era, it was only after the start of the third one that traditional companies started noticing the appearance of serious and potentially disruptive competition, although the appearance of PayPal and its consumer to consumer payment service (Dhar & Stein, 2016) was an initial indication of the shift towards the third era.

Technology generates, carries and represents to some extent innovation itself (Prastacos, Söderquist, Spanos, & Van Wassenhove, 2002), with strong proof in the Financial industry.

4.2 Hyper competition

Past are the times of slow and stable oligopolies industries, replaced by intense and rapid environments that promote unconventional and unexpected way of competing (D'Aveni, 1998). The global economy reshapes the landscape into a hypercompetitive space with a high degree of uncertainty where constantly mutating competitors, events and industries make prediction very challenging, further stirred by unregulated and intensive new technology with global reach (Harvey & Novicevic, 2001)

Hyper competitors strike and generate their own competitive advantages, which can affect, neutralize or even destroy that of the leader, shifting market positions and strategic capabilities (Biedenbach & Söderholm, 2008) and making the industry unreliable. As a matter of fact, aided by technology advances that have affected many industries, customers have evolved to become a powerful force of change, requesting better quality for less price.

Technology evolution improved interconnectivity dramatically and along with globalization and lack of regulation, created a vast virtual economic space with high interdependence of space and time. In effect physical and virtual interactions complexities shift the focus from deterministic strategies of cost and price to probabilistic propositions of value-web commonly found in knowledge intensive organizations (Harvey & Novicevic, 2001).

In such competitive domains, creative disruption and innovation are not options but rather a necessity to survive as well as the capability to respond quickly to their competitors innovations (D'Aveni, 1998), redefining as well firms competitive advantage sustainability and its depreciation over time (Harvey & Novicevic, 2001)

Timing has acquired a dimension where the need of being at the right time puts a burden on the organizational processes and recognizing shifting patterns within the market and their contexts requires high tolerance and adaptability to change, not to mention the increase of risks and demands that in some cases make doing the things right the first time (Harvey & Novicevic, 2001) to be a last opportunity.

For the multinational enterprise, synching of resources and interdependencies must be properly coordinated and complemented taking into account global characteristics and hypercompetitive timescape. (Harvey & Novicevic, 2001)

Electronic finance, specially online banking and brokerage have changed the financial services industry worldwide, highlighting the need for better policies and risk mitigation strategies that can discourage the potential benefits of e-finance and their cross border delivery (Claessens, Glaessner, & Klingebiel, 2002).

Furthermore, better storage and processing capabilities and robust systems yield the possibility to analyse customer behaviour and focus on improving their experiences through an increase of services, additionally offered through a multitude of channels from traditional branches to wireless devices, the last even becoming the first contact point (Claessens et al., 2002).

For instance, previously it was only possible to invest through a broker agent while nowadays customers are able to do it directly through an online platform, additional streams of services providers have emerged to cover diverse financial services such as banking, lending, brokerage, news, aggregation and e-payment, ultimately bestowing the power and benefits to the customers (Claessens et al., 2002).

Importantly, new market entrants can be potentially backed up by other organizations with deep pockets which can enable them to achieve ubiquitous price wars (Harvey, Novicevic, & Kiessling, 2001). Interestingly, hypercompetitive disruptors do not have intentions to build a long lasting competitive advantage but otherwise make small continuous, changing and destabilizing disruptions that provide a temporary edge. (Harvey et al., 2001).

Traditionally stable financial environments such as banking and with high embracing of IT as their own transformation method need to adapt as well in the era of hyper competition. For instance management has direct responsibility to administer resources and reconfigure collective resources in order to generate capability to handle conflicting composite requirements like efficiency-innovation, commoditization-customization and control-entrepreneurship (Huang, Fasnacht, Starkey, & Tempest, 2006).

4.3 The ***Tech*** Disruptors

Modern platforms have groomed by using the ubiquity of the internet and employ technology to disrupt industries structures, widen business boundaries and jeopardize existing players sovereignty through enhancements through network effects (Dhar & Stein, 2016).

The traditional and untouched finance services industry has lead and embraced technological advances across many dimensions, yet it was finally penetrated by new the emergence of new competitors, commonly denominated 'FinTech' because of their usage of revolutionary and technology driven business models that innovate on the way services are procured to customers while also addressing deficient or inexistent services often ignored by big players.

Figure 1 presents a framework (Au & Kauffman, 2008) that illustrates reasons why technology disruption causes impacts, ranging from direct to services and business providers, to less immediate to regulators and government and last to technology providers.



13**/99**

Figure 1 Disruptive technologies: Framework for economic issues analysis

As a matter of fact, elements like the completion of determined financial platform, need for certain components replacement, demand for c2c business transactions (Dhar & Stein, 2016) as well as the surprisingly high costs of certain services (Philippon, 2016) assured Fintech entrants with the ecosystem to proliferate, further strengthen by the notion that they can create further differentiation through quality, speed, specific benefits or even peer to peer lending with which traditional financial institutions might find difficult to compete.

Common services provided by the Fintech companies are commonly limited to funds holding, accounts, cards and still depend on the more robust third parties to offer more complex services such as investing, trading, brokerage and insurance (Dapp, 2017).

Nevertheless these new players should not be underestimated and often bankers are overconfident to doubt these small companies can be more flexible to get advantage of new regulations, complemented by the illusion of customer's loyalty, which has been greatly affected by the recent financial crisis and scandals involving once renowned banks (Dapp, 2017).

Another disadvantage is financial institutions are sub-efficient to implement important CRM changes, something in flexible customer oriented Fintech can excel by leveraging the socialized client community (Kotarba, 2016), especially with clients dependencies on knowledge advantages diminished by the digital space.

Scholars research has shown mobility is currently not the most important factor for adoption of mobile payment services but rather the ease of registration and usage characteristics of a platforms offered (Kim, Park, Choi, & Yeon, 2015) henceforth providing small bureaucratic-less start-ups a head start over long process slower traditional players, not without security and privacy concerns.

A second entrants are the denominated 'TechFin', mainly technological companies with a strong large non-financial services user base such as those in e-commerce, which allows to leverage their data towards offering financial services, adding such services to their value chain (Zetzsche, Buckley, Arner, & Barberis, 2017).

Henceforth, the initial relationship of the TechFin is based on other type of services, then proceeds to capture massive data from the usage and consumption of their customers and seeks to start making use of that information to offer financial services by serving as an intermediary to other providers and sometimes even reaching the capability to offer the services by themselves (Zetzsche et al., 2017).

Furthermore FinTech and TechFin are transforming the sector and challenging its regulation enormously both because of the aforementioned commoditization of technology and the increasing new entrants and competitors, requesting an analysis of regulatory approaches to balance innovation and development but specially financial stability and consumer protection (Zetzsche et al., 2017).

This gives birth to the next important disruptor is "RegTech", acronym for Regulatory and Technology, which describes the usage of IT in regulation, monitoring and compliance (Zetzsche et al., 2017), exercising stronger and faster pressure than before which represents a considerable paradigm shift related to regulations which affects the entire service industry. Although current applications have been on the reporting and compliance processes (Arner, Barberis, & Buckley, 2016), the potential of RegTech lies in other applications such as the intermediation and nexus between regulatory agencies and financial institutions, offering real monitoring and investigation that would potentially detect frauds or criminal likewise behaviour.

Likewise, regulatory bodies see a tremendous potential framed into the development of RegTech that would facilitate the transition from passive control the behaviours and reactive towards active and automated preventive and supervising regulation (Zetzsche et al., 2017). RegTech is arguably more a potential complementary partner for financial institutions but represents a clear necessity from financial institutions to adapt their internal compliance processes to leverage the existence of the new disruptive business.

4.4 Change management and Agility

The motion of events and change in industry landscapes mentioned previously, that the Financial sector has delayed but not escaped, requires an inner change in management capabilities and the take on of a global mindset that avert decline and foment prosperity (Lahiri, Pérez-Nordtvedt, & Renn, 2008).

A broader perspective and innovation mindset, going beyond boundaries and incorporating diversity allows management to convert globalization and technological threats into opportunities. This mental framework conceptualizes opportunities into business ideas and models, going from "best" towards "next best" practices. Complemented with virtual and collaboration mindsets, to outsource secondary activities to other businesses and focus the firm's effort into core competencies while doing synergy combining with complementary businesses, managers can make firms more flexible and responsive (Lahiri et al., 2008).

Within multinational enterprises, collaboration, synergy and standardization gain a new dimension given the importance of working as one brand, mitigating the challenges and improving the communication across diverse geographies and cultures while exploiting the natural benefits of their subsidiaries within their local markets. Furthermore having a holistic strategy creates positive conditions for specialization, interdependency and coordination required in internal autonomous business and technical teams belonging to a globally integrated and effective multinational network (Kedia & Mukherji, 1999).

Even more, the degree of technological change and need to generate new products and services, improve efficiency and compliance within the financial sphere make institutions not able to rely in their internal software expertise and capacity which in turn adds a new layer of complexity for managers that must deal with third parties and providers.

The importance of embracing change, sometimes compared to the theory of evolution of Charles Darwin (Prastacos et al., 2002), is exacerbated by the phenomenal pace of change which makes from previous generations of managers insufficient to transform modern corporations and make them adaptable enough in a century were change is not an option but rather a necessity in a contemporary uncertain business environment were continuously affected by the pace of change.

This concept is not unknown by firms that make efforts to improve their competitiveness, yet to drive for this internal change requires top management commitment and depends on many factors such as intervention, employees openness, resistances and corporate culture (Prastacos et al., 2002).

Managerial need to develop organization agility (Harvey & Novicevic, 2001) is impacted by the degree at which the enterprise can accept and adopt the change involved in the transformation, which in itself must be must be coherent with organizational needs.

On a deeper level, promoting the understanding of the corporate change strategy and mindset among middle management, requires top management to develop a culture of organizational change supported by downward and lateral information flow across the whole firm (Biedenbach & Söderholm, 2008).

Figure 2 presents a simplification and summarization of the change management is displayed, noting how change is transversal to the organization but relies in structure and capability (Biedenbach & Söderholm, 2008).



Figure 2 Change Management in dynamic environments simplified

As seen previously, modern dynamic marketplace requires organizations to continuously create new sources for competitive advantage, which summed to the everconstant increase of attacks from their rivals, make imperative the constant adaptation to change and adaptation to both internal and external environments to create a far lasting dominance. This should not be taken lightly, as an attempt to implement a reactive behaviour toward external stimulus can make the organization unstructured and chaotic with uncoordinated changes to jeopardize the stability and controllability therefore change should be an evolving and constant matter through the whole organization.

Time coherence has become a critical factor in global competitiveness, therefore becoming a variable to impact within the agile strategy to create temporary benefits against other rivals (Harvey & Novicevic, 2001). Executing timely strategic moves allows organizational agility to materialize within the firm, whose characteristics of combined flexibility and responsiveness leverage these advantages towards the first to market goal.

Not only competition but also approaches such as the implementation of "one bank account for life" regulations could showcase the need for the financial institutions to be prepared for the impact and modifications these unexpected requests will require in their internal systems (Kotarba, 2016) and the need for their internal managerial and technical teams to be fast enough and incorporate changes that otherwise result in considerable monetary fines or business practice inability.

4.5 Study and Research Question

As seen in the previous sections, the strong impact, be direct or indirect that the financial sector has experienced, the big transformation, on the global scale, summed by the emergence of new competitors and business models jeopardize even the largest multinational operations.

Therefore, the Enterprise Multinational is aiming towards evolving its internal processes and working methodologies, for which agile is heart of the dynamic digital strategy, further giving priority to the deployment of Agile among the diverse working teams and the importance of change management capabilities, chosen as a driver for this research.

During the following sections the Agile transformation processes is explored. First we present the confidentially clause and explain why the information masking is required for the study, then illustrate the state of art in relevant fields such as corporate culture, agile methodology, stage gate hybrid and multinational processes and outsourcing, later proceed to explain the reasons of the combined use of grounded theory and exploratory case study methodology for the research and finally we present the findings and results related to the agile transformation, knowledge management for deployment, business case development and specific projects management.

Whenever possible, knowledge and processes were modelled with the intention to extract patterns and understand the complexities between the interactions of the actors among the Financial and Information Systems landscape.

This work constitutes an effort to answer the following research questions:

"What are the challenges, particularities and status in the adoption of Global Agile policies in project management and IT teams in a Russian subsidiary of a financial European multinational enterprise?

What is the influence of the adoption level of Global Agile policies on certain projects and possible improvement actions?"

The previous questions are raised in order to shed light on the difficulties experienced by both upper management and cross-functional employees when implementing agile transformation policies and the direct effects of their adoption in running projects, especially in the context of service based multinational's subsidiaries in complex business environments such as Russian financial sector. In contrast, current state of the art research has explored agile implementations on medium size western enterprises, the collaboration of technical teams or the impact of product launch methodologies on manufacturing processes, with limited focus on culture dimensions, change management, pure business team structures, knowledge management deployment and case studies of project management methodologies deficiencies.

5 CONFIDENTIALITY

This study was conducted in a moderated information security domain. Policies of the Company required the Author to sign a confidentiality agreement in order to safeguard intellectual property and business, given the financial nature of the operations involved.

Figure 3 illustrates the typology of the information security within the organization, ranging from C1 and widely available to C4 as maximum enterprise secrets.



Figure 3 Confidentiality: Enterprise Information Security Label

Although the research information domain did not include C4 level category of information, restricted and confidential information was required to perform the research for this thesis topic, therefore the company requires that certain measures are taken to honour the agreement and protect the information assets. Information disclosure control is executed but not limited to:

- Avoid usage of the company's name.
- The General business operation (Finance) as well as Global and Local headquarters are mentioned, if it does not allow to identify the company.
- Usage of generic naming to masks internal systems or the nature.
- Masking of Roles, yet providing enough information relevant to the study.
- Limited mentioning of information present in internal guidelines, ensuring it does not represent a risk to and affect company's competitiveness.

Furthermore, this work is only released under the revision and approval of the company's internship supervisor.

6 THEORETICAL BACKGROUND

For the depth and understanding intended in this study, it is required to explore a subset of influencing theories and relevant knowledge for the context of cross cultural, multi role and transnational adoption of Agile principles, as well broader practices were perceived to be directly impacted or benefited from them.

Concepts such as cultural differences, the core concept of Agile as opposed to their methods and hybrid applications, the multinational business logic requirements and the applied theory of information systems outsourcing decisions represent a valuable platform to understand the processes taking place in the Russian Subsidiary project management teams, as well as the upper management strategies.

6.1 The Multinational Enterprise

Multinationals require to operate across different geopolitical zones and their managers require to have a knowledge of how cross-cultural differences and country realities can impact their global strategies, ultimately making awareness of values, experiences and lifestyles a sustaining skill.

Although the modern landscape is influenced by technology advances, it is ultimately the human component and the interactions between individuals the decisive factor to generate a competitive edge for a global corporation, thus the importance of structuring and developing a purposeful training and learning environment.

6.1.1 Corporate Management

Multinational organizations are not homogenous but rather heterogeneous mix of conglomerated companies around the globe with a common organizational culture (Scheffknecht, 2011), in addition their operations complexity includes challenges of doing domestic operations as well as multiple countries and their environments while managing the organization as a whole (Elron, 1997). Furthermore, subsidiaries must adapt to local markets while also implementing headquarters strategies and goals.

