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Strategic change design to leverage the potential of digital workplaces for effective collaboration.

Master Thesis within the main profile of International Business

Supervisor: Kirsten Foss

Diana Gummer; s144861

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Abstract

During recent years, disruptive innovation in technology has driven digitalization, globalization and mobility at increasing speed, thus transforming society and businesses alike – a process increasingly refered to as the “Digital Transformation” by experts worldwide. The global marketplace is becoming more competitive, requiring companies to pursue actively a shift in paradigms towards more interconnectedness, transparency, knowledge sharing and agility in order to succeed under a rapidly changing, increasingly complex and uncertain environment through continuous innovation. Challenges regarding demographic change with an aging workforce in most western countries and new expectations from the younger employees generate additionally a war for talent, which is crucial to success due to the increasing importance of innovation and thus the gathering of knowledge workers world wide.

This need to attract and retain skilled employees and enable increased innovation has started a process of rethinking old work models, bringing social and community aspects into the workplace and encouraging networking and collaboration across departments and borders with the help of new technology. These new technology tools enabling social networks, collaboration and knowledge-sharing practices are summarized under the broader term of “Enterprise 2.0” technologies. Goals for the adaption of these collaboration technologies are mainly increasing innovation and growth which require improvement in productivity and the availability and reuse of company wide knowledge. However, despite initally high expectations and increasing implementations of such collaboration technology in a speedy “arms race” in the context of global digitalization as the new top competitive edge, the actual adoption levels amongst the user community reaches from excitement to mostly indifference to rigorous denial towards what is often perceived as “yet another platform”. Resistance to the change implementation of those generally voluntary digital workplace is often fostered by a lack of clear strategic goal alignment, business process application and guidelines as opposed to other system landscape softwares such as ERP systems (e.g. SAP), thus inhibiting an additional effort from employees to change their established behavioural habits.

This thesis looks more in detail at the underlying drivers and takes a more holistic view on the factors influencing collaboration beyond just a new technology within the scope of a traditional IT project. Thus, in a second step it suggests a multidimentional approach to the successful adoption of digital collaboration technologies, touching on topics of organisational culture, structure, leadership, business processes as well as technical incentives.

Contents

1. Introduction

In the past ten years, increasingly, many research institutes and consulting companies have conducted research, done company surveys and issued studies on the changes due to the digitalization process. Case studies show that many companies have started and advanced more or less on the path of the so called “Digital Transformation” – a by now well established term among business experts. The changes in the work environment and the technology ecosystem are visible on many levels and by now concern every domain in business – industry, retail and services – all sectors and companies face fundamental transformations in technology and customer as well as employee expectations. Due to the relatively recent although rapid development of the changes affecting not only business but our society as a whole – the way we can connect with almost unlimited mobility and the way we can access openly globally available information, the new opportunities that are presented to us by digitally enabled innovative business models such as created by Uber, Airbnb and the like - there are not yet enough success stories that would allow to deduct a generally applicable transformation roadmap. Meanwhile the sense of urgency for companies to advance on the path of the digital transformation is greater than ever as global competition is growing rapidly due to disruptive innovation and entirely new business models and opportunities enabled by new technologies. Depending on a company`s decision to take the risk on a new uncertain path or wait for others to go first, those same technologies can either take a company to the top or ruin it within just a short period of time. The introduction of social collaboration technologies is considered as leading step on the path of digitalization and changing work concepts.

Existing research and case studies increasingly indicate that the new techonological tools including collaboration solutions require not only the process of learning a new technical application and working practice but also fundamental behavioural changes. Behaviour in the company context on the other hand depends on the underlying environmental factors such as organisational culture, structure, leadership as well as understanding the personal or human motivation. It is particularly important to take this broader and multidimensional view into consideration given the voluntary nature of the engagement in networks and interpersonal relationships – the basis of effective collaboration and the generation of innovative ideas based on communication and collective knowledge sharing.

In 2013 analysts from Gartner, the world leading information technology research and advisory company, made a prognosis on the development of enterprise social networks and collaboration solution projects that gave a rather discouraging outlook on the usefulness of those applications in the company context. According to Gartner, despite collaboration and social network technologies having the potential of being the primary and advanced communication channels for gathering and reusing knowledge and deciding and acting on relevant information, through the following years they would not manage to achieve the intended benefits. In fact, Gartner estiated that up to 80% of the Enterprise 2.0 implementation projects would fail due to an overemphasis on technology, inadequate and mostly "unsocial" leadership and mostly lacking clear purpose of the social collaboration implementation leading to no measurable added value from the additional digital tools (Van der Meulen, et al., 2013).

Gartner furthermore agrees that many companies have yet to realize that social and collaboration change initiatives are very different from traditional IT project implementations like ERP or CRM systems. Those systems have the limited and clear functional purpose to support specific business processes in an integrated manner that requires employees to use them in their daily work. Their use is mandatory and they are implemented and adapted within a "push" paradigm. Social collaboration solutions on the other hand follow the opposite "pull" approach. They ask employees to voluntarily engage in digital networking and sharing activities, which, without the adequate motivational factors is often perceived as an additional effort as compared to the employees` accustomed way of working.