Emergent change approaches, capability to adapt and the importance of flexible structure and projects are key elements of consideration (Biedenbach & Söderholm, 2008), such as the adoption of a mindset related to the particular strategy.

Table 1 illustrates the different mindsets adopted by global companies, depending on their internal strategy (Kedia & Mukherji, 1999), this suggests that autonomous firms are more capable of adopting change, only to be superseded by interdependent capabilities of truly transnational companies that and their subsidiaries reaction capability to their relevant markets.

Mindset	Outlook	Strategy	
Ethnocentrism: Home-	Centralized/Controlled	International	
country perspective			
Polycentrism/Regiocentrism:	Decentralized/Autonomous	Multinational	
Host-country perspective			
Geocentrism: Global	Natworked/Interdependent	Transnational	
perspective	Networked/ interdependent	Tansnauollai	

Table 1 Mindset outlook strategies for global companies

In the landscape where customer is king, satisfying their desires is recognized by managers as a corporate driver highly dependent on flexibility and innovation both key elements for competitive advantage. Therefore, modern competitive environment requires that the enterprise is able to embrace both types of flexibility (Prastacos et al., 2002):

- Structural: Capacity and time to adapt within a structure, related only to operations and involving transformation of processes. Previously enough for stable competitive environments.
- Strategic: Radical and transforming the very goals and nature of the organization, a change of character rather than only volume. Required to survive modern competitive environments.

Furthermore, managers recognize the importance of innovation framed in a longterm sustainable organizational and technological change choreography of project execution capabilities and flexibility (Biedenbach & Söderholm, 2008).

Altogether, corporate management competitive alternatives include building the capabilities to capitalize on the usage of Omni-channel architecture, enhancing the synchronization and flow of process across the financial and digital landscape and represents an evolution over the multichannel concept that focused on communication between customers and only a point of contact (Kotarba, 2016).

Complex projects in mature large organizations are scenarios in which the executing methodology must be analysed by corporate management, given the natural high level of interdependencies resulting in time consuming coordination (Barlow et al., 2011). Therefore, member's mutual adjustment can be difficult to implement at a large scale henceforth directing researchers to recommend hybrid methodologies for large organizations, apart from low volatile (no turnover) environments in which agile only is applicable.

Figure 4 presents an adopted simplification of a Framework for Project Management methodology selection (Barlow et al., 2011).

Nature of the Project Interdependencies



Figure 4 Framework for Project Management methodology selection

The broader geographical circumstances of Multinationals require corporate leadership to take into account the importance of time perception, pacing style and cultural background to avoid the negative effects, resulting from varying expectations from employees (Arman & Adair, 2012). Likewise, interpretation of situations, silence and conflict management are key differences that should be socialized in addition to the leverage of technology opportunities to address also virtual interactions through the subsidiaries.

6.1.2 Cultural dimension influences

While conducting business in subsidiaries around the globe, the multinational enterprise is not extent to influences from differences between countries national cultures, some of those that can represent challenges and affection operations while others can represent a positive characteristic that can be exploited into aggregate value.

Cultural diversity acquires an important and strategic dimension across worldwide operations implementations and bring about concepts such as diversification and intercultural management contextualized in efficiency increase when international business units are "related" to some extent in terms of national culture. (Palich & Gomez-Mejia, 1999).

Scholar recognized work related to the culture influence in multinational includes Hofstede's and GLOBE, eliciting the necessary mention of their discoveries and frameworks in the context of the involved interactions with their subsidiaries.

Table 2 presents a summary of Hofstede's cultural dimensions, result of research within IBM Multinational corporation and their subsidiaries corporate culture (Hofstede, Hofstede, & Minkov, 2010).

Dimensions	Summary		
Power Distance Index (PDI)	Importance to hierarchy and degree of higher		
	figure respect/lower figure consideration.		
Uncertainty of Avoidance Index	Lack of willingness to take risks.		
(UAI)			
Individualism vs Collectivism	Self-centred individualistic opposed to		
(IDV)	community orientation.		
Masculinity vs Femininity	Pure business opposed to relationship oriented		
(MAS)	interactions		
Long vs Short Term orientation	Honour to traditions opposed to pragmatism for		
(LDO)	problem solving		
Indulgence vs Restraint (IND)	Own gratifications opposed to control to strict		
	social norms		

Furthermore, taking into account The Russian Subsidiary the relevant comparison is made with the national culture of The Headquarters, illustrated in Figure 5 ("Countries - Geert Hofstede," 2017).





Accordingly, in the context of headquarter with subsidiaries it is expected dimensions such as power distance, individualism and masculinity would pose greater challenges given the absolute difference among them.

Furthermore, GLOBE project, involving myriads of researchers around the globe performs a recent analysis that identified six leadership types (Dorfman, Javidan, Hanges, Dastmalchian, & House, 2012):

• Performance oriented, driven by high standards, innovation, decisiveness and firm core values.

- Team oriented, valuing cohesion, loyalty pride and collaboration.
- Participative, promoting delegation and equality and encouraging decision making and implementation.
- Humane, granting patience, generosity, support, well-being and compassion.
- Autonomous, with individualistic and independent self-centric style.
- Self-protective, tied to procedures, consciousness, safety and security.

This identification allowed to further group countries using their similarities into cultural clusters: Nordic, Anglo, Germanic, Latin European, African, Eastern European, Middle Eastern, Confucian, Southeast Asian and Latin American. The Netherlands is considered part of the Germanic cluster while Russia corresponds to Eastern European (Hoppe, 2007). Furthermore, the higher and lower scale of each cluster was identified for the six leadership types and the specific relationship between The Netherlands and Russia is presented in Table 3.

Leadership style	Netherlands	Russia
Performance oriented	High	Middle
Team Oriented	High – 10th	High – 4th
Participative	High	Low
Humane	Middle	Middle
Autonomous	High – 1st	High – 2nd
Protective	Low	High

Table 3	Leadership	styles	comparison	between	Netherlands	and Russia

From this comparison, it can be learned that headquarters employees may have more active individual participation mechanisms while Russian Subsidiary would rely on execution instructions and readiness support from their colleagues. Moreover, results and measurement may have higher stress levels in The Headquarters compared to The Russian Subsidiary, although employees' loyalty in the second would mean lower volatility and turnover.

Scholars recommend additional awareness of time perception effects, which is another factor influenced by national cultures which can have an affect effectiveness multicultural teams and their transition, action and interpersonal processes by means of time orientation, effectiveness, pace of life and silence temporality (Arman & Adair, 2012).

For instance positive effects of cultural heterogeneity, complemented by training in subjects such as management of conflict, mean that teams integrate on both global and local interests, impacting the performance of the subsidiary (Arman & Adair, 2012).

Nevertheless it is also argued that direct market, technology and production benefits as well as knowledge based indirect profits are increasingly difficult to exploit when sharing and transfer of expertise encounters an added layer of cultural differences complexities (Palich & Gomez-Mejia, 1999).

Consequently, the creation of a common international corporate culture can be hindered by national culture influences, resulting in certain different behaviours. Likewise organizational culture is not static and can experience further need of intentional/unintentional changes product of situations such as business need, during which change management executives must take into account the diversity of reactions and effects through the multinational multicultural landscape (Scheffknecht, 2011).

6.1.3 Knowledge Management, as deployment driver

Knowledge Management represents decades of managerial practices and even reflection within the academy and represents one of the most important businesses issue: Corporate knowledge creation, usage, transfer and storage (Prastacos et al., 2002).

Furthermore, intangible, tacit characteristics make information awareness and value difficult to detect, as users only recognize the importance of information driven by the urgency of the need.

Executives are required to acknowledge knowledge facilitates the integration of tasks, activities and people thus impacting development of processes, services and products while supporting cooperation and communication and generating value thorough the whole organization process (Prastacos et al., 2002), factors of high relevance for a multinational challenging applicative sphere.

Additionally, the applicability and usable of Knowledge Management as a sustainability information-transfer strategy shines in highly volatile environments or industries where practitioners recommend it as an essential activity to support the selected project execution methodology (Arman & Adair, 2012).

To summarize, Knowledge is a key driver to support change and therefore ensure proper deployment methodologies effectively on a large and wide scale which makes it a considerable competitive resource. An organization with a strong capacity to absorb, transmit information, conceptualize it into knowledge across business units and stakeholders effectively, experiences an increase competitiveness in time critical situations (Harvey & Novicevic, 2001). Additionally, global companies able to appropriate and apply tacit knowledge present in an unstable context can profit with increasing timely wise innovations.

6.2 Agile way

This section explores the concepts, adoption, challenges and examples of Agile as exposed by practitioners and researchers in the literature.

First, the core concept and exposed of Agile as a mindset other than a methodology is exposed and a quick explanation of why the concept is needed, following by guidelines of adoption, given that is not as easy as to copy paste concepts of methods, later the Scrum Agile methodology is explained in an overview and interesting cases studies of large enterprise and business non-software firms are mentioned.

6.2.1 Mindset and Definition

The Agile concept has its roots on the Agile Manifesto summarized in 2001 and are composed of 4 values and 12 principles. Table 4 summarizes on a high level the outcome of the Manifesto, highly focused and descriptive yet adapted to a wider context.

Agile Manifesto			
Values: Prioritize items on the left while recognizing the value of the ones in the right			
Individuals and interactions	> Processes and Tools		
Working software	> comprehensive documentation		
Customer collaboration	> contract negotiation		
Responding to change	> following a plan		
Principles			
Satisfy customer through early and continuous	Welcome changing requirements and harness		
delivery	this to customer competitive advantage.		
Continuous delivery of the product with	Business and Developers working together		
preference towards shorter timescale	through the whole project.		
Trusted motivated and supported individuals get	Face to face as the most efficient and		
projects done.	effective communication method.		
Working Product as primary measure of success	Sustainable development through constant		
	pace of involved team and stakeholders		
Agility enhanced by technical excellence and	Maximizing amount of work not done – An		
good design	essential art.		
Self-organized teams bring about best	Teams regularly reflect, tunes up and adjust		
architectures requirements and designs	to become more effective.		

Table 4Agile Manifesto Summary

However, deducted from the Manifesto, Agile is a mindset and not a methodology by itself, which is perhaps one of the reasons why numerous and alike definitions emerge in the literature, such as:

• Microplanning and project management tool to quickly achieve an adequate final product by connecting developers, managers and customers (Cooper, 2016).

- Concept, philosophy and methodology as an answer to the frustrations from the waterfall process and promotes different deliverables and iterative approaches with shorter cycles (Hajjdiab & Taleb, 2011).
- Iterative incremental evolutionary approach performed by collaborative selforganized teams with governance, cost and time effective manner to meet stakeholder needs. (Kennaley, 2010)

Previously we saw innovation, flexibility and adaptability are key requirements to survive in current hypercompetitive landscape. Therefore, Agile becomes a natural driver to strengthen and focus (having vs doing) internal capabilities and resources such as strategy, structure, processes and human capital (Prastacos et al., 2002).

Optimization for innovation and flexibility can be achieved when hierarchy levels are decentralized into organic webs and collaborative networks empowered by technology and supported by appropriate Agile methodologies (Prastacos et al., 2002).

6.2.2 Adoption challenges and guidelines

Agile teams will undoubtedly encounter strong difficulties while working inside rigid firms, therefore stressing on the importance of leadership-collaboration rather than command-control management (Cockburn & Highsmith, 2001). Nevertheless, Agile is not necessarily for every firm and attempts to force agile into a process centric, optimization based domains is not recommended.

Adopting a mindset requires companies to stop trying to do agile and instead be Agile, which requires understanding the idea of just copying practices and tools might not be enough but rather the continuous efforts to embrace values and principles defined by it (Medinilla, 2012). As a matter of fact, there are some recommended high level guidelines, which are:

- Cross functional teams: Instead of using separated roles teams, get them to be part of the same team to complement each other.
- Iterative and incremental development: Deliver small but meaningful working versions of the products as soon as it is possible.
- Daily meetings: Have efficient, moderated and facilitated daily meetings to get the idea of advance and issues and make team interact often.
- Feature-Driven development: Focus on units of work to incrementally evolve the product through feedback and iteration.
- Shared Planning: Project managers should involve the whole team in the planning process to capitalize on their knowledge and experience.
- Co-location: By having teams in the same place, time interactions diminish, collaboration happens naturally and information is acquired by osmosis.

- Visual management: It is highly recommended to have a visual representation of the status of the work, where information can be shared and accessed easily.
- Agile coach: By involving a consultant with experience, which can groom and facilitate teams, their self-management and effectiveness can be achieved faster.
- Retrospectives: Aligned with one of the principles, the focus on reflecting on actions, give and receive feedback from/to other team members and learning to improve future performance is greatly important.

To adopt an agile methodology requires the involvement of upper management, a characteristic that makes effective deployment challenging (Cohn & Ford, 2003). Common concerns agile practitioners must deal with relate to promising new features to customers, progress tracking, intergroup impact and project finite lapse. In some cases, Agile exercise can also result in top upper management feeling lack of control given among other things by access of control artefacts they have been familiar with.

Another important aspect is the involvement of Human Resources department, which lack of involvement can potentially affect Agile processes by the absence of knowledge about its particularities, mostly related to effectiveness, fulfilment of goals and reporting (Cohn & Ford, 2003). However, by involving HR, proactive work can be done to define a common working methodology to fulfil the department requests and continue project development efforts. Furthermore, HR departments can contribute solving disputes between teams that are unfamiliar or just migrating to Agile methodologies.

6.2.3 Scrum methodology

By bringing the Agile mindset towards a usable tool, many of their core concepts are deployed into various methodologies. On this regard, surveys (West, Gilpin, Grant, & Anderson, 2011) have shown Agile adoption to increase up to 38% in 2010, of which SCRUM has seen usages of 12.3%, almost one third of the total adoption, surpassing known methodologies such as Agile modelling, Extreme programming, Lean, Feature-Drive and Test-Driven development.

There are three main roles considered in the Scrum methodology, with the Project Manager responsibilities distributed among them:

• The product owner: Often sitting on the customer side who is responsible for maximizing return of investment and requirements communication of the product. Moreover, he/she prioritizes the work to be done in each sprint.

- Team: Cross functional focused group of people that develops the product as per the specification of the product owner. Normally with a recommended size of minimum 5 and maximum 9 members.
- Scrum Master: Ensures the methodology is applied properly. This role serves protects and supports the team while also removing impediments

Besides the previously enumerated roles, there are supplementary stakeholders, such as other managers, customers and end users.

Figure 6 offers a descriptive overview of the Scrum methodology composed of roles and artefacts/deliverables (Larman, Deemer, Vodde, & Benefield, 2012).