This crucial distinction requires change leaders to extend their focus and change roadmap beyond the formal content, technological features and system implementation. They have to clearly identify and communicate tangible project goals and the exact way in which social collaboration will improve work practices in the specific context – be it company wide or specific to operational functions and departments. More than that, individuals need to see the incentive on a personal level for the additional effort of offering contribution. In order to offer such incentive, change leaders need a holistic understanding of the nature of communication and relationships in their company and the underlying human needs. Given that those relationships and communication patterns are affected by the environment they happen in, factors like leadership and organizational style need to be taken into consideration as well and become part of the transformation process and behavioral change as a prerequisite to the targeted goals of social collaboration. Top executive sponsorship of the implementation is a

requirement but not enough, the leadership style needs to comply with an open and transparent work style in itself in order to open the gate for the additional benefits of a social collaboration solution.

Only with an understanding of such key influencing factor on open communication and social networks, social collaboration tools can generate their full potential and advantage over traditional forms like email, telephone and so on.

Such a multidimensional view however implies the difficulty of offering a generally applicable and in the same time very detailed change roadmap. Every company has its own culture, specific business context and requirements and different stakeholder needs and expectations. A change roadmap proposal detailing specific change inititative thus will always look a little different, however the questions to be asked in identifying the starting point of the change project before designing a dersired future state and the required change roadmap can be summarized at a more generic level.

Based on research studies of recent years I start in the following chapters of this thesis with a background history review of collaboration technology in the company context. I proceed with a detailed analysis of change drivers and enablers of digital collaboration solutions, a collaboration technology overview, a look at possible goals and benefits from their implementation, followed by a consideration of the main challenges for the effective implementation and usage.

In a second step, I suggest a holistic assessment framework for the strategic starting point of a social collaboration change projects which is based on the previous analysis of factors impacting collaboration and the motivation for adaptation and business relevant utilisation of such collaboration technology.

Lastly, I look at the strategic change design fields I identified in the context of communication and collaboration technology implementations at a generic, not case specific level.

I conclude with a summary of the relevant findings of this research paper and provide an outlook on possible future questions and anticipated development within the analysed subject.

2. Problem statement

The problem statement of this research paper is the following:

“Strategic change design to leverage the potential of digital workplaces for effective collaboration.”

My hypothesis is that digital workplaces including Enterprise 2.0 technologies and social collaboration tools which are the focus of this paper are currently used ad a suboptimal return on investment due to the prevalent traditional focus on technology in the context of the deployment of digital applications. My argumentation is that social collaboration tools offer beyond a high value adding potential in the context of the Digital Transformation and related new work, collaboration and innovation approaches. However, in order to leverage this potential, I suggest that the implementation of collaboration technologies should be part of a strategic change approach touching on a variety of holistic change design areas beyond technology.

3. Methodology

The theoretical research and analysis part of this paper is a combination of secondary research, the application of academic frameworks and my own relevant experience and observations during my work time ar a technology and innovation consultancy including personal user experience of a broad number of the collaboration tools named in the following chapters.

Furthermore, I introduce a conceptual framework for the strategic change design fields in the context of social collaboration that I developed based on the previous research and analysis. I use the framework as a basis for my “Collaboration for innovation readiness assessment” – a questionnaire with the purpose to help companies define their current status regarding collaboration maturity and identify change design fields where they still need to focus their attention on. I apply this questionnaire exmplarily to participants from Boldly Go Industries GmbG, the technology and innovation colutancy I currently work at, using the NHH qualtrics account. The assessment together with a short analysis will be presented in the last part of this paper.

4. Definition of key words

Digital workplace, Enterprise 2.0 technologies, social collaboration tools, Enterprise Social Networks

The key words above are in a lot of ways overlapping and expressing mostly the same meaning which is also the way I will use them throughout this paper. Enterprise 2.0 technologies are not a new term and describe the sum of different information technology that enable digital connection of people and content and digital forms of communication, knowledge sharing and collaboration such as blogs, wikis, tags and so forth. Enterprise 2.0 technologies are not necessarily integrated in one tool but are rather the various technological functionalities enabling digital collaboration. This is where I sometimes switch between the terms, using rather the term (social) collaboration tool to indicate an integrated solution that uses a combination of various Enterprise 2.0 technologies. Enterprise Social Networks are widely used to express the same as social collaboration solutions, the correct distinction is that they rather describe a digital workplace that connects social collaboration tools with other communication and collaboration applications such as the intranet, outlook and so on.

The term digital workplace is an overall term encompassing the above described other terms.

Digitization and Digital Transformation

Digitization and Digital Transformation are also mostly synonymously to describe the rapid technological development over recent years that is transforming almost all business processes within all industries by digitally enabling things (Internet of Things), processes, interactions and thus creating big data and technological data intelligence. The term Digital Transformation, which I will mostly use, focusses even more specifically on the implication of the digital data economy on customer and employee expectations, business models, innovation, agile processes and new work success requirements.

Strategic change design

Strategic change and change management in the business context referrs to the transition (enhancement or transformation) from a current state to a desired future state by choosing a specific change path dependent on the prevalent change drivers and enablers (external and internal. Given that this paper is not based on a specific case study, I will not focus on the change path which consists of a variety of change communication tools and initiatives. Instead I will focus conceptually on the strategic change design areas that companies need to

consider in the context of effective collaboration in order to assess their current state and design their desired future state.

5. Context and history of collaboration technologies in the business workplace

5.1. Context: Success paradigm shift in the VUCA environment

In 2006, exactly 10 years ago, Andrew McAfee introduced the concept and term of Enterprise 2.0 (Enterprise 2.0 : The Dawn of Emergent Collaboration, 2006).

Eversince it has been a much-discussed topic, continuously introducing new and shifting terminology like digital workplace and social business in the context of digital transformation in even broader terms. The underlying challenges and drivers for companies regarding new ways of work, communication, networking and collaboration however have not changed besides gaining more importance and urgency for sustainable company success and the bottom line in the context of a new global business environment that is best characterised by continuous and increasingly rapid change, unvertainty, complexity and ambiquity - in business circles also commonly known under the acronym “VUCA” environment - of information and future prognosis. Despite the process of increasing digitization being the origin and driver of the change it is considered that the human factor is more important than ever. Skilled employees and organizational structures supporting collaboration and knowledge and idea sharing between these employees stand more than ever at the center of core value creation through the handling, interpretation and reuse of the overwhelmingly complex and vast amounts of information available due to the digitization process.

These environmental changes and their implicit focus shift on knowledge workers and collaboration within supportive organizational structures involve, as a consequence, the following specific shifts in success paradigms as compared to past, traditional factors which more often than not still constitute the status quo in the reality of many well-established companies.

In overall terms the speed of the environmental changes requires a shift from rigid organisational rules, regulations, structures, hierarchies and procedures to more agile and transparent structures, with flatter hierarchies and adaptable processes that are merely aligned along broader guidelines and a common overall business goal orientation.

Agility and fast reaction and time to market is supported by a shift from traditional company and knowledge silos to transparency, and networked collaboration within the company as well as with external partners and customers in interconnected value networks.

In the same contextual observation, changes in leadership and team dynamics are a natural required consequence:

Leaders have to move from micromanaging to coaching autonomous teams and connecting people and ideas rather than dictating actions for pure execution.

The increasing focus on innovation and a reliance on added value from knowledge workers also shifts the work process approach from the traditional tayloristic labour division to a more integrated process thinking. It changes furthermore the view of employees as purely executing forces to a more human centric view, introducing the social, community and wellbeing aspect into the workplace.

The extend of the challenges in connection with the requirements of these paradigm changes becomes painfully visible given the rather decline in innovation in many large companies and their difficulty and seemingly inertia in attempting to adapt to the new environment and change their tradition, long established and rigid structures and ways of working as generally suggested by existing research studies on the subject.

All of these companies by now understand the importance and necessity to become more agile and adaptable and thus especially to generate more and higher quality innovation to succeed in the changing competitive landscape. However, many do not understand the required nature and importance of collaboration within this context. Many are limited by old concepts of collaboration, seeing transparency and broad collaboration as extra work and time consuming as opposed to continuing in existing work practices. They do not see it as the central factor of value creation in today`s business environement where it is all about fast innovation and continuous improvement and value adding, which results from open and transparent collaboration between company-wide and even external know-how owners. Continuning business as usual within existing structures and strict processes and rules is more comfortable and faster in terms of a company`s status quo businesses and markets, but it causes especially large corporations to fall behind as the jumps between technologically induced innovation become increasingly shorter and status quo environments change faster and more unpredictably.

Traditionally, employees tried to make themselves valuable and protect their position by keeping knowledge to themselves, but today, as most information is accessible to everyone through internet technology, additional value is only created when employees connect diverse knowledge to generate new ideas and improvement by seeking opportunities to work together with others.

5.2. History of collaboration technologies in the business workplace

Collaboration technologies have developed together with the changing requirements for collaboration in the company context as described above. However, they have not just emerged together with the rather recent term of Enterprise 2.0 that was introduced previously, but most tools for collaboration, communication and content management such as blogs, wikis, tags, XML feed tools or social networks are rooted in office productivity tools reaching 20 years back to the 1990's (Gotta, 2007).

The recent hype and the attention from large companies around the current collection of social collaboration and communication tools on the other hand, can probably be explained by the cumulative maturation of the related software vendor landscape together with the rising consciousness around the importance of interconnectedness, collaboration and knowledge sharing as a means to face current business challenges as explained in the previous chapter.

The rediscovery of such tools and features that have partially already existed for some time and the renewed investment efforts within the vendor landscape in the further development of this technological domain indicates that a level of critical mass has been reached on the demand side.

The following Figure 1 by the Burton Group (Gotta, 2007) presents an overview of the chronological „attention waves" towards collaboration and communication technology trends, whereby the last wave is collectively summarized under the recently emerged term of Enterprise 2.0 (or E2.0 in short).