Figure 6 Scrum overview: Actors, Artefacts and Sprint

Table 5Scrum methodology Artefacts

Artefact	Description
Product	Contains a list of emergent and prioritized customer centric features required
Backlog	to be developed. Evolves through the cycle and comprises the roadmap.
Sprint planning	Meeting to define the sprint goal and the features or tasks that will be
	developed over the duration of the spring.
Sprint Backlog	Contains the selected tasks that were selected to be developed during the
	current sprint.
Daily Scrum	A short meeting (max 15 minutes) designed for the participants to
-	communicate subjects: "What I am working now", "What issues I have" and
	"What will I do next". This improves visibility of the status of the project.
Sprint burn	Allows for the tracking of progress and shows day by day an estimate of how
down chart	much work remains until the team is finished.
Product backlog	Meetings dedicated every sprint to refine the features information with the
refinement	aid of the project owner for future implementations.
Sprint Review	Deep meeting between team and project owner to receive feedback and share
	the advance of the product during the last sprint.
Sprint	Inspect the team work during the sprint, verify what is working and what is
Retrospective	not to adapt and improve by implementing timely changes.

Scrum relies in the usage of diverse artefacts to improve, communication and effectiveness among roles. Table 5 describes artefacts briefly (Larman et al., 2012).

Visual or virtual management is often applied to these artefacts to make information more visible to all team with aims to improve communication flow.

6.2.4 Large enterprise and business implementation

Scholars have performed analysis of projects were Scrum methodology has been applied in Global companies, in diverse projects as well as in distribute development environments (Cristal, Wildt, & Prikladnicki, 2008). Yet in their case implementation demonstrated to be challenging due to the non-agile nature of the global enterprise as well as the difficulty to adapt the mindset of the numerous individuals involved.

Similarly, large organizations struggle while attempting to apply wide agile expansion where just implementing Scrum has not been enough to guarantee success. Researchers discovered that "agile mindset" and "contextual dependencies" are critical to expand agile usage among large organizations (Manen & Vliet, 2014). Their analysis suggested agile main elements to be composed of:

- Trust: Employees take responsibility and are empowered, trusted by management to make decisions. Organizational structure also reflects that trust.
- Continuous improvement: Everyone focus on continuous improvement of processes, people and products. Open to two ways feedback.
- Collaboration: Results achieved through intensive participation of employees thorough the whole organization.

Although agile promotes integration of Business and Technical roles in multicultural teams, there is limited research on the implementation of Agile in strong or pure Business, process based environments. Nevertheless researchers documented the actual implementation of Scrum in a venture capital firm (Sutherland & Altman, 2009) whose business is management, sales, marketing and customer support as opposed to software development.

Furthermore, the Venture firm used two phases for the implementation of Scrum concepts while adapting them to their own reality, for instance by having one week sprints, each Monday retrospectives, daily meetings with exposed online information and flexible user story management where concept of done was loose and resizing and planning constant. Main immediate benefits included team focus and self-management, avoiding previous state were the director had increasing overload to coordinate the business teams and additionally identified potential improvements such as the impediments removal, direction and predictability.

6.3 Agile and Stage-Gate Hybrid

Main contribution of this section lies in the exploration of a recognized best practice and methodology used in the context of business cases to bring products from idea to reality.

First an overview and main characteristics of the robust Stage-Gate methodology is provided to proceed exploring the modern next gen evolution of the method that includes Agile integration mechanisms.

6.3.1 Stage-Gate

Stage-gate is a conceptual and operational guideline, or map, that has the main goal of helping teams to move a new product idea from its conception towards launch. Therefore, it is a blueprint or playbook that aims to improve efficiency and effectiveness for new product development (Cooper, 2008).

Figure 7 shows the internal composition of a stage in the Stage-Gate framework (Cooper, 2008), where each stage has Activities which are procured by the teams to retrieve information, later to perform an integrated analysis on these activities and finally to produce deliverables that are input to the Gate, which acts as an assessment and Go/Kill decision.



Figure 7 Stage-Gate internals: Stages composition

Mainly, Stage-Gate starts with an idea or discovery and the outcome is a post launch review. There are two intermediate phases following discovery before the development gate. Therefore, the methodology considers innovation by itself to be a series of stages with recommended best practices that are needed to be able to reach the following decision points (Cooper, 2008).

Table 6 provides a summarized explanation related to the characteristics of a Stage and a Gate (Cooper, 2008).

Table 6	Stage-Gate	: Stages and	Gates	characteristics
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Stages	Gates	
Reduce key project uncertainties	Mission	Serve as a quality control checkpoint.
through information gathering		
Incremental commitment	Deliverables	Material useful for the decision point,
increases costs of next stages but		visible and based on each gate, agreed upon
diminishes risks.		in the previous one.
Parallel activities involving cross	Criteria	Judgement points, knock out questions and
functional areas		checklist to misfit or prioritize projects
		quickly.
No one area, but rather share	Outputs	Decision to either Go ahead, kill, hold or
responsibility of all departments		recycle the project along with an action plan
involved.		and deliverables for next gate.

Figure 8 illustrates the Five stage Five gate system and how the process flows since the idea inception towards development and post launch (Cooper, 2008).



Figure 8 Stage-Gate diagram: Five stage, five gate system

It is important to understand that Stage-gate process is not linear or rigid, yet the success of its implementation depends on understanding the core concepts and applying them properly, preventing issues such as misplaced governance, bureaucratization and wrong cost cutting implementations to product innovation. Moreover, the system is a business process and should not be confused with research and development or marketing, as per se, activities are parallelized with the governance in the gates defined and efficient therefore allowing time wise decision making processes (Cooper, 2008).

6.3.2 Agile-Stage-Gate

Agile-Stage-Gate hybrid methodology is a way to blend agile and stage-gate to increase flexibility, communication and drive new product development effectively. Related industries such as hardware have started to look at Agile to improve flexibility and

adaptability to the increasingly changing markets and customer requirements (Cooper, 2016).

Table 7 makes a comparison among the key differences between Agile and Stage-Gate methodologies (Cooper, 2016).

	Stages-Gate	Agile
Туре	Macroplanning	Microplanning, Project Management
Scope	Idea to launch	Development and testing, possible pre-
		development
Organization	Cross functional team	Technical team (software developers, engineers)
Decision	Investment model: Go/Kill,	Tactical model: next sprint decisions made by
Model	senior management involved	self-managed team.

Table 7Agile and Stage-Gate comparison

Although Agile was initially develop thinking on the IT industry, Software development is not an isolated activity but rather subprojects in a concurrent, complex environment, which requires initially Agile software methodology to coexist with other project management models (Karlström & Runeson, 2006). Stage-Gate qualities, robustness and capability for early quality control it became a popular system to drive products to market (Cooper, 2008), making it another commonly use methodology. Furthermore, Stage-Gate is a macro process and requires the combination with Project Management micro processes within the stages (Cooper, 2008) which is one of Agile strengths.

There is clear evidence in the literature where large independent software projects in European technology firms used Agile project management methodologies in the context of stage-gate to integrate the development process (Karlström & Runeson, 2006), not without challenges such as interfaces between teams and management attitudes towards Agile principles and the need for strategies such as artefacts sharing, balance between micro-macro planning.

Benefits perceived by these firms by suing Agile-Stage-Gate (Karlström & Runeson, 2006) were an improvement in motivation, communication and control, reporting and better interaction using visual such as burn down charts for metrics and management. Furthermore, planning was improved because of customer feedback by allowing important requirements to be considered earlier.

Another example is Agile methodology combined effectively with Stage-Gate in the traditional manufacturing industry, although it requires important modifications and redefining concepts like Sprint. However, the possibility to present "Protocepts" to access continuous customer feedback represent a valuable evolution for product development in the manufacturing industry (Cooper & Sommer, 2016) and yield benefits such as design flexibility, productivity, communication, coordination, focus and

morale. This approach has achieved dramatic results and constitutes a significant change of thinking.

Interestingly, Stage-Gate next generation methodology has set by itself to adapt some of the concepts of Agile, for instance to be adaptive and flexible through spiral or iterative developments as well as the implementation of sprints and scrums. Figure 9 illustrates the adoption of iteration spirals within Stages (Cooper, 2014).



Figure 9 Agile-Stage-Gate Hybrid: Implementing iterations within Stages

Next-Gen Stage-Gate merges the iterative concept into each stage previous to the gate itself, using context stages and gates that make the execution adaptive by controlling the size of the Stage-Gate method depending on the complexity of the projects (Cooper, 2014).

Agile offers efficiency and focus while Stage-Gate a coordination and cross functional communication mechanism, which make them not only compatible but complementary as well (Karlström & Runeson, 2006).

6.4 Outsourcing Dilemma

Background information related to outsourcing is intended to provide insight into the definition and types of outsourcing, the reason why firms have decided to outsource their services and selection of vendors to fulfil their requirements as well as some dilemmas involved in the process.

The main relationship with the outsourcing tender project management and methodologies of execution is that by itself tender contains aspects handled by Stage gate such as the vendor selection which represents a gate by itself as well as the requirements elicitation and proposed solutions evaluation, common processes Agile methodologies are created to deal with. Furthermore, the concepts will be complemented by highly relevant subjects in our context, such as the lock-in outsourcing and the call for Tender process, which is a unique example of outsourcing.

6.4.1 Definition and Types

Outsourcing is commonly defined as the procurement of services from an external provider instead of developing them in-house. Such services can include Information Systems and Technology (Lacity & Willcocks, 2012), but are not limited to them and can include any other variety of processes such as manufacturing or intermediation.

Outsourcing signifies the possibility of firms to become "Virtual Firms" and dedicated to the improvement of their core business by contracting third parties and vendors to perform their secondary, less critical processes (Lahiri et al., 2008).

In addition, there are different types of outsource methods that fall into the allocation sources and function slicing of the firms (Contractor, Kumar, Kundu, & Pedersen, 2010), having specific configurations related to:

- Organizational mode: in-house development / contract or hire a third party or provider / perform a strategic alliance.
- Geography: Locations driven by benefits of market, cost, environment and culture. Can vary from domestic (same country), nearshore (nearby location) and offshore (far location).



Figure 10 Outsourcing: Allocation choices for value chain activity

Figure 10 (Contractor et al., 2010) illustrates different outsourcing alternatives based on the activity need, desired organizational mode and domestic or global relocation preference.

For Instance, firms can decide to develop in the domestic country by in-house, insourcing, outsource or offshore/nearshore to foreign subsidiary or some third-party providers.

One of the complex questions both practitioners and enterprise executives ask themselves is whether to outsource or not, ultimately a time consuming complex decision, with a multiplicity of factors to consider such as schedule, cost, predictions, vendors characteristics, the economic landscape and the firm's strategy alignment (Abbott & Jones, 2012).

Moreover, the concept of outsourcing is not new and scholars have been researching different ways to solve the most common questions: What? Why?, Where? How?, through the conceptualization and usage of a myriad of both discipline based and development theories such as transaction costs of economics and principal agent (Hätönen & Eriksson, 2009).

However, it has been pointed that the concept of an entirely "virtual" firm with everything outsourced is mode an ideal than a reality (Prastacos et al., 2002). Even though freelance talent and expertise services are useful or in some cases essential, firms need to keep core key business processes to provide continuity, competitiveness uniqueness, the answer lying in having the right balance.

6.4.2 Approaches to selection

Part of the common decisions to make in outsourcing processes, the selection of a vendor represents a multidimensional factor in the decision-making process, given that possibilities can include domestic, near and offshore participants, with diverse strengths and weaknesses.

Characteristics of Offshoring have been widely documented, such as the positive cost effective and access to wider and cheaper talent pool overseas, decrease cost of ownership (Davis, Ein-Dor, R. King, & Torkzadeh, 2006) as well as challenges like the loss of control, confidentiality risks, communication, language and cultural barriers (Kocakülâh, Holzmeyer, & Albin, 2006).

Nearshore, defined as the outsourcing to adjoining country (Steenbeek, Wijngaert, Brand, & Harmsen, 2005) as an alternative to offshore, describe traits such as location closeness, improved relationships and ease of communication, cultural similarities and business environment attractiveness while taking into account important factors such as complexity and environment sustainability (Abbott & Jones, 2012).

Nevertheless, analysing these factors alone is not enough to make an informed decision and recommended approaches include the awareness of the firm to screening pilots, adaptive methods and previous experiences or case studies.

Fortunately, scholars have documented best practices and useful case studies to understand the relevance and subjectivity of factors related to an effective outsourcing experience, such as the experience of various European companies whose decision to offshore in the aftermath changed to a different outsourcing approach based on their various experiences, summarized in Table 8 (Moe, Šmite, Hanssen, & Barney, 2014).

Company	Dolphin	Guppy	Nemo	Dorado
Headquarters	Sweden	Norway	Norway	Sweden
Offshore	India	Vietnam	India	India
Offshore	Large, CMMI 5	Large	Large, CMMI 5	Large
Provider				
Aftermath	Insourcing to	Insourcing to	Insourcing to	Outsourcing to
relationships	Russia	Russia and USA	China	Ukraine
Aftermath	Established	Acquired	Own medium	Small
Provider	small subsidiary	medium sized	sized subsidiary	consultancy
		companies		company

Table 8Case study Results: Outsourcing in Scandinavian firms

Similarly, researchers performed a decade long study on contractual information technology systems and the dynamics and development of contracting, yielding the identification of the awareness and procurement of the firm as preliminary approach to contracting (Heiskanen, Newman, & Similae, 1996). Thus, the type of application required influenced the decision process:

- Routine application: Common to many other businesses and with clear requirements should be acquired through software packages.
- Standard information systems: Varied but detailed requirements and shared functionality across some organizations require software contracting.
- Speculative systems: Very specific with uncertain requirements are best developed in-house.

At the present time, the importance of vendor selection processes have increased (Snir & Hitt, 1999), given the rise of complex outsourcing agreements result of firms intention to diminish risks and secure compliance. In addition, difficulties such as lack of information and assessment capabilities can result in choosing a poor vendor, reducing the benefits or even causing devastating effects that can affect even the enterprise line of business or jeopardize sustainability.
Vendor selection can be supported by formal methods such as the Analytical Hierarchy Process (AHP), which use systematic and logical approach of priorities to rate vendor quality and achieve a consensus decision in reduced time.

Figure 11 represents an example of the AHP method applied for vendor selection in a telecommunication system company (Tam & Tummala, 2001).



Figure 11 Example of AHP decision tree for vendor selection

Consequently, AHP converts complex decision involving multiple people and criteria into an matrix of scale rating indexes taking into account the criteria of different people across the company (Al-Harbi, 2001). Henceforth, vendors are graded for each one of the relevant criteria to calculate an overall priory vector obtained that contains the index of relevance.

Another useful technique to select vendors is the pilot screening (Snir & Hitt, 1999), which proposes a first "pilot" stage consisting of requiring potential vendors to build an initial prototype, analysed afterwards by the company by using a completion threshold.

Moreover, pilot screening mechanism requires a lower payment for the initial pilot, which is intended to be reimbursed at project completion and provides filtering penalty for low quality vendors to drop the process. Inherent risks of the technique include the possibility dismiss good candidates if the threshold is set too high and cancel the project while also selecting inefficient ones if it is too low, however it arguably increases the likeness of selecting an appropriate vendor (Snir & Hitt, 1999).

6.4.3 Call for tenders

Call for tender process is a method of contracting that consists in the open of an official bid and request of proposals (Hochstetter & Cares, 2012) in order to acquire services, externalize or outsource an activity. Notably, this is the preferring way of contracting in certain industries and public institutions in order to promote equal opportunities for all vendors and avoid corruption (Lauesen, 2006).