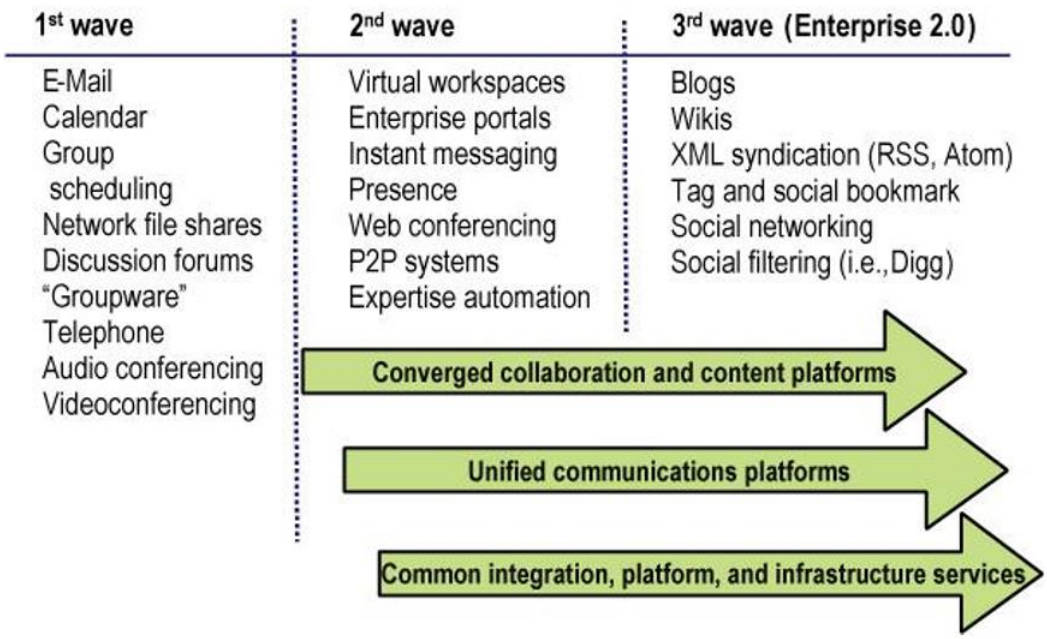

Figure 1: "Waves of Attention" Puts E2.0 in Context, burton GROUP, Enterprise 2.0: Collaboration and Knowledge Management Renaissance, Nov 15, 2007, Mike Gotta

As based on software market research studies over the past years and summarized in the above mentioned study by Burton Group (Gotta, 2007), today part of Gartner, the previously introduced leading information technology research company, the development of collaboration technology can be reasonably subdivided into 3 „waves of attention" as explained in the following:

The first wave of collaborative technologies was mainly channel-centric, based on mostly standard tools and features such as telephone, email and audio or video conferencing. Although some solutions already supported file sharing, group discussions and other office productivity support like group scheduling or calendar planning, those first versions were yet limited in their functional scope and scalability to larger infrastructure and networks. Effective scalabilitty, a major challenge to implementation within big companies was adressed later on, during the first wave with the appearance of groupware applications, some of which included their own infrastructure and networking services in the software offer like in the case of Lotus Notes, an original email, calendaring and scheduling application by Lotus.

With further development, a maturing collaboration and communication market introduced the second wave of solutions based on internet and web architecture. This evolution of the

market as a consequence of advancing internet and web capabilitie brought on the entrance of many new players in the vendor landscape exploiting these new technological opportunities.

Those newly emerging smaller vendors managed to specialise and gain first mover advantage in interesting new functions and features, but were often too small and lacking the ressources to provide more complete, allround solutions as preferred by big companies. At the same time, more established technology solution providers quickly cought up with the innovation advantage of the smaller vendors, extending their existing solutions with the new functions and features exploiting the maturing internet enabled infrastructure and network possibilities, thus offering complete up-to-date solutions. In consequence, looking back at the vendor landscape of the 1980`s and 1990`s, many of the back then innovative small first movers, considered as leaders in the market at that time, do not exist anymore due to a weak business model or because they have been acquired by larger players in today`s market. Lotus for example, from the above-mentioned groupware application Lotus Notes, has been acquired by IBM, one of today`s world wide leading IT companies and collaboration software providers.

Because of the often-specialized technology solutions of many of the small vendors however, in many cases their offers simply have become redundant due to structural changes in the market leading inevitably to these technologies becoming a standard functional component of more generalized, integrated solutions.

As predicted by specialized market analysts like Gartner, Forrester and others, this consolidation towards a unified and platform-centric market led by companies like IBM, Microsoft, SAP and the like will most likely continue furtheron in the market for communication, knowledge management and collaboration solutions. The entry barrier for new entrants becomes in this context increasingly expensive as, in order to succeed, vendors need to integrate in complex channels and partner networks and invest continuously in research and development.

The third wave of collaboration technology that has become known under the overall term of Enterprise 2.0 is based on the above-mentioned standards, but has attracted nonetheless much due to the introduction of social applications. New technological offerings or improvements that have evolved hereby include amongst others better network services enabling global connectivity with much greater support for mobile application, software as a service (SaaS) providing centrally hosted subscription based software, XML based RSS feeds, blogs, wikis, social networking as well as social filtering and more.

6. Digital workplaces within the digital network ecosystem

As introduced in the previous chapters, the social collaboration approach and tools are not merely a new wave of technological progress but a central success factor for the new digital economy and its rapid innovation paradigm.

This development happens within a holistic digital ecosystem as charcterized in Figure 2 below.