Interestingly, the literature about tender process is limited and scholars have found problems derived from the practices employed currently in the industry (Hochstetter & Cares, 2012), commonly cited as low quality tender documents and lack of detailed requirements caused by the similarities but singular differences between formal requirements engineering and call for tender requirements. Table 9 summarizes and highlights differences between both processes.

Concept	Requirements Engineering	Call for tender
Product	Software requirements specification	Call for tenders document
Completeness	Assumed the list is complete.	Assumed list is incomplete.
Temporality	After contract sign	Before contract sign
Developer	May have been selected	Will be selected
Result	Constitutes a technical solution	Looks for a technical solution
Focuses	Software requirements	Business goals
Languages	Modelling languages	No modelling languages defined
Actors	Requirements engineers and stakeholders	Customers and providers

 Table 9
 Requirements and Call for tender comparison

Common recommendations to address the issues are gathering organizational needs and estimate budget and times accordingly, specify a proper call for tenders document, publish questions and answer publicly, have clear mechanisms to evaluate and select an offer and negotiate contract properly (Hochstetter & Cares, 2012).

Furthermore the tender process has a great significance, as it supports economic decisions from relevant Governmental institutions, importance that has driven scholars to proposed a standardized and systematized way to handle the process (Hochstetter & Cares, 2014) in hopes that this benefits the management from customers and eases vendors/bidders application and submission of documents.

One special consideration on the tender process is related to commercial of the shelf (COTS) products, which in practice works as not static but rather with extended functionality developed by the supplier on requests from the customer (Lauesen, 2006).

In effect, customers are required to adapt to what is available in the market, in some cases this adding issues related to interoperability given existing monopolies that suppliers might desire, possibly mitigated by explicitly requesting open interfaces during the tender process (Lauesen, 2006).

Furthermore, highly relevant in our context is the example of tenders and COTS related to business applications for the banking sector, where customer must require vendors to integrate the new system to their legacy infrastructure while also depending on the supplier for new features.

7 RESEARCH METHODOLOGY

This Study is performed under the Internship work performed under during a period of five months. Assigned work and training during early time of the internship allowed to shape the scholarly application possibilities in the context of the enterprise, ultimately giving birth to the proposed study.

Research suggests Academic and Internship research training environments can influence interest and scholar productivity, by means of self-efficacy and research expectations (Szymanski, Ozegovic, Phillips, & Briggs-Phillips, 2007).

Furthermore, the emergence of relevant information and case of studies within the framework of the activities urge the need to document the processes while also searching for improvements in a few cases. These characteristics also suggest the research methodology to be based on empirical and raw data analysis as well as case studies.

7.1 Grounded Theory

Grounded theory, also known as the method of constant comparison, was crafted to enable the researcher to generate a relevant theory in connection with empirical data, hence such theory would firmly fit the information and be applicable in the real world context, the main idea consisting on using the coding of and analysing of data alongside its inspection and aiming towards a theory development. (Glaser & Strauss, 2009).

Although grounded theory is defined as a qualitative method, it combines both qualitative interpretative strengths with the logic and systematic analysis in quantitative research (Bryant & Charmaz, 2007).

Coding, or intervention, of the data is an iterative and inductive process which also implements a reductive factor and is performed by the researcher, as the main actor. By exploring fragments of information within the data, these pieces are divided and categorized, grouping similar concepts together while creating new categories as needed. Ultimately the results allows the identification of essences, similarities, trends, descriptions, themes and theories (Dey, 1999).

Grounded theory data coding has been branched into two different schools of thought, the first one elaborated by Glaser, which puts great emphasis on the categorization by conceptualization among incidents, making the coding explain ultimately what is happening in the data and becoming the theory by itself.

The second school of thought is commanded by Strauss and Corbin for whom coding is just the process of analysing the data by making comparisons and asking questions. This school suggests that the nature of comparing is not static but adapts to each type of coding while also proposing constant examination of the processes and their usage while undergoing the research, which is depicted as a laissez-faire oriented perspective, emphasizing on tools and paradigms above a constant comparison, in contrast to Glaser methodology for whom central comparison is the hearth of the analytic coding (Walker & Myrick, 2006).

This study characteristics make it more suitable to an adaptive relaxed coding methodology, without enforcing strict or central categorization comparison and requiring a more flexible technique, given the multiple project management domains involved, which makes the Strauss and Corbin approach better suited in our context.



Figure 12 Adaptation of the Ground theory process to context.

Figure 12 presents an adaptation of the Ground theory process (Urquhart, Lehmann, & Myers, 2010) in the context of the research. The information sources are compiled and identified into initial set of data fragment, which is later coded and analysed in an iterative way to complement the categories thus giving place to the creation of relationships that encompasses the core of the behaviour and theory.

Comparatively there is evidence in the literature that shows the usage of grounded theory within Agile and Information Systems contexts.

For instance, researchers performed an exploratory study of the socio-psychological experiences and how social identity and collective effort is supported by Agile, where participants from diverse software project backgrounds were recruited and subject to semi-structured interviews, which were later analysed in order to document the individual's subjective experiences and subsequently generate an applicable framework Agile (Whitworth & Biddle, 2007).

Similarly the principles of emergence of grounded theory were applied while studying the paradoxes decisions managers are subject to for the IT transformation programs in a Large Bank (R. W. Gregory et al., 2015). Practitioners systematically generated and conceptualized data from interviews carried to experts in relevant key roles within the organization together with the passive participation in meetings and usage of internal materials.

Previously mentioned studies represent valuable proof of the applicability of grounded theory related to the context of IT and Project Management Agile transformation encompassed in this study.

7.2 Case Study

Case studies is a methodology and research strategy to investigate phenomena in a specific context, gathering information from limited entities such as a person or organization and without experimental control (Runeson & Höst, 2009).

There are different research methodologies whose fitness depends on the purpose of the studies, furthermore case studies are defined depending on the typology. Table 10 presents a parallel between the research methodology relationship and typologies of case studies (Runeson & Höst, 2009).

Methodology	Typology	
Exploratory	Interpretive	
Delve and get familiar with the data, it and	Understand phenomena in the context	
try to understand the inner reasons of the	of the participants.	
phenomena occurrence.		
Descriptive		
Showing the phenomena occurrence.		
Explanatory	Positivist	
Provide a reasoning and explanation of the	Search evidence	
problem.		
Improving	Critique	
Ought to provide an improvement of certain	Identify diverse forms of constraints	
aspects of the phenomena as the outcome.	that are hindering processes or abilities.	

Table 10Case studies typology and research methodology

Case studies are widely used as an exploratory method, although descriptive is also common but mostly when phenomena is not the first order of importance but rather a secondary importance event. Explanatory case studies are less common and often composed of transition comparisons, such as the state before and after certain event.

An exploratory/interpretive case study is used for the understanding of the phenomena involved in the transformation of agile, focusing in the use of unstructured interviews and usage of the organization information to explore the issues undergoing in the specific context of the local subsidiary and their business and technical teams to adopt the global guidelines of Agile deployment.

Additionally, Case study methodology can aid in the understanding of how information technology innovation interacts with the organizational context (Seaman, 1999) and are essential to generate conclusions about software engineering tools and methods effectiveness based on factual evidence (Hajjdiab & Taleb, 2011).

7.3 Data gathering and analysis

Consequently, with the explorative nature of the work, grounded theory arises as a fit tool to document and analyse the natural emergence of events and patterns observed during the research process.

The practitioner had consistent participation and involvement was procured among various running projects, participating in weekly meetings and acting as a point of contact between one or many business users. Furthermore, continuous informal interviews and notes were conducted with the Project Manager involved in each one of the observed projects. Figure 13 presents an overview of domains of the projects considered to document the data.



Figure 13 Projects domains

It was mentioned previously the nature of the research was naturally grounded theory, yet the analysis of processes and working style transformation is highly related to the particularities of the multinational subsidiary context and the financial nature of the organization. Therefore, the application of a general and specific case study is desired as well. As a matter of fact, both Grounded theory and Case study research methodologies have shown to be compatible with each other as practitioners have applied them together while performing a study of Information Systems Development Offshoring projects control balancing in a financial services industry, were the use a longitudinal case study with grounded theory procured a category dimension that emerged from the data as well as an integrative process model to aid managers in the periodic configuration of control, then a clear example of the synergy and combined usage of both methodologies (R. Gregory, Beck, & Keil, 2013).

Figure 14 represents the juxtaposition of grounded theory contextual to embedded case studies, adapted to the agile transformation exploration from the holistic vs embedded model (Yin, 2013)



Figure 14 Grounded embedded case study example

This approach is consistent with the recommendations of considering different units of analysis for the case studies in the context to study Agile implementation combined with stage gate product development (Karlström & Runeson, 2006).

Furthermore, data sources included a wide set of elements from the day to day practice and continuous interaction with Managers and IT, as well as special activities involving knowledge management, modelling and standard training procedures. Some of the sources were directly related to specific projects while others were considered as a case to case and situational participation depending on the requirements, roles and responsibilities of individuals within the organization.

Consequently, the output derived of continuous interactions in the wide spectrum of PMO activities provided a rich set, although widely unstructured information, describing the processes, activities, interactions and results of the planning and execution of internal projects.

Table 11 and Table 12 summarize the sources of data gathering and provides a brief explanation of the activities involved to retrieve information while also identifying the relevant experiences considered that support the case study.

Data source	Annotation	Output
Project	Scheduled project	Peculiarities of projects that may affect
Meetings	participant team meetings	standard or recommended path of
	and conference calls.	execution/evaluation.
	Specific presentations from	Differences in the management approach
	third parties. Minutes and	towards cooperation and decision making
	slides.	process.
		Challenges in synergy generation between
		cross functional teams.
Informal	Constant unstructured	Current state of project management
interviews	interviewing of the project	operations.
	managers based on	Hybridization of methodologies.
	requirements or specific	Perception of team towards agile
	needs/events.	integration.
Process	Process documentation and	Management models.
modelling	knowledge management	Simplified business execution.
	structuring.	Complex interactions between
		management and interconnected actors.
Fieldwork	Follow up of roadmap and	Cross cultural management differences.
	goals activities within	Agility in global project executions across
	context of a project.	dependent geographies.

Table 12Secondary data source

Data source	Annotation	Output
Training,	General information related the	Compliance of the business with
Support and	way certain processes work	regulations.
Documentation	within the organization.	Corporate culture deployment.
	Set of internal C2 and C3 level	Project management Governance.
	materials.	Global Agile Governance.
Team Meetings	Internal project management	Team hierarchies. Individual
	team operation meetings for	manager process of leadership.
	activities follow up.	Parallel with other follow up
		implementations.
General purpose	General enterprise meetings to	Symmetry between Global focus
Meetings	perform planning or fulfil	and Headquarter realities.
_	request for certain actions and	Culture of management.
	deployments.	Relationships between Business,
		Operations and Development

As seen in the previous tables, sourcing data strategies were composed on the observation of the way projects were run at a day to day basis and the execution of processes, teamed by the constant collaboration of the Project Managers and Product owners. Consequently, documentation was created for some of the proceedings, which served as an analysis source as well.

Table 13 specifies the roles that were directly involved within the interviewing process as well as their main responsibilities.

Table 13Interviewees Roles

Position/Role	Responsibilities/Involvement		
Head of BPM	Transformation office management, guidelines on agile,		
	feedback and support related to internal documents, new		
	product development, stage-gate related enquiries, top-bottom		
	system and information flow, Agile direct point of contact for		
	global guidelines compatibility and deployment, business		
	terminology and financial processes training, Systems		
	information flows, business and DevOps teams' interaction		
	coordination.		
Senior Project Manager	Tender process for business process outsourcing,		
	management of internal requirements for calls, point of		
	contact for consultation and advice on IT testing, status of		
	business case development.		
BPM Project Manager	Information sharing related to BPM strategy. Delivery of		
	training and support materials. Explanation on interviews and		
	conversion of process owners' knowledge to diagramming.		
Product Owner	Agile walls designer and implementation for BPM,		
	transversal Agile education materials, Outsourcing project		
	advice and type of testing relation.		
Senior System Analyst	System tier architecture guidelines, system requirements,		
	development and infrastructure constraints, IT role request		
	and discovery.		
Software Developers	Execution on planning migration and configuration tasks,		
-	specific system requirements, output, testing and reporting.		

8 FINDINGS AND RESULTS

Information Technology and Security are undoubtedly very important in Financial modern systems development, even though not only the asset of business logic. Project Management and individuals' interactions through the physical and digital landscapes of corporate operation provide a grounded source of information to identify the current state of adoption certain teams and departments have.

This section will present the results and findings related to the Transformation of local teams towards Global Agile policies, the qualities and characteristics found among the team players, best practices of acceptance and issues that challenge the complete adoption of The Headquarters' strategy.

First the Project Governance with Agile Way of Thinking Global guidance policies and Business case development will be explained and associated with the Stage-Gate methodology to illustrate the points of influence, modification and constraint, then a Challenge of Agile transformation by accounting for the grounded observations will be given in three specific dimensions of experimentation, an important case study of outsourcing, very relevant to the Agile-Stage-Gate hybridization is presented deeply and finally a description of the Global Knowledge Management strategies in agile context and their impact are described.

8.1 **Project Governance**

Development of new products, updates of features for competitive purposes, increasing efficiency and diminishing waste and adaptation of software to comply with financial regulations are only some of the reasons companies have to improve their business and maximize client satisfaction. Nevertheless proper Governance policies are required to execute projects, administer results, take decisions and measure effectiveness, among other critical activities of businesses.

The transforming force of the global guidelines whose aim is to transform the execution thorough subsidiaries is explained, later to describe an important phase of the current process that is the business case development. Thus a parallel between agile intentions and current evaluation reality is established as well as the effects global policies can have in the local governance.

8.1.1 Agile Global Guidelines Framework

The European financial multinational enterprise has deployed their global policy involving the adoption of agile as a set of "Agile Global Guidelines Framework" (AGGF), which contains adaptations and best practices as well as the recommended methodology and the standardization meant to bridge countries and business units and find a common language to improve execution of processes.

Main conceptual focus of the [AGGF] is based on the 5Ps: Platform, Processes, Products, Priorities, People. With help of digital transformation needed with IT is as a driver to achieve a convergence in one digital platform strategy. [AGG] describes a model, or framework (Reference) to translate Global Enterprise vision and Strategy to business value and it contains best practices from Agile with implementations experiences along multiple subsidiaries.

[AGGF] evolved to capitalizing on the discovery of fundamental issues such as:

- Different stages (levels): Subsidiaries transformation maturity level compared with The Headquarters.
- Multiple methodologies make communication, promote confusion and inefficiency while also blocking convergence.
- Multiple team collaboration experiences "unaligned autonomy" resulting in lack of synchronization.

Another contribution of [AGGF] is the adaptation of current project and product development processes in the framework of current Initiatives towards the standard concepts of Themes, Epics, Features and Stories, transforming the workflow of the business development initiatives that run in the local firm. Each step down in the ladder contains an iterative approach, where the needed artefacts for the subdivision are specified.

Furthermore, The three main phases: Pre-project, Start-up, Initiation, Execution and Closure are considered for the Governance, yet the execution can be split in several stages, as exposed in Figure 15.





It is important to note that the [AGGF] does not remove the project life cycle but instead adapts it on an iterative methodology. As an approximate analogy Pre-Project and Start up constitutes a part of Themes to Epics, Startup is part of the Epic to Feature definition and initiation/execution/closure is integrated in the Scrum activities.

Moreover, the adaptation or parallel from current Governance practices and methodologies is required for the translation towards [AGGF] tasks, which is presented in Table 14.

Initiative	Duration	Relationship	Description
Request for Change	5 days to 1	Stories	Small modification or enhancements.
(RFC)	month		
Business Initiative	1 to 6	Features/Epics	Changes initiated by front office, no
(BI)	months		IT requirement needed.
Project	12 to 18	Epics/Theme	New products/services launch/large
	months		improvements/initiatives/regulatory
			changes.
Project Cluster	Varying	Epics	Several enhancements or business
(PC)	BI <x<project< td=""><td></td><td>cases grouped together.</td></x<project<>		cases grouped together.
Program	1 to 3 years	Themes	Organizational change executed
			running a set of projects.

 Table 14
 Current Governance practices parallel to [AGGF] tasks

One of the challenges in business execution is to translate the goals, vision and strategy into specific and executable task, which [AGGF] performs in Top to bottom way.

Themes are entire initiatives developed based on a business needs and strategies, making them a high management decision making process and can be composed of one or many "Epics". These next steps Epics are defined with the middle management and teams support. PMO is involved on features and stories as well as in Epics definitions.

Figure 16 shows the team composition suggested by the [AGGF] including Agile Spotify methodology best practices (Kniberg & Ivarsson, 2012), a conceptual model that uses metaphorical words to attempt to generate camaraderie and cohesion.



Figure 16 Teams depicted in Agile Spotify Methodology

Each project owner manages a "Squad" (team) and the union of squads with a special purpose is denominated a "Tribe" who has a lead person. Collaboration among people with same background or expertise from different tribes is called a "Chapter" and has the intention of establishing standardization within the tribe, while "Guilds" are intertribe groups formed around certain interest possible implemented globally.

Figure 17 shows the relationship between Themes, Epics, Features and Teams.



Figure 17 [AGGF] Domain of action of teams within Themes/Epics/Features

Futhermore, there are conceptual mandates defined as: "Single demand", "High performance teams" with a "clear and common purpose" and "autonomy" who use "metrics" for "continous improvement" and stand on "technology" to achieve "crafmantship".

8.1.2 Business case development

The financial enterprise is aware of the constant need for business development thus within its Project Portfolio planning implements an approach of Pre-project phase consisting on business cases validation and requires a set of artefacts to evaluate project feasibility before initiation. The only exception being regulatory requirements, whose approval is mandatory given the critical risk involved in non-compliance which can put

Figure 18 represents a very high simplification example of the process required in Pre-Project stage for the development of a new product.



Figure 18 Product development Pre-Project Phase

(Gustafson, 1999).

Subsidiary has a relatively formal but flexible approach to gatekeeping, with an approach of upper managing serving as gatekeepers but allowing middle management to step-in depending on the situation at hand. For instance, while evaluating an initiative in the first layer of the ladder, upper management might consider assigning PMO to analyse the remaining layers while giving gatekeeper capabilities. While this is a very Agile implementation towards institutions of Networking, it has risks inherent from a Stage-Gate (Cooper, 2008) such as:

- Excess of gatekeepers, not from senior but rather from middle management.
- PMO could tend to become gatekeepers themselves while doing micro as well as project management.

While interviewing about the Initiative implementation, PMO manager would express "Normally Senior Management is in charge of starting the initiatives, but in some cases they delegate the task of performing the Pre-Project Phase to us, as well as the decision-making process although it is ultimately supervised and overviewed by them.

Finally, it is important to mention that the prototyping stage present in the project's context is different than the standard recommendation to filter bidders (Snir & Hitt,

1999). For instance, the automation testing outsource initiative explained further in this chapter implements Prototyping after vendor selection, with the aiming to recognize the benefits the implementation under a real context can bring, as opposed to using it during the tendering stage.

8.2 Agile Integration Challenges

Previously it was mentioned Agile was structured mainly for Software Development teams, but also saw special cases of implementations in pure Business financial companies as well as the Physical production industry through the hybridization with Stage-Gate.

This section has the purpose of showing the nature of the teams and their interactions within the subsidiary, mainly composed into Business, Development, Operation and Middle office.

First the nature and structure of the internal hierarchies will be exposed, as well as the Agile compatibilities and incompatibilities, followed by interesting examples on how the PMO team is tacking the Agile transformation and finally widening the visualization towards the way how subsidiary local teams interact within the framework of internal transnational processes and requirements through distributed specialization.

8.2.1 Business Teams Structure and Flow

Business teams structure is generally hierarchical in Russia, although interviews with project managers have suggested that the Russian Subsidiary corporate culture has a lower power index than of the other companies who have pure Russian workforce because of the European influences and practices.

Nevertheless, the degree of hierarchy exists and its respected in Russia, which makes Agile teams form within the hierarchies. Managers expressed their understanding of Agile teams working effectively thorough Russia, to some extent towards agile teams within a bureaucracy.

Figure 19 depicts the nature of agile teams in complete bureaucracies (1), towards plain simple structure (2) towards agile presents in a bureaucracy (3) and a interoperable network of agile (4) (Denning, 2016).



Figure 19 Agile teams configurations and bureaucracy

The Iterative and Incremental relationships in PM teams depend to some degree on IT Teams related Sprint information and final product/service implementation. The Base is mainly traversal and aligns PMO with IT timeframes, with only specific projects that do not have dependency.

The flow of information is commonly done through these structures:

- Face to face: Mostly used during meetings. Way of providing strong feedback and urgent actions.
- Email: The preferred way of communication, especially because it leaves traces and proof of information that may be consulted later for reference.
- Conference: (Video/Telephone) Mostly used to interact with teams that are located in a different physical location.
- Instant message: Used to rely fast messages without critical nature.

Feedback is represented in two different approaches, the first focused on the business feedback between PMO followed by the PMO Feedback towards IT Managers presented in Figure 20. It is important to establish light measurement controls and follow up, especially on the feedback with IT, this is the key for iterative refinement, complemented by PMO internal feedback processes, enabling capitalization on its improvement.





Figure 20 Flow of Feedback between PMO, IT and Upper Management

As mentioned before, the previous structure depicts the functioning of small agile teams between hierarchies, yet at some levels there are further hierarchies, such as IT Management of 2 levels, whose reason is the need to have an entitled unique manager for the management of outsourced in-house resources from the SystemA vendor.

8.2.2 Cross-functional Integration Complexities

Business team represents functional roles such as stakeholders, customers, project managers, change managers, finance, human resources only cite some. These teams does not necessarily need to be involved in software or application development.

Agile in Software companies represents a different implementation of one done in business teams. Although some methodologies have been implemented successfully in pure business environments (Sutherland & Altman, 2009), the complex financial environment, multiple systems, subsidiaries differences and interdependencies both with locals and foreign systems make the "loose" negative image and contextual dependency (Boehm, 2002) of Agile methods something to take into account.

Nevertheless, the Agile mind set and set of tools and ideas have been attempted to be implemented in other fields such as manufacturing in order to improve B2B of physical products. The bases of Agile can be built upon, but research shows that there is a strong need for customization to be able to apply Agile to other fields others than IT (Cooper & Sommer, 2016).

Even under ideal conditions of software companies implementing the BusDevOps concept is challenging and often BusDev or DevOps alone is easier.

For instance, DevOps are difficult to achieve in the current landscape because of the Infrastructure and IT separation, although communication related processes, such as the SFTP communication or Integration bus are managed by IT, yet security measurements are managed by independent infrastructure team and Databases outsourced, as it will be explained in the last section of this chapter.

Figure 21 depicts a common implementation of Scrum implementation in a middle size software company, which follows the networking nature of Scrum Agile teams, but expands to make Scrum Master multitaskers of more than one project.



Figure 21 Scrum implementation in a Small-sized Software Company

The theoretical proposal of the [AGGF] depends on the BusDevOps, or rather BusDevs to some extent, in order to capitalize of the benefits of communication and efficiency, conversion to self-managed teams and promotion of initiative and empowerment. [AGGF] theoretical proposal is presented in Figure 22.





Figure 22 [AGGF] teams theoretical configuration

How to apply agile mind-set in Business teams gains relevance in our context, because The Russian Subsidiary has a strong business role focus. Although uses internal IT capabilities such as Infrastructure and Software development for strategic development of systems, the direct application of the [AGGF] has the particular challenge of Business teams being group and managed in separate departments from technical teams. In this unique context, there are two options:

- Migration: Completely migrate to BusDevOps, integrating Business with IT.
- Coordination: Coordinate business and IT separate interactions but for them to act as independent teams.

Join IT with business has hierarchical and structural challenges. The context of a financial institution relies on business teams cohesion, by separating Project Management teams in order to integrate it with IT, synergy might suffer and the gains in the new structure might not be relevant considering the Business user might have tasks and responsibilities from various domains and not only the one within the IT team.

There are basically 2 important domains for the Project Management team:

- External: The way to Interact with IT teams.
- Internal: The way they interact as a team of Project Managers. The key in this situation is to identify generic practices in the framework that benefit pure business teams.

Figure 23 illustrates the current PMO interaction with other teams, which are critical for the accomplishment of their roles, which shows a case of agile teams within hierarchies, as mentioned in the previous section.



Figure 23 Interaction between PMO and IT

From one side there is an effort to centralized calls and communications through the routing of PM needs through IT Managers to diminish mitigate the complexities of social networks actors (Barlow et al., 2011), although in many occasions PMO has to establish direct communication with engineers.

Hierarchy existing between the IT Managerial roles, summed to the existence of the second level of command, product of teams in-house which are contracted to the vendor of the SystemA makes efforts to remove such configuration very difficult, given the monopolized dependency generated by the Supplier of SystemA. This is one cases were cultural power distance makes transformation more challenging.

Henceforth, previous situation represents a breakpoint between the naturally Agile IT developers and the PMO team, both which have difficulties to integrate because of structure of command and control, representing an example of interaction between agile teams in a seemingly non agile environments and the potential pitfalls (Gren, Torkar, & Feldt, 2014).

Interviews with PMO Lead suggested that the transformation to full networks is not impossible, but requires a whole Russian Subsidiary change in structure, which is costly and can have resistance due to the dimension of the change.

Furthermore the implementation of BusDevOps in the Russian context must consider Project Managers have small tasks in numerous projects as a responsibility and Agile advocates for product owners to be fully dedicated to the teams, which would be inefficient given the nature of the business, where operations have to interact with business, risk management, middle office and compliance.

The short term reality of the integration might be in accordance with the Water-Scrum-Gate (West et al., 2011) hybridization of the methodology, given the orientation to detail required for the financial multinational business.

8.2.3 Artefacts deployment

PMO uses internal tools to evaluate, measure and centralize project information, nevertheless the main interest of artefacts deployment is the usage of those tools provided by the [AGGF], mainly the best practices for project monitoring and the usage of visual aids to improve information flow through Walls (Robson, 2013).

One of the recommended practices for business groups are visibility and comparison. Visibility means to use to use techniques that make work status, conditions and processes more visible to increase the awareness of team members. Product vision and roadmap are two clear examples of information that business teams use, while the wall system such as Product Backlog and Sprint wall are very effective tools to increase visibility, help prioritizing tasks and identifying bottlenecks.

Comparison relates to the awareness of the IT technology vision product backlogs and roadmaps, to ensure the work among teams is synchronized. On the current status, this is done via a shared Jira sprint and product backlogs.

For optimization projects it can be the case that PMO sees an opportunity faster than everyone. For the products creation, initiatives comes more often from the meetings that are in contact with the client. For example, initiative to relocate the data centre was identified by IT Infrastructure and supported and managed by PMO. No products driven teams, only functional oriented teams. Project Managers shared their experiences during an interview expressing: "Initially we were doing a direct meeting with IT more often while trying to apply the stand-up similar, nevertheless we realized these meetings were not really adding anything to our work and decided to stop". Consequently with the toolkit nature of the guidelines, PMO members are only willing to integrate meaningful exercises in the context of their responsibilities.

Daily stand up practices are virtually non-existent in PMO. An operational meeting, which lasts one hour is executed every 1 or 2 weeks and project managers provide an extensive status of the tasks assigned to them. Team recognized this process to be "heavy" and sometimes the high amount of information "difficult to digest".

Upon enquiring about the possibility of project managers to use a centralized repository or software to keep project status updates, PMO lead mentioned: "I understand that sometimes these tools can be useful, nevertheless we are afraid by giving once recurrent task more to our team members, it can become a burden that can affect the development of their activities without not being certain that such centralization would really provide value" and added "There is a centralized portal where we have the follow up of the most important key indicators for project success and we enquire managers about certain data only when required, for example when we suspect a project might be falling behind".

Retrospectives are handled in a very informal manner and only when required, most likely because Human Resources In The Russian Subsidiary adopts an innovative way to motivate, follow up and give feedback to everyone. Currently the workforce, include PMO, follows up these practices internally.

Interestingly, after proper analysis of [AGGF] and Knowledge Management campaign, the following best practices emerged to adopt OBEYA (Javadi, Shahbazi, & Jackson, 2012):

- Pilot Business Process Management project is using its independent wall. Which a high importance this project has the leisure of using space to implement their Spring and Backlog.
- Usage of a Strategic Wall, stating the projects to be executed during Q1 to Q4, shared with other business teams.
- Usage of a Quarterly (two quarters at the same time), to analyse every PMO project's advance through every month and identify projects that might be at risk by using a pink marker.
- Operation wall serves as a way to report basic operations being done, yet it is barely used, not very dynamic and the recommendation is for it to be removed or integrated in another wall to free space for other uses.

Figure 24 is a model representation of the physical version of the Strategic walls used by a Tribe of business teams.



Figure 24 Model of the Strategic Yearly Wall

At the time of this study, the PMO had just started the pilot of performing meetings in front of the Quarterly sprint wall and the improvements were dramatic. Meeting duration was only slightly diminish, but team members interaction was richer and the meting dynamic, making managers feel more connected with the project while visualizing. Figure 25 is a model based on the physical version of the Quarterly Wall.



Figure 25 Model of the Quarterly Wall

Nevertheless the time duration was still high and upon recommendations the PMO lead acknowledged the need to diminish the reporting rate from two weeks to a more frequent pace, yet they were still studying the timings.

Lastly, sprint planning is always performed in a weekly meeting with the IT Managers, verifying the IT resourced have been assigned. PMO Lead expressed: "The reason why we decided to have 1 week sprints is that it allows better visibility of the IT resources assignation and their hours of dedication to our tasks. It has happened that they have mistakenly added or removed hours or activities and we were able to react on time because of the weekly sprint planning frequency".

Despite the established visual options for visual walls, an effort was made to propose an alternative that could be used to gather effectively the tasks executed by the Project Managers. Consequently, empiric research of best practices used by Agile teams (Robson, 2013) indicated a wide set of hybrid physical wall examples with a particular set of characteristics employed by teams depending on their needs and strength or weaknesses and even to the point of looking for simplification of their features and internal coding of information (Goldstein, 2011).