Companies have to compete globally in the “digital world” being characterized by ultra mobility, hyper connectivity, rapid innovation and technological cycles as well as high performance efficiency. In order to do so, these companies need to question how their existing business model can succeed within the “digital business model” generation, including aspects like complex value networks, agile and customer-centered development of value added solutions instead of the former product centricity and efficient scalability leveraging the network effects of customer data and modular cloud platform technologies. Furthermore, in an age where “digitization” in terms of automation within even high-end industrial applications has globally become basic standard on the verge of becoming a commodity (as opposed to a competitive advantage which Germany, historically an engineering industry, has strongly relied upon up until now) the aspect of customer or user experience generates increasingly the greater part of the added value. As such the seamless omni-channel experience is an essential start in the context of customer-centered innovation.

Creating a value adding digital business model that responds to and anticipates new market needs requires in consequence a resource-based view on digitization in terms of a “digital company”. Namely the processes, resources and partner networks enabling the digital business model must be transformed accordingly with regards to establishing an innovation culture and methodology, acquiring the related skills as data science for instance and establishing new end-to-end process-integrating collaboration behaviours. Thus, organizational transformation requirements need to drill down to the individual level in terms of the “digital user”. The “digital user” is on the one hand a top-down necessary development for digital business strategy alignment, while on the other hand it is also a representation of our private expectations on usability and experience as customers transferred increasingly to our workplace expectations and behavioural habits: the communication technology development we benefit from in our private lives, like Facebook, Amazon and others have changed our expectations regarding convenience, time, effort and omni-channel, intuitive

experience in the B2B work environment, so that the attention span and adaptation to inconvenient or little value adding digital environments, incl. social collaboration tools, have become highly elastic.

This digital ecosystem represents the reason “WHY” behind digital transformation ambitions including the development along social collaboration and supporting tools. It is important to understand the “WHY” in depth in order to be able to deduct “HOW” collaboration and communication can enable success along the goals of the digital ecosystem. Understanding the underlying changes that are required in human behavior and consequently cultural and organizational aspects allowing to achieve this “HOW” regarding successful collaboration will show that it is not about merely training a few key users on how to navigate a digital tool. On the contrary, the required behavioural changes that are implied touch on social cognitive and innovation theory both of which involve more environmental factors than just managing a new digital platform – which in the digital ecosystem perspective represents just one of the final “WHATs” – just one representation of the concrete, operational application of these success factors in the form of a digital collaboration workplace.

In the following section I will selectively dive into some of these change drivers and enablers vested in the subsequent behavioural change requirements that will have to be considered for the strategic change approach when deploying new collaboration platforms.

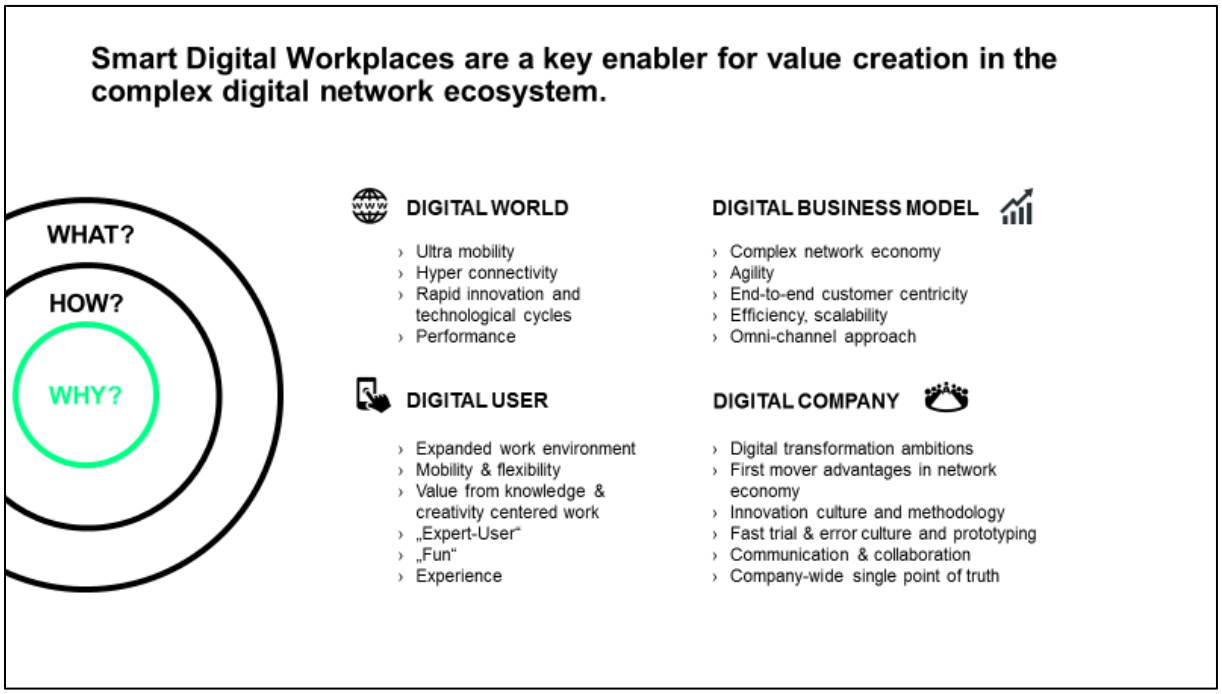

Figure 2: “The new digital ecosystem requires smart digital workplaces”, Diana Gummer for Boldly Go Industries GmbH, 2016