Consequently, a model was proposed to PMO, based on the "Vortex wall" (thoughtworks, 2013), which is illustrated in Figure 26.



Figure 26 Agile Vortex wall adaptation

The Vortex wall separated the Project Managers work units in arc of influences, depending on the amount of team members by quadrants. Epic division is used as an arrow emerging from the bullseye toward the circumference and concentric circles separate the phases the tasks can go through. Three types of tasks are managed in this model:

- Features: Epic's specific tasks to develop, for example to improve a specific system functionality.
- Impediments: Issues that can slow or affect the execution of epic's tasks, for instance dependencies between resources or constraints arising from other project's execution.
- Improvements: Innovations that emerge during planning and spring executions, such as developments that benefit the firm's strategical capabilities and competitive advantages.

Despite showing a clear interest for the structure of the wall PMO Leads expressed their doubt regarding the practical possibility to implement such wall, mainly because of the volume of information managed by Project Managers, besides the amount of team members present in the team, which would make information overloaded. To illustrante this thinking logic within the team's context and using conservative amounts: Each project manager can have more than 5 epics at each time, with each Epic containing 3 features in addition, these numbers applied to a conservative team size of 6 members would require 6 arcs of influence, 30 arrows (epics) and 60 taks. Clearly, such wall is not apropriate for PMO context and is better suited for focused sprints of medium sized teams executing an limited amount of epics at a time.

8.2.4 Distributed specialization

Besides the operations conducted domestically in the subsidiary, the Multinational has to perform diverse interactions on a transnational level that complement the nature of the business in Russia with other subsidiaries.

Furthermore, a distributed IT specialization has been adopted in the way of global insourcing (Moe et al., 2014) through a subsidiary in Europe, locating most engineers in charge of Database management in Poland. Although such operation operational costs with benefits of scale and centralization of knowledge, it has shown it is not as straightforward or clear as it should be.

Examples of issues in this regard exists because of the cultural differences between the subsidiary and Russia. Both IT and Project Managers expressed their concern when one of the operations needed for Go-Live of a product integration could not be fully tested because of unscheduled working execution of infrastructure. Additionally Headquarters' intentions to fully distribute IT operations have also met legal constraints, as under the laws of the Russian Federation, financial information is considered a sensitive and should be storage in physical locations inside Russia. Thus this requires datacentres to be located locally while engineers who manage them have to be present in Poland and Infrastructure and Security enforcers sitting in Moscow, which adds another layer of complexity to the interactions and prevents DevOps integration.

On the other side, Business interoperability is paramount and prioritized between The Headquarters and The Russian Subsidiary, for instance integration mechanisms requiring transactions and financial information to be transmitted abroad are constantly improved to which The Russian Subsidiary has to adapt. Having internal systems compatible only with Russia financial infrastructure, software modification must be made to integrate globally.

To further illustrate this distributed operability, Figure 27 presents a diagram with a high level architecture of the system integration.



Figure 27 IT high level Distributed Interoperability Architecture

Moreover, the request to migrate a core component from the system architecture created a Scrum of Scrums (Sutherland, Viktorov, Blount, & Puntikov, 2007) chain event that required to assign project managers in every system that was affected by the update to manage the cross-functional business and IT team that would test proper deployment and functioning. Although in some occasions distributed scrum is not advised (Cohn & Ford, 2003), there are situations such as the experienced in this case were prompt reaction and agile practices are useful.

Russian Subsidiary process to handle this situation is highly Agile, with initial contact made with the SystemA responsible who forwards the request to PMO and a responsible is assigned in The Russian Subsidiary, performing scheduled conference call, and email communication updates with The Headquarters. Figure 28 shows the degree of complexity involved in the case study, where The Russian system was the one with lowest degree of disruption with the update.



Figure 28 Case Study: Core Migration Interoperability

Observations of the process suggested although there were issues found during the migration, the degree of cohesion between teams and PMO direct communication with Headquarters leveraged an testing and Go-Live event and was positively commented by the migration centralized project manager.

The Russian Subsidiary PMO and IT local teams demonstrated to have high interoperability capabilities and flexibility (Manen & Vliet, 2014) across boundaries executing temporary dynamic non-sprint team to deal with the migration of a multinational system.

8.3 Business cases testing automation outsourcing

The purpose of this section is to show a very specific example that applies to Agile methodology along with an Agile-Stage-Gate hybrid. The cross functional team in charge of the project and their internal working is explored and the pitfalls in relation to the creation of tender process and complexities of the project itself described and analysed.

Background information related to the reasons why the Subsidiary decided to undergo this project is explained along with the special characteristics of this rather uncommon and complex project. Chronology is presented to depict the steps followed in the process, then a very deep disagreement related to knowledge and requirements between the members is explained and its root. Finally, the real reasons for the bidder choice and the aftermath end the case.

8.3.1 Business motivation

The Subsidiary internal platform is composed of three interconnected systems, in order or importance: SystemA (Core system), SystemF (Trading) and SystemI (Reconciliation). This internal platform is hosted entirely in Russia and has interoperability with other Global systems.

PMO, Finance and IT are currently acting as a workforce to evaluate the possibility to Automate some of the bank internal processes. Under current circumstances functionalities that are modified or implemented in local systems must be tested by the business units and middle management, who are often requested to work during the weekends and testing each case manually. This generates an extra investment of resources like time and money for the organization.

Therefore, the Outsourcing Requirement was approved for the start of a "Business case elicitation" for the "evaluation of the local marketplace capabilities and costs" to perform "Main tests cases automation".

The subsidiary has divided the project in an Agile-Stage-Gate alike hybrid process in accordance with the Multinational regional IT head. Figure 29 presents the distribution of the project and more importantly, the scope and dimension of the research, as the Study domain phase took First (Q1) and Second (Q2) quarters of the year.





Figure 29 Testing Automation Project with Stage-Gate

8.3.2 Special characteristics

The automation vendor selection is an unique type of Software Development outsourcing project, as it has some particular characteristics that make it similar but also different than building software from scratch (Hochstetter & Cares, 2012).

Table 15	Tender for Testing	Automation: Proje	ect complexities
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Complexity	Reason		
Existing software	Pre-existing irreplaceable in place, constantly		
integration	development/modification by in-house and SystemA vendor		
	internally located Engineers		
Restricted automation	Core platform is Desktop Client technology and depends heavily on		
	SystemA software vendor third party software		
Interoperability	Interoperability between domestic and global platform must be		
	ensured.		
Framework	A framework is needed for the ease of future testing case definition		
development	and implementation.		
Knowledge transfer	Knowledge Management transferring to internal engineers must be		
	performed by the vendor to avoid lock-in.		
Non-standard use	Confidential and customized use cases related to the subsidiary		
cases	business are required to automate.		
Internal tool usage	Unified Functional Testing suite usage is required given previous		
mandatory	work has been made documenting business processes execution in it.		
Domestic outsourcing	Only software suppliers from the Russian Federation, in order of		
(Contractor et al.,	importance:		
2010)	- SystemA is only available in the domestic market.		
	- Privacy legal policies in Russia.		
	- No Language barrier and inexistent culture distance.		

Table 15 summarizes the project's characteristics and complexities and the reason for them to appear, while showing the internal processes are built on top of an ecosystem composing three systems: SystemA, SystemF and SystemI.

Considering such characteristics, it is clear the project has a much higher complexity than a standard software development process, given pre-existence of legacy systems, interoperability and constraint technological requirements.

Although scholars have performed considerable research on the Outsourcing subject, the specialization of testing automation has not been received attention yet. Arguably, testing automation differs greatly in complex environments such as the subsidiary platform.

8.3.3 Tendering Chronology

There was a schedule deadline but not a fix chronogram and no defined milestones, showing an "on the way" improvisation of the process which seemed a result of Agile incorrect execution of principles (Paulk, 2002) probably encouraged by special bureaucracy constraints. The natural evolution of the process created the subsequent execution map:

- 0. Outsourcing requirement approval (special diagram and internal process fulfilled previously)
- 1. Project creation in PMO Agenda.
- 2. Meeting between the Interested parties
- 3. Socializing of tender request
 - a. Contact possible candidate companies (not public open tender)
 - b. Request phone call follow up
 - c. Propose simple test cases implementations (IT)
- 4. Analysing options
 - a. Verify quality of proposals received
 - b. Request presentations (in office) from vendors
- 5. Shortlisting
 - a. Preliminary discussion of suitable vendors.
 - b. Critical factors estimation
- 6. Business case delivery to Regional IT head for approval
- 7. Vendor final selection.
- 8. Contract signing
- 9. Project kick-off

There is a significant missing point in the previous sequence, namely the lack of the tender document creation. Interestingly, although the creation of the tender document is a widely spread empirical practice in the industry (Hochstetter & Cares, 2012), yet no best practices are encouraged and example of documents can vary significantly ("Convocatoria electrónica, licitación pública internacional abierta, PEMEX.," 2013;

"Hartlepool Borough Council Invitation to Quote (ITQ)," 2011; "Tender for Outsourcing of Payroll and ESS (myPortal)," 2016) depending on the application, industry, product requested among other causes.

After discussions with the project managers, the conclusion come to the point that contacting possible vendors was priority and only providing "Software Automation of SystemA" request would be enough.

As expected, the potential bidders came back declaring their impossibility of giving a proposal without having more information about the requirements of the tender. Henceforth Project Managers and IT Managers had to work in conjunction and create a "Proposed simple test case implementations", which IT managers argued was enough for the vendors to provide estimations.

Project Managers decided the proposals content and costs defined within were not enough to evaluate the quality or degree of compatibility of the vendors with the project, subsequently decided to perform a face to face interview with representatives of each company to asses better their capabilities and identify the strengths and weaknesses in a more direct way while also having the opportunity to enquire about specific experiences, projects and skillsets available in their companies.

Finally, the vendor filtering was performed by individuals scoring of the perceptions related to each option performance during the process and their order and reasons of preferences communicated to upper management, which in turn approved the project business case as the gate.

8.3.4 Testing Automation Knowledge

One of the important Agile principles of individual interactions is affected by the lack of knowledge synchronization between teams, example exposed in the case of the understanding of "Testing Automation" best practices (Chillarege, 1999) among the PMO and IT teams. This concept is explained and summarized by considering one of the core concepts required to be understood in the context of the project: "Testing Automation".

Nevertheless, understanding the technical characteristic of this subject is out of the scope of the study, to which a this is a high-level description focused on the causes of misunderstanding.

Definition of software testing varies around the spectrum, but a very accurate and professional definition is related to the philosophy and art of testing itself, where it may be considered wise to combine with the empirical use of the term's objective, therefore: "Testing is the process of executing a program with the intent of finding errors" (Myers, Sandler, & Badgett, 2011), where "error" is considered to be a behaviour that affects the functionality of software negatively.

Furthermore, there are various types of testing but for our context we will consider a high level classification between White and Black box categories, parting from the formulation of two different but related concepts (V&V) (Nidhra & Dondeti, 2012):

- Validation: Are we building the right software? Business-Facing. Often through Black box.
- Verification: Are we building the software right? Technology-Facing. Often through White box.

The most relevant information related to the White and Black box categories is presented in Table 16, with the aim of establishing the parallel between both.

Table 16Comparison between BlackBox and WhiteBox testing

Comparison	BlackBox	WhiteBox	
Representation	Input BlackBox	Test Case Input	
Common Type	Functional	Structural / Glass	
Access	No access to system internals	Full access to system code	
Validation	Output expected from Input	Function behaviour	
Test cases	Business case logic, System specification	Function logic and data flows, Implementation	
Spectrum	Integration, System, Acceptance, Alfa, Beta, Regression	Unit, Integration, Alfa, Regression	
Roles Priority	Tester > Customer > Programmer	Programmer > Tester	
Temporality	Whole software lifecycle	Upon need for errors/wrong	
		assumptions inside the code	



Figure 30 Testing Hierarchies and Automation applicability

Although not exhaustive, the previous information allows an understanding of the applicability of both techniques and Figure 30 offers a hierarchy overview of the typology with emphasis of the dimension expected during software automation events.

Testing automation can be applied to the whole hierarchy but business cases automation is most effective with Regression and Functional subcategories as opposed to unit testing which should be done during software development itself assumption supported by empiric experience from practitioners as well (Mauer, 2015).

Finally, in order to understand the root of the problem framed in the Agile testing quadrants taxonomy present in Figure 31 (Cignity, 2017; Crispin & Gregory, 2009; Nisbet, 2014) that identifies the relationships between Business-Technology and Team-Product. This testing automation project focus relies in Functional and simulations (Q2) and Components and API (Q1) in order of priorities.



Figure 31 Agile Automation – Agile Test Quadrants

Furthermore, Figure 32 shows how different testing focuses/phases relate to each other on a general level in the testing dimensions. Operational, Regression and System type of testing group more specific testing tasks.



Figure 32 Testing types grouping and quadrants categories

Previous information allows to understand the Testing possibilities and what type of requirements and type of testing is needed, something which Project Managers and IT Managers could not agree on. While IT Managers wanted to perform Q1-Regression-WhiteBox, Project Managers recommended the Q2-Functional-BlackBox type of testing. Tender and user case requirements vary dramatically between those 2 different types of testing.

Whereas disagreement was intentional, bureaucratic or simply lack of knowledge is a matter of debate without enough information to emit an informed position in this case.

8.3.5 Vendor selection

Given the nature of the tender and the specific requirements, the tender was not open to the public. Instead a set of possible vendors were identified:

- VendorA: Current SystemA supplier, strong position in market. Existing relationship, but increasing risk of further vendor lock-in (Lauesen, 2006).
- VendorPL: Middle size, relatively mature company.
- VendorITA: Previously part of VendorA, now an independent company.
- VendorIP: Small and young provider.

Vendor	Proposal	Interview
VendorA	Not received.	Meeting consisted of a demo of
		Whitebox testing.
		Development environment testing
		Good exposure to SystemA environment.
VendorPL	Oriented and structured.	Strong technical lead.
	Experience in financial sector	Breadth sound technology experience.
	Risk and Constraints.	Previous architecture presented.
	Objectives and detailed	No Experience with SystemA.
	implementation description.	Strong experience with Test Automation.
	Costs by stages, and of Stage1	
	Certified Experts assigned	
	High cost.	
VendorITA	Not received.	Strong SystemA experience.
		No automation experience.
		Good CRM focus.
		Good example, environment, reporting
VendorIP	Marketing oriented.	No experience with SystemA.
	No mention of experience in	Limited automation experience.
	SystemA or Test Automation.	Improvisation and missing information.
	Experience in Financial sector	Lack of experience with financial
	Costs by Stages, Role, Stage1.	institutions.
	Most competitive price.	

Table 17	Bidders	perceived	performance

Initial contact was carried out and conferences calls performed. Upon direct analysis of interview and proposals, interviews were conducted to the Project Manager and Product Owner, consolidating the information from the vendors in Table 17.

After the "Simple test case implementations" requirements were shared, proposals documents were received by only a few of the vendors, yet all the vendors assisted to the face to face interview conducted by Tendering team.