7. Change drivers and enablers for social collaboration

Drivers are environmental factors influencing the business world. They are external factors and developments that are out of the control of companies, often originating in technological, cultural, political and economic changes which can influence market trends and behavioral change. Environmental drivers can impact companies to varying degrees depending on industry and business model, but usually it is very risky for sustainable success to ignore any of such market transforming forces. Besides representing a risk and challenging established business models and business routine however, drivers can also be used to take advantage of new opportunities created in the process – they can be used as enablers contributing to the success of an individual company if their potential in the specific company context can be recognized as early on as possible and used accordingly, such as is the case with new technology for example.

Many environmental factors can be regarded as strong drivers for the growing importance of collaboration in the business environement. Communication, openness and sharing have been digitally enhanced by increasing interconnectedness, mobility and interactivity thanks to internet technology and have been the norm in private life and society (Facebook, Instagram, Twitter) for quite some time now and become so increasingly in the company context.

Nonetheless many executives are skeptical about a tangible bottom line contribution from collaboration tools. Usually effects are not measured enough as there are only few metrics yet and there are no clear goal settings linked to overall business success due to the voluntary and mostly informal / social nature of the tools.

Additionally, every company usually has a backlog of parallel initiatives and projects planned, all of which are competing for time, resources and approval for realization from the executive level. Approval and implementation prioritization depend on the perceived sense of urgency and pressure with regards to the respective topic, as well as sponsorship by key influencers.

So what driving factors can create a strong enough sense of urgency for a company to rethink it`s current strategy and environmental setting with regards to collaboration and knowledge and idea sharing? Which aruments are strong enough to convince companies to change existing routines, organizational structures and leadership styles that affect collaboration and communication?

Based on my analysis of numerous research studies by market research institues and consultancies on the subject, I have identified and summarized a number of key drivers and enablers commonly agreed upon by experts.

In the following I will present the factors listed below influencing collaboration strategies in the company context:

1. Increasing importance of knowledge work

2. Increasing complexity of global collaboration networks

3. Impact of demographic change

4. Increasing importance of external collaboration

5. Increasing quantity and dynamics of relevant information

6. Increasing competitive pressure

7. Raising dynamic, innovative capabilities

8. Availability of Enterprise 2.0 technologies

7.1. Increasing importance of knowledge work

One of the important new paradigms in today`s environmental context of increasing digitization is the importance of knowledge workers and integral, process-oriented problem-solving abilities. The rising complexity of global corporations however makes it challenging to break down local and departmental knowledge silos. Digital enablers for knowledge management and easy access and distribution of information across borders can be employed as a motor to drive added value from the vast variety of knowledge ressources within and across large organisations.

Knowledge management as a discipiline has thus emerged from this challenge, dealing with the question of how to externalize internal knowledge from training, experience and so on in the most effective way. Classical data bases, document storages, expert directories and so forth are only limited in their ability to capture knowledge and in the useability of extracting and sharing that knowledge. They represent merely the digital form of a central library. The largest potential in our fast-changing global environment however lies in the ever-evolving knowledge from every day work experience and new lessons learned from creative

experiments and collaboration which is different in nature from formal training and information material due to its dynamic and experiential characteristics.

This is where Enterprise 2.0 technologies take an entirely different approach by building on the networking among people as the most essential prerequisite. This allows for dynamic and spontaneous collaboration constellations to form, in order to solve even entirely new problems in an agile and creative way by sourcing knowledge, experience and innovative ideas from people across borders. This approach is especially valuable for new problems which we face more often in the VUCA environemnt, where there are no existing routine solution patterns that might have been documented in a classical data base and where we need to rely on human creativity. Furthermore, today routine problems and processes can be automated to a constantly increasing degree of difficulty with the help of robotic technology. Access to these technologies become increasingly democratized across the globe. In consequence, human creativity and knowledge work becomes of crucial importance to a company`s sustainable competitive strength.

A study from AIIM, the Association for Information and Image Management, underlines this observation, saying that 75% of companies perceive the more efficient and effective application of available and evolving knowledge as a core driver for Enterprise 2.0 technologies. This driver is closely followed with the need for more effective collaboration at 69% (AIIM, 2009).

The global consultancy leader McKinsey separates three categories of work types and their evolution (Johnson, et al., 2005): production, transaction and interaction jobs. Figure 3 below shows their distribution in both big industrialized and emerging nations. Production jobs are classical industrial transformation jobs or “blue collar” job as executed by operating personnel on the shop flow, transforming raw material into finished products. These jobs are highly standardized and repetitive. Transaction and interaction jobs both fall in the information work group, whereby transaction jobs are first stage information jobs, being also to large parts routine work. They are executed by clerks and administrative personnel and are nowadays often outsourced to low wage countries. Given that transactional work can mostly be formally described, these jobs are increasingly automated by rule-based robotic technology applications.

The third category, interaction jobs, requires interpersonal communication and collaboration with co-workers, customers and partners. Open communication, support and collaboration along the value adding chain including the customers are characteristics of a knowledge and

innovation based society focused on solving for complex uncertainty and future-oriented problems.

The trend todays for new workplaces that are being created goes clearly in the direction of this last category, the interaction jobs and the underlying skills that accordingly are most demanded in the market space – in both industrial and emerging nations alike (Lund, et al., 2012).

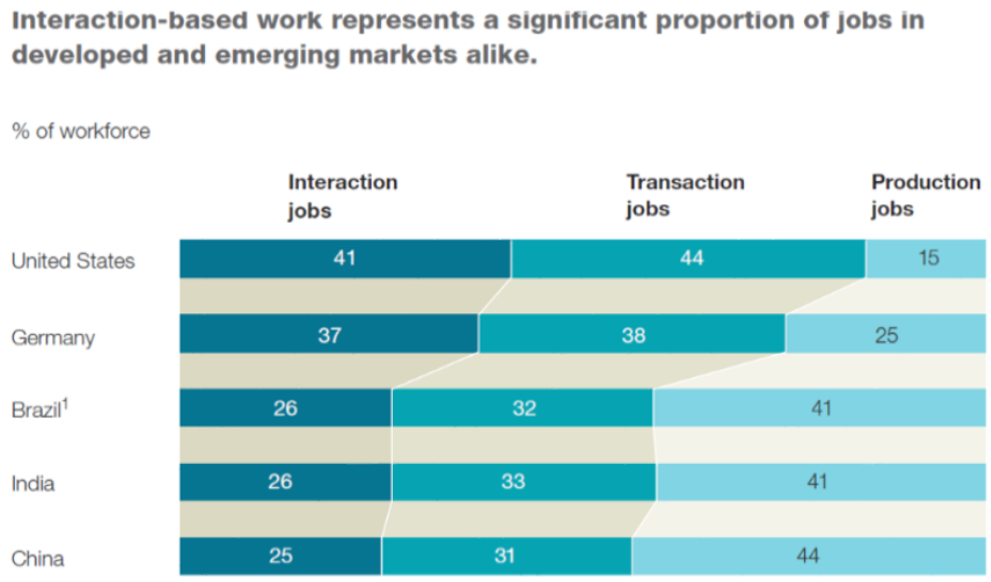

Figure 3: McKinsey (2012), Preparing for a new era of work

Accordingly, work processes, methods and tools that allow and foster the exploitation of the potential from collaboration and communication among these highly valued interaction workers become increasingly valuable skills and tools that companies need to invest in today.

The key characteristics of these skills and tools are essentially the following:

- Increasing the visibility of relevant people and transparency of their competencies including experience and ideas.
- Thus, allowing the open and decentralized exchange of these ideas and experiences in various forms and within relevant communities.
- Creating company-wide expert networks as well as allowing for the networks to reach out and include experts beyond corporate boundaries.
- Enabling these networks by designing human-centered work environments that recognize and support specific work patterns and structues facilitating processes.

Companies with a high number or interaction workers and a distinctive strength in the above-mentioned skills display a demonstrably higher performance when measured in the standard deviation of the EBITDA (Chui, 2012), as compared to companies with a lower proportion of interaction work. Enterprise 2.0 tools offer new technological opportunities to enable these skills and thus increase the efficiency and effectiveness of interaction workers to a potentially high degree. To the current day however the challenge here remains in the very narrow extend of substantial research and proven best practices as to HOW effective interaction work can be enabled best by designing the digital workspace within and around Enterprise 2.0 tools in a user-centered and sustainable way.

7.2. Increasing complexity of global collaboration networks

Most companies, even small and medium sized enterprises, operate today in global networks with up to hundreds and more business units, partners and customers spread around the globe. The development of technology based on the internet allowing connectivity and communication in real-time and at close to unlimited capacity is a core driver for this trend. The international strategy of globally operating companies often has to be adapted to local opportunities and customer expectations.

This global megatrend increases complexity in terms of the amount and speed of data and information shared in general, the amount and diversity of people involved in all business processes as well as the variety of local realities to be taken into consideration.

Enterprise 2.0 technologies can become an essential value adding enabler in addressing the challenges of global transaction and interaction flows as well as in leveraging the opportunities coming from being connected with a global pool of highly diverse knowledge, experience and cultural resources:

- The global, company-wide alignment with an organizational culture uniting employees but also partners and customers with a shared understanding and feeling of identity.
- Creating a cultural and emotional, interpersonal connection between employees that are geographically widely spread and thus digitally lowering the physical distance.
- Enabling collaboration across country and functional borders allowing for more participation and in consequence engagement in decision making processes which is key to creating a sense of identification with the company.

- Lowering barriers and abolishing silos between regions and business units thanks to better information distribution and inclusion.
- Allowing collaboration and innovation projects within globally distributed teams.
- Enriching organizational leadership by establisging culturally heterogeneous management teams that foster diversity in people, perspective, mindset and new ideas.

According to a studie conducted by AIIM (Miles, 2011), the break-down of geographic and functional barriers as well as the efficiency optimization of globally distributes product teams is among the top drivers for installing Enterprise 2.0 technologies.