For the next step, Finance, IT and PMO gathered and applied the internal methodology to measure the criteria and weights corresponding to what that each functional area considered important element for vendor selection and later proceed to rate each vendor individually. Table 18 shows the criteria and their weights given by the Tender project Team and Table 19 the final rating given to vendors by each functional area.

Criteria	IT	РМО	Finance	Average
Cost	0.1	0.1	0.4	0.2
Process	0.32	0.2	0.2	0.24
Instrument	0.16	0.4	0.15	0.24
Internal	0.32	0.2	0.15	0.22
Duration	0.1	0.1	0.1	0.10
	1	1	1	1

Table 18Tender: Weights given by functional areas

Evaluator	Criteria	VendorIP		VendorA		VendorIT		VendorPL	
Finance	Cost	10	2.0	5.1	1	2	0.4	3.2	0.6
IT	Process	7	1.7	5	1.2	9	2.2	2	0.5
РМО	Instrument	5	1.2	3	0.7	3	0.7	9	2.1
IT	Internal	7	1.6	10	2.2	9	2.0	1	0.2
PMO	Duration	7	0.7	4	0.3	7	0.7	7	0.7
			7,12		5,46		5,98		4,17

Table 19Tender: Vendor evaluation

This result is surprising because of many factors, especially considering that previous interviews with PMO and analysis of performance had shown a dramatically different perception of the vendors.

The result are proof of the degree of division and lack of synchronization existing between the decision maker functional teams and its participants, result of the lack of consensus specially towards the real requirements of the automation project.

Particularly interesting is the result of VendorPL, often defined by PMO as the best overall perceived vendor in terms of experience and which was reportedly disregarded IT managers because of the limited experience with SystemA. Additionally, a perceived
low performer VendorIP was surprisingly the one with stronger punctuation in the system.

The degree of compromise provided by IT was much lower than the PMO participants, showing lack of flexibility to accept the recommendations provided by their colleagues and the failure to adapt to the change (Paulk, 2002) of orientation from WhiteBox towards BlackBox testing, situation that came earlier during the post interview meetings, where due to the lack of consensus, difficulty to communicate and slow pace advance of the Stage, project managers would express "The constraints we have are bureaucratic" with certain degree of frustration, being this one of the "fears" expressed for Stage-Gate implementations (Cooper, 2008).

8.3.6 Aftermath

Business case was approved by top management at the gates and outlived the evaluation phase, towards the stage of prototyping. Nevertheless, PMO remains sceptic about the project future and Project Managers vented their concern on various matters.

In first place, the strong perception that PMO involvement in the Tender process was to serve as an "adviser" opposed as "decision making" body, which greatly limited the enforcing of their opinion against the ones from IT management. This is a valuable occurrence of a few inter related issues:

- Cross-functional weaknesses present in the Agile flexible but "loose" environment that did not define a clear product owner and intended participation of the members
- Lack of consensus, not mitigated even by an AHP likewise (Al-Harbi, 2001) vendor selection methodology, affecting deliverables to the gate.
- Lack of understanding with the gatekeepers about expectations of information needed at the gate in addition to deficient tender Governance (Cooper, 2008) policies, which resulted in a decision based on a relatively simple factor that did not need a semester of effort.

Additionally, project managers team expressed financial uncertainty related to the outcome, citing: "Only action remaining is waiting and see what will happen in the upcoming stage, although we fear the likelihood of a relevant delivery to be made remains low", also "The investment has a high probability of being wasted in an deficient tender whose main point for selection was price, instead of adequacy" and "Yet the amount of investment given our current level of financial operations is relatively low and top management might think they can have the leisure of failing".

Moreover, an important perspective expressed by the Project Manager of the Tender project suggested that even if VendorPL was the most adequate bidder, the IT Managers advocated against it since the start of the negotiations, thus the success of the project would not be possible without IT department collaboration during the execution of the pilot phase, making the destiny of that cooperation doomed without synergy from the start.

Equally important, the Project Manager expressed: "The Head of PMO has been working with the IT managers for more than a decade, strengthening their trust and influencing his/her final decision towards the IT Managers recommendations, something that even strong arguments cannot easily modify". This is a very clear example of the cultural dimension (Hofstede et al., 2010) of Collectivism affects decision making in Russian culture aided by the Power Distance effect on both Product Owner and Project Manager that would not question the decision of the PMO Head even when they clearly disagreed with it.

Lastly, PMO expressed its concern that the main factor recommended by IT management was price, also emphasizing that this automation project would require the progressive involvement of the already occupied IT managers and their development groups, which affected their desire to make the project a reality and biased their decision of vendor evaluation.

8.4 Knowledge Management Strategies

Establish knowledge management importance (Prastacos et al., 2002), it is a matter of great importance for a Financial services multinational to adopt best practices in knowledge management and internal democratization within the frame of confidentiality levels.

By acquiring knowledge by means of appropriation, understanding and reproduction of best work practices across subsidiaries and their circuit of reproduction, employees from other geographies can attempt to recreate good effects and results observed by comparing their social structures and conditions to the ones shared (Schultze & Boland, 2000), even if national cultures among the subsidiaries are different (Scheffknecht, 2011).

8.4.1 Internal Agile Marketing

Indirect usage technology for the spread of information is sought ongoing strategy implemented by The Headquarters in the subsidiaries. Consequently, a focused Marketing campaign including but not limited to Dutch, French, Polish, Romanian and Russian subsidiaries was implemented to promote Agile.

Accordingly, internal marketing professionals conducted an interaction with employees across different geographies while enquiring them regarding their usage of Agile in their daily life and its benefits. Such video was shared globally and generated a positive reactions among employees, advocating curiosity and interest in the subject. This first phase had an international focus of Agile subject awareness and cultural integration.

Without delay, the second phase saw the birth of an internal Russian Subsidiary Campaign implemented with a stronger focus on knowledge awareness, aimed to generate Agile principles knowledge acquisition. Moreover, current experienced product owners and scrum masters were engaged in highly cultural adapted videos that exploited the familiarities of the day to day difficulties team members from different functional teams have while adopting Agile practices, highlighting occurrences of wrong understanding and usage of concepts, activities and tasks and how to correct them and use such tools properly.

A third type of knowledge imparting using physical tools was present for a longer span of time starting before first campaign and ongoing after the second. This included the usage of physical visualization tools such as drawings and messages written in physical places around the office.

Figure 33 illustrates the different Agile campaigns intended to ease transformation of business and technical teams towards one working Agile.



Figure 33 Transformation Agile campaigns

Undoubtedly, the three level campaign caused a transformation effect through the human elements in different geographies, further enhanced by the usage of culturally effective communication to promote accurate knowledge and finally complemented the process by making the core of agile part of the workforce daily life.

8.4.2 Community of Practices

Large organizations whose projects rely on the cooperation between inter disciplinary, geographical and depending teams can benefit from informal, cross-team communities (Kahkonen, 2004). The main idea behind the Community of Practice theory is that there is valuable knowledge being groomed inside these spaces, with experiences documented by certain teams to be potentially useful to tackle common issues that span across others.

The Enterprise has included a double path plan to generate information and awareness by integrating Information Technology that provides improved far reaching capabilities and sharing of strategic type level knowledge (Bourdreau & Couillard, 1999). The knowledge model is simplified on a high level and focused on Agile context in Figure 34.



Figure 34 Agile Community of Practice Strategy

The Intranet can only be acceded within the company premises around the world with communities and portals being part of its contents. Portals store information related to specific business activities such as project's characteristics and Agile processes follow up and measurement within specific workgroups like Project Managers. Communities can be either official or unofficial and aimed to become the transversal informal interaction across the organization, aiming to share information of interest among group of employees without geographic boundaries. The official Agile community focus on sharing content such as news, research, state of the art information and employees' experiences implementing Agile methodologies in their context, a key recommendation of the reproduction or avoidance of knowledge work practices (Schultze & Boland, 2000).

The Public domain comprises of interconnected systems accessible through the internet, with restricted access through internal role validation mechanisms such as the

institutional email account. The Training subdivision is focused on delivering knowledge entirely related to the role and specializing in skills required for the enterprise to ensure its compliance within specific business and local regulations. Transformation system is completely dedicated to evangelize (Arman & Adair, 2012) on the adoption of the Enterprise's Globally standardized working methodology and contains the guidelines and toolkits to aid teams migrating to the new methodology along with a limited community which serves mostly as tool for discussions related to the current transformation strategy.

Communities in both domains act as different enablers, internal one providing a general way of learning within Agile frameworks while the public allows a temporary sharing of current execution information specific to the company's global agile strategy, ensuring the increased attention and importance that communication deserve in a multinational enterprise (Prastacos et al., 2002).

Particularly, one of the identified objectives of the Global Headquarters is not only the identification and follow up of Agile implementation status, but specially the weaknesses the internal community can find within the current Global guidelines of Agile (Morampudi & Raj, 2013). By documenting the experiences, potential pitfalls or inconsistencies, as well as related incompatibilities in the realities of certain subsidiaries, Headquarters can review and improve the guidelines further, as it is currently doing at the moment.

9 CONCLUSIONS

Applying Agile methodologies even with best practices is not an easy task and discipline with good intentions do not guarantee immediate success. Furthermore, the process is clearly strained by the Multinational standardization and deployment complexities arising from geographical and cross-cultural influences of the subsidiaries strengthen by the domestic country realities, especially in sensitive industries such as financial services.

Sources of importance during data gathering were composed of activities that required constant and direct communication with project managers as well as the access to the Project Management Governance and Global Agile Guideline documents. Relevant contributions were provided from:

- Informal semi structured interviews: Direct communication with project managers as unofficial meetings, lunch breaks and normal interactions. This component allowed the emergence of information based on opinions, perspectives and contractual evidence.
- Research assignments in the field of Agile deployment and testing automation provided valuable outputs from an informative but passive standpoint. The researcher was not involved into taking any type of decision, but rather use theoretical and empirical research to answer questions form Project Managers, such as:
 - Documenting the parallels between actual subsidiary's Governance against Headquarters guidelines
 - Asset and explain the proper definition of Testing Automation and its application landscape.
- Fieldwork: Day to day activities to coordinate projects, combined with the process modelling and documentation. This required a direct involvement of the researcher in decision making activities and knowledge management generation.

Data acquisition during any type of meetings was handicapped by language barriers, and required follow up by interviews with Project Managers. The three main categories of sourcing were involved in the case study as whole and in the internal cases of tender of testing automation and cross-border agile operations.

Interestingly, fieldwork sourcing category expanded through the borders of Grounded Theory and acquired characteristics of embedded Action Research methodology, resulting in a combined complementary usage of both methods (Dick, 2003), yet with very limited decision making process on the Agile deployment context of the study.

9.1 Subsidiary's environment influences adoption

Power dimension experienced in Russia has a deep impact in the adoption of networking agile hierarchies required for Agile internal global policies, which would entitle a considerable structure change and could experience strong resistance from top management.

Financial sector is a sensible, highly regulated and Russia's central bank policies, besides the policy for in-border storage of the information creates unavoidable requests that must be fulfilled otherwise be subject to fines or even license loss to conduct business in the country. Henceforth, the dynamism and synergy is diminished given the prohibitive application of certain strategies or standardized practices from global companies.

The subsidiary division of project evaluations per quarter and monitoring for status is an edge for a financial institution, which protects relatively well against the "Black Swan" events (Taleb, 2010) and thus improving the firm's maneuverability around unexpected and dangerous market shifts, although the nature of the business including multinational but at the same time specific business developments such as the case of Russia and the sensitive nature of the business makes it difficult to have a failure-proof Agile subsidiary in Russia.

The Russian subsidiary is considered only slightly bigger than a SME, with employees working together for decades. This collaboration generate strong laces of trust in Collective cultures, with managers of similar levels taking each other's opinions in strong consideration, sometimes over plausible decisions. Consequently, a clear exemplification lies on the Project Manager and Product Owner if the Tendering project, whose opinions and considerations were taken in a lower stand by upper management in contrast with those of the IT Managers, who are hierarchical and time wise longer standing employees.

Furthermore, the importance of Information Technology for the Multinational's financial systems, exacerbated by the protective data policies of the Russian Federation and vendor dependencies, have given an extraordinary hierarchical power to IT departments and specially their managers, who can easily leverage certain decision making processes towards their preferences. Coupled with the Power Index, the collaboration divide between business and technical teams is augmented, making considerable difficult to perform a team transformation to Tribes/Squards or BussDevOps cross-functional agile teams.

9.2 Knowledge Management is key for Agile deployment

Understandings of the importance of Knowledge Management for Agile transformation was observed, exemplified by actions such as the creation of an independent platform to institutionalize the new working methodology although usage and awareness could be improved with better promotion. Furthermore, the intranet and attempts to implement networking and communities around diverse themes, one of them being Agile, gives further proof that Information is the core business of the organization.

Knowledge Management and the complex characteristics of information do not prevent both Global headquarters and Russian Subsidiary from implementing evolving Information Systems (Bourdreau & Couillard, 1999) supported Knowledge Management strategies, further evolving its Global guidelines to synch the execution and applicability through the organizational landscape.

Furthermore, the Global company is making use of effective marketing materials that empower employees to familiarize with the concepts of Agile and try to implement the principles in their day to day life, in addition to making employees actors of their own learning processes through indirect recognition by being protagonists of teachings and deployments.

Flexibility in the implementation of Agile and promoting of the toolkit nature of the methodology instead of a dogma, makes the framework more adaptable to enable IT work and collaboration with business, instrumental to empower standardization through the global firm's Landscape.

Ultimately, the usage of communities of practice is an direct attempt to bridge the perceived gap between methodologies variety and unlevelled implementations among the subsidiaries compared to the Headquarters.

9.3 **Business Teams nature importance**

The Headquarters have perform an interesting feat by generating sense of belonging, dynamism and flexibility among The Russian Subsidiary Business teams, fostering the openness and positive attitude towards change. This was explicitly mentioned by one of the Project Managers: "We have a very open corporate culture, were people are listened and taken into account, there are still hierarchies but upper management makes an effort to have policies of open doors. For instance the way of interaction in other Russian financial institutions, specially government ones, would make a strong contrast in hierarchy levels and degree of interaction with ours".

Moreover, by implementing systems of recognition, the cultural dimension of Indulgence is taken into account, motivating Business teams by promoting a culture of project excellence by allowing teams to nominate their projects for regional recognition. As mentioned previously, the ever changing nature and regulations of financial sectors require The Multinational to keep up with the accelerated pace of change, not only with innovation but also compliance. Notably, the degree of global collaboration, cooperation and integration of The Russian Subsidiary with The Headquarters its outstanding. Although Agile guidelines have not been implemented down to the last detail, truly self-managed and tribes and squads emerge on the need, performing a spectacular operational control, planning, time management and activities executions in a significant synchronization with Headquarters. Ultimately, The Russian Subsidiary's Distributed Agile execution feels natural.

Constant training and awareness in relation to Agile practices within the Project Management team have created an open attitude towards the methodology and a friendly reception. The team has adopted the continuous discussion and analysis besides trial and adaptation of the guidelines towards their working environment, yet with a further path to follow.

The PMO, although not being Software technical team, has advanced dramatically in the implementation and adoption of Agile practices, changing 1-2 weeks operational office 1 hour meetings to 1 week stand up 45 minute meeting in the board. For a business team this is an admirable performance and a swift in the classical way to do things.

Nevertheless, the literal implementation of the Global Agile guidelines presents great challenges in the case of The Russian Subsidiary, especially because of the low cohesion (strength of relationships) present among the Business and IT Teams, hierarchies of power and vendor dependencies.

9.4 Materialization of the Methodologies' Concerns

There are a set of concerns mentioned in both Agile and Stage-Gate literature such as bureaucracy, lack of cohesion, teams rivalry, third parties dependencies and understanding differences. In effect, many of these issues materialized in various activities, events and interactions observed during this grounded case study concerning both the Agile transformation and the Project execution.

For instance, experiences of the Testing Automation project procured worrisome results, such as lower cross-functional inter-department cohesion, diminishing of moral, lower perception of contribution relevance and lack of optimization image of upper management.

Furthermore, it is very clear in this regard that although the uncertainty of "Teams not wanting what they want" is an issue seemingly superseded in criticality by the bureaucratic problem of "Divided groups in the same team thinking they know what they want independently". Arguably, the performance impact on the Testing Automation project is rooted in the role of ambiguity (Liu, Chiang, Yang, & Klein, 2011), due the effect on social processes of functional different individuals working temporarily in the same team to achieve the same goal but whose interests are dissimilar or conflictive.

Stage-Gate specifies one of the most dangerous issues is related to deliverables that arrive at each gate and the criteria to evaluate them, which can affect the correct functioning of the filtering process. As a matter of fact, both situations were experienced in Tender outsourcing case.

- Deliverables: Although an AHP similar method was used to evaluate the vendors, the rating given by functional teams were highly dissimilar, with strong variance among the scores. This affected the rate of selection of 50% of the vendors considerations in the gate.
- Criteria: Not only the final weight of the deliverables was not clear in the gate but the final criteria executed was focused only on pricing, which underweights the importance of the other arguments. By having a simple criteria such as pricing dominate the decision making process, the effort to calculate other criteria is perceived as a waste of resources.

Previous effects represent a risk in the actual selection of a suitable vendor, as the vendor offering the lowest prices do not necessarily guarantee the robustness, experience or cost effective option. Occasionally, some firms discourage and disqualify the lowest pricing vendor if the costs values having a distant magnitude from the average price offered by all the vendors combined.

The tender team attempted an internal Pilot based requirement during the stage, by eliciting a set of requirements and requesting vendors to offer proposals, yet this effort was unfruitful mostly because of the confidential nature of test cases and the complex nature of communicating the internal workflow and vendors incapability to generate an appropriate solution for the local IT department to acknowledge, resulting in only two vendors providing deficient examples.

Moreover, the next Stage consist on an implementation Pilot with the chosen vendor with an evaluating Gate to decide if the project is developed further, by and large a very interesting Stage to be analysed further.

9.5 Research answers and Recommendations

Applying a new mindset in an Enterprise Multinational landscape requires more than intentions or policies. Therefore, in order to answer the research questions, a set of challenges and complex situations encircling the context of the Russian Subsidiary and the challenges deploying the Agile guidelines have been presented and analysed previously and are summarized in Table 20.

Table 20Agile Guidelines Implementation results

Characteristic	Impact	Description and Recommendation
Agile Artefacts and usage	Positive	Business teams already started adopting and adapting some of guidelines recommendations, such as the Agile walls and meetings. Continue the establish path will improve follow up and team effectiveness.
Nature of teams and cross- functional merge	Challenge	Subsidiary management structure and department division makes integration of teams not possible at the moment. Further analysis is required to establish to what extent integration is possible, although truly plain structures are unlikely on short or midterm.
Capability for Standardization of services	Challenge	Local regulations do not allow the complete integration of distributed agile services. The Headquarters should continue to enforce adaptation to local policies and standardization whenever possible.
Effect on existing Governance	Positive	Local business teams have established a parallel between current Project Management governance and Agile guidelines. Recommended knowledge management of this information can potentially benefit agile transformation.
Marketing Agile across boundaries	Positive	Effective marketing practices both across geographies as well as local driven have created awareness of business and technical teams of the importance of Adopting agile. This initial effort should be continued and involve communities and best practices.
Communities and Best practices sharing	Positive	Through communities of practices, The Headquarters are set to fill the gap between subsidiaries Agile practices, yet further promotion of usage is needed.
Selective adoption mechanisms	Positive	The accurate development of the guidelines as a tool allows for teams to adapt the recommendations to their realities although can signify the slower but safer deployment of practices.
Culture and Hierarchy constraints	Challenge	Russian cultural power index influences hierarchies and limit the functioning and self-sufficiency of agile teams to depend on continuous follow up from management. The Headquarters should consider an intermediate Agile teams working on hierarchical structures and capitalize on it.
Gate keepers	Positive	Top management involves the Project Managers as Gate keepers depending on the needs that arise from the initiatives the Subsidiary is implementing. This enable PMO team to contribute actively to the development of the business goals.

Clearly, diverse challenges arise while attempting to deploy Agile locally both because of national culture and management structure particularities product of the type of business in the Financial sector where pure Business teams are very common, as well as the Russian regulations. Nevertheless a strong effort and awareness in Business teams is observed that proves the actively deployment initiative in early, yet promising stages.

Moreover, the project management execution and effect on projects was explored through specific case studies. For instance, a positive example of transnational execution of temporary projects through Agile dynamic teams was seen, as well as a challenging Agile-Stage-Gate executed Tender outsourcing project that procured both interesting and doubtful practices and results. Similarly as the previous table, Table 21 offers a summary of the best practices and the issues found within projects and possible ways to counter them.

	- ·	
Characteristic	Impact	Description and Recommendations
Vendor selection	Positive	Deliverables are supported by mature adapted selection
AHP alike		methods is as the case of tender evaluation, although their
evaluation		effect remains dependent on the criteria base and team's
		deployment.
Agile-Stage-Gate	Positive	The adoption of a business case development and study
business		supported on an adoption of hybrid methodologies show a
development		commitment to quality of processes while promoting agility.
process		Nevertheless given the amount of concurrent projects, the slow
		pace at which some processes are executed and Tender project
		experience, it is suggested the speed of both Stages and Gates
		should be improved.
Gate criteria	Challenge	Using limited characteristics such as price as the most
quality		compelling Go/Kill criteria in the gates demonstrated a lack of
		criteria definition, actors weights on decision and substandard
		simplification of the process. This could have been incurred on
		choosing the less cost-benefit bidder.
Vendor lock-in	Challenge	Local constraints have given room to third party dependencies
		that affect IT development to the core. Mitigation of such ties
		can prove to be beneficial for both Agile guidelines
		deployment and any concurrent project executions.
Cross functional	Challenge	Cross-functional teams are working are far from working as a
team synch		joint taskforce and perform as separated teams with their own
		unique, non-negotiable needs. This prevents the
		synchronization of criteria and evaluation processes.
Culture	Challenge	Trust is a powerful value, complemented by national cultural
collaborative		traits can benefit the weight of certain actors in decision
dimension		making processes, causing a bias upon the result.
Distribute Agile	Positive	The Russian Subsidiary and Headquarters recognize the
		important or an effective, timely communication to solve
		critical issues such as compliance, resulting in an emergence
		of dynamic team work across geographies.
Complexity and	Challenge	As an effect of the impossibility of standardize services
interoperability		globally, the need to connect Russian systems to other entities
between systems		give an added layer of effort for project management activities
		and product development.
Agile artefacts	Positive	PMO has started the usage of Agile visual artefacts in a few
usage		projects, with good results. Independent usage of Agile
		artefacts for specific projects can be complex and should be
		selectively evaluated.
Tracking	Challenge	Each project manager is in charge of numerous activities, for
activities		which tracking is a challenge, even using visual Agile
		artefacts. PMO has created quarterly walls, which proved to be
		effective in this case.
Agile	Challenge	Tender project initial activities lacked of proper requirements
requirements		evaluation and call for tenders elicitation.

Table 21	Projects	impact
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Both case studies seen in the study show an interesting parallel between successful and deficient implementation of methodologies, for instance there is a clear strength The Multinational has in regards to executing distributed Agile projects, yet for some specific cases such as the Tender for Testing Automation project, challenges arise such as missing activities during execution points for requirements gathering, powerful local systems constraints and vendor lock-in, power index and trust cultural influences on deliverables, criteria selection and decision making processes.



Figure 35 Agile Deployment & Project Impact

Figure 35 offers a high level categorized simplification of the Agile deployment efforts, adoption status and impact over projects. Distributed execution acquires a wide impact from Global Compliance while Local execution is enforce from the local governance, complemented by the deployment efforts and selective adoption from management. Additionally, Agile-Stage-Gate executed components are influenced during local compliance, cultural traits, subsidiary structure and Information System complexities, with direct effect on project execution.

Although mature methodologies such as AHP were used to analysed vendors, their benefits were countered and even used against the decision making process because of the lack of cohesion between functional areas requirements and to a minor extent the pull exercised by third parties. Undoubtedly trust is a decisive factor composed by hierarchical and collective traits in the Russian context, nevertheless managers should consider that newcomers, junior managers or even interns can bring innovation and valuable ideas to the decision making process.

In contrast with other industries, IT and Technical teams have a strong pull and influence, mostly because of the critical nature of Information Systems for the Business sustainability. Nevertheless, upper management need to find a compromise between Business and IT teams for as long as cross-team integration is not implemented and the current structure maintained.

Modern trend suggest, as recognized internally by the Multinational, that the future belongs to "Digital companies offering financial services" instead of the classic "Financial institutions using IT". Consequently, under this umbrella Information systems management can only get more important and critical, for which the Multinational enterprise must prepare in Technology, Methodologies, Human Resources and Third party dependencies.

10 LIMITATIONS AND FUTURE WORK

This research work was conducted on with very specific environment of Project Management in a Russian subsidiary of a Dutch European Financial Multinational, the particularity and realities of this situation might difficult the generalization of the results to other industries or contexts.

Another important limitation was the degree of temporality encountered in the subsidiary, as means of the status of implementation of the global policies, given that this study was not started before such policies were enacted and the study timeline took place previously to the scheduled deadlines.

Although the degree of inclusion and involvement given to the intern and researcher during the period of the research, cultural power distance (Hofstede et al., 2010) mixed with the complexity of the financial internal systems limited the course of influence and access to information that could have shed further light into the agile transformation mechanisms and their effect on the local hierarchies. Additionally, most meetings were conducted in Russian and later socialized in English by the Project Managers, which can account for some information loss or opinion biased during the process.

An effort has been done to keep quality of research information while respecting confidentiality agreement and policies, nevertheless it is not extent from loses and dispersion of valuable data as a secondary effect of the information masking process.

This grounded empirical case study opens the possibility to perform substantial future research in the following subjects:

- Explore status of Agile deployment in other subsidiaries of the Multinational by evaluating their results by means of diverse theoretical background, namely cultural dimensions (Hofstede et al., 2010).
- Follow up the subsidiary Business and IT (Developers, Infrastructure) degree of integration and its evolution through a specified timeline.
- Verify and document the results of the Testing Automation Outsourcing case study within the subsidiary, along with the issues/success experienced and automation samples effectiveness while comparing them with the recommendations found in this study.
- Internal quantitative research on the business state against *Fin* disruptors in the relationships of: Competition, coopetition and collaboration.
- Effect of Agile transformation in the cross-border Business Process Management documentation strategies (Schultze & Boland, 2000).
- Case study of internal Tender process implemented following Agile-Stage-Gate process recommendations and/or using Tender software tool (Hochstetter & Cares, 2014).

- Research ways to mitigate service provider monopoly and software development dependency (Heiskanen et al., 1996) and the cost vs effect strategies related to the regulation sector of financial institutions in Russia.
- Evaluation of the Knowledge Management standardization and the mechanisms to foment knowledge-sharing across the subsidiaries, possibly performing a survey of usage, satisfaction and recommendations.
- Qualitative evaluation of the internal state of art of the Multinational in regards to RegTech disruption, weaknesses and potential.
- Evaluation and measurement of the effectiveness of Knowledge transfer mechanisms of the Internal Marketing strategies and the Community of Practices.

The previous list contains only a few examples of potential research topics for scholar. Consequently, the rich context of the financial and multinational markets expansions in the sector, the increasing software influence, the implementation domain and the modern disruption challenges open a wide spectrum of work applicability related to subjects such as Agile, borderless Product Research and Development, Knowledge Management, Tendering of processes and Software outsourcing in Multicultural geographically wide enterprises.

11 GLOSSARY

This glossary contains the terms commonly used thorough the study (Turabian, 2013). Some terms might be repeated, but are summarized in the here for easier identification.

AIP	Agreement in Principle. Document with the list of conditions and requirements for the development of a new product.
Deliverable	Any unique product, result or capability to perform a service that must be produced to complete process, phase or product.
FinTech	Term designated to name companies, often start-ups who make use of technology as a base to offer financial services.
Framework	A supporting software structure whose objective is to facilitate and simplify the development and execution of software related services.
Milestone	Significant points or events of releasing (Key) Deliverables
РМО	Project Management Operation, a workforce in charge of projects and transformation within the subsidiary.
Project documentation	Project documentation is used to define the way in which a project will be managed and the governance surrounding it.
Project Manager	Responsible for accomplishing the stated project objectives.
Project Portfolio	Pool of all subsidiary projects currently running and under governance of PMO.
Project stakeholders	Actors involved in the project, whose interests may be affected during project execution and/or completion.
SystemA	Alias used to refer to the main and most important system in the subsidiary, managing the core operations of the business.
SystemF	Middle office system for stock trading positions.
SystemI	Reconciliation systems for financial information.
RegTech	Firms that use information systems and technology to perform financial services compliance and monitoring.
TechFin	Technology services firms that leverage on a powerful user base to offer financial services as intermediary or provider.
Testing	The act of performing validation functional, integration and regression of test cases for a software product or environment.

User acceptance test (UAT)	Test conducted by end users to determine if the requirements of a specification or contract are met.
Agile Global Guidelines Framework (AGGF)	Global policies developed by The Multinational to make business development processes more standard, dynamic and resilient to change across its operational landscape. It is a guideline composed of an Agile methodology, principles and recommendations for implementation in their subsidiaries.
Agile Manifesto	Contains 4 values and 12 principles of Agile (Beck et al., 2001).
BusDevOps	IT Devs + IT operations working together through the whole lifecycle joined by Business towards enterprise agility.
Continuous delivery	Automate repetitive tasks. Human solve problems, computers perform tasks.
The Multinational	Financial European Multinational with International business and presence in every continent.
Russian Subsidiary	The Russian offices of "The Multinational located in Moscow, Russia.
Headquarters	The Multinational headquarters, located in The Netherlands.
Small and Medium Enterprise	Term used to describe companies whose size is considered to be compose between 50 and 250 employees and with no more than 50 million Euro turnover.
Third party dependencies	In this Study context, the dependency the Russian Subsidiary has related to the modification of the core banking financial system used to conduct their operations by the vendor of this system.
PM(s)	Acronym used to refer to a Project Manager(s), the individuals having the roles of planning, evaluating, executing and following up projects.
CRM	Customer relationship management.

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