Global collaboration and communication types can hereby be devised in internal and external business processes (mostly repetitive), innovation processes and projects and social interaction. The latter can be perceived as an enabler to more trust based and thus effective business, innovation and project processes – internal or external. Most business processes within established companies run already perfectly well. However, given the complexity, the current state of fragmentation between analogue and digital process and system landscapes, and the increasing necessity of innovation processes and projects for competitive strength, it is highly inefficient and inconvenient when problems arise leading to redundant rounds of email exchange so that communication requires high amounts of effort. The consequence is a reluctance to collaborate proactively based on the theory of least effort as described in behavioural science.

Enterprise 2.0 technologies can enable more streamlined processes creating one central point of truth involving all relevant stakeholders in real-time with the latest information and activity state or document/media version.

The opportunities lie thus within cultural, interpersonal, processual and infrastructural potential when leveraging collaboration tools in a necessarily goal oriented design approach.

7.3. Impact of demographic change

Today the demographic structure changes – especially in industrialzed nations – from the classical pyramid to a reversed pyramid structure or a “mushroom” structure with the elderly or “silver talents” as often referred to amongst new works experts taking a major proportion of the work force. Accordingly, the collaboration between generations – leveraging experience and ideas from older generations and combinging them with the new perspectives of younger generations becomes a major success factor of the interaction based work force. The diversity regarding generational structures in companies require an inclusive workplace

design adapted to the needs and strengths of these demographic groups, digital natives and newcomers alike. Furthermore, the barrier between private live and business live start to diminish, requiring companies to establish new family and demographic friendly work models.

Enterprise 2.0 technologies in this context generate the following opportunities:

- Adapting digital workplace platforms to different demographic need and uniting the respective competences on one central collaboration platform.
- Digital workplaces allowing for more mobility and flexibility in terms of new work models attractive to the variety of life situations of the diverse employee landscape.
- Better and easier onboarding of new employees at different demographic stages.
- Better inclusion of employees of different interational, cultural backgrounds.

A study on global diversity by Forbes (Forbes, 2011) sais that diversity within a company is the main contributor to creativity and innovation. Around 85% of the participating companies indicate that the collaboration amongst emplyees of all sorts of backgrounds, qualification, and stages of experience is key to effective problem solution.

7.4. Increasing importance of external collaboration

The added value in the useage of Enterprise 2.0 technologies is increasingly expected in ist application with external partners. This trend follows the general evolution of companies operating with ecosystems not just with their customers but with their global partners and suppliers as well. The goal hereby is to solve problems in new ways and redesigned processes that are better adapted to the challenges of the digital network economy. Open innovation projects within a networked expert ecosystem and end to end process oriented workflows instead of merely divisional processes are relevant examples of such new forms of collaboration processes.

A study of the IBM Institute for Business Value (Cortada, et al., 2012) distinguishes the external collaboration as the most valuable next step in the evolution of social business. Specifically, the surveyed companies perceive thist area to be one with the highest unleveraged potentials until now with regards to customer interaction, vendor and supplier interaction and leveraging external talent as depicted in Figure 4 below.

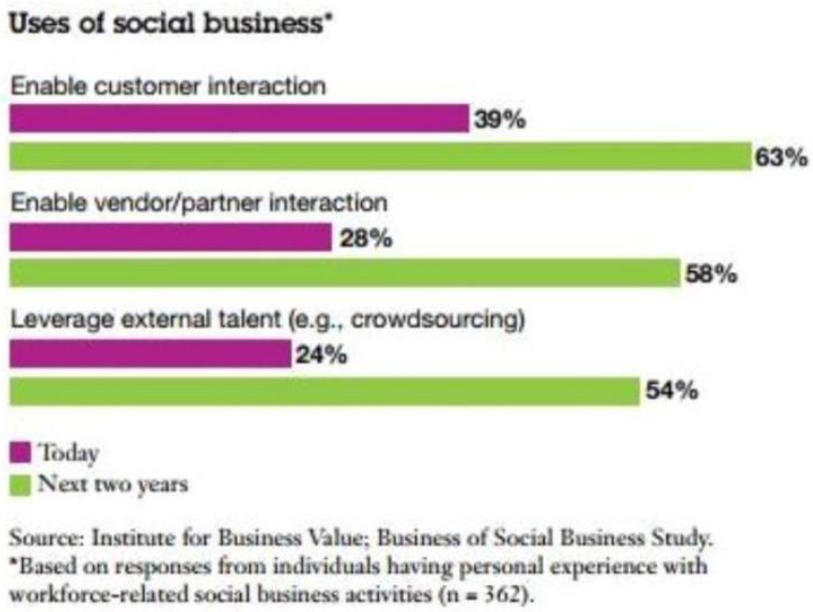

Figure 4: IBM Institute for Business Value, (2012), Uses of social business

According to a recent study of McKinsey (Bughin, et al., 2015) 41% of the surveyed companies started already initiatives to collaborate with external partners using Enterprise 2.0 technologies, 66% of which inidicated the main reason for that to be faster access to relevant knowledge and the second most important reason to be reduced costs of communication for their inter-company transaction costs as displayed in Figure 5 below.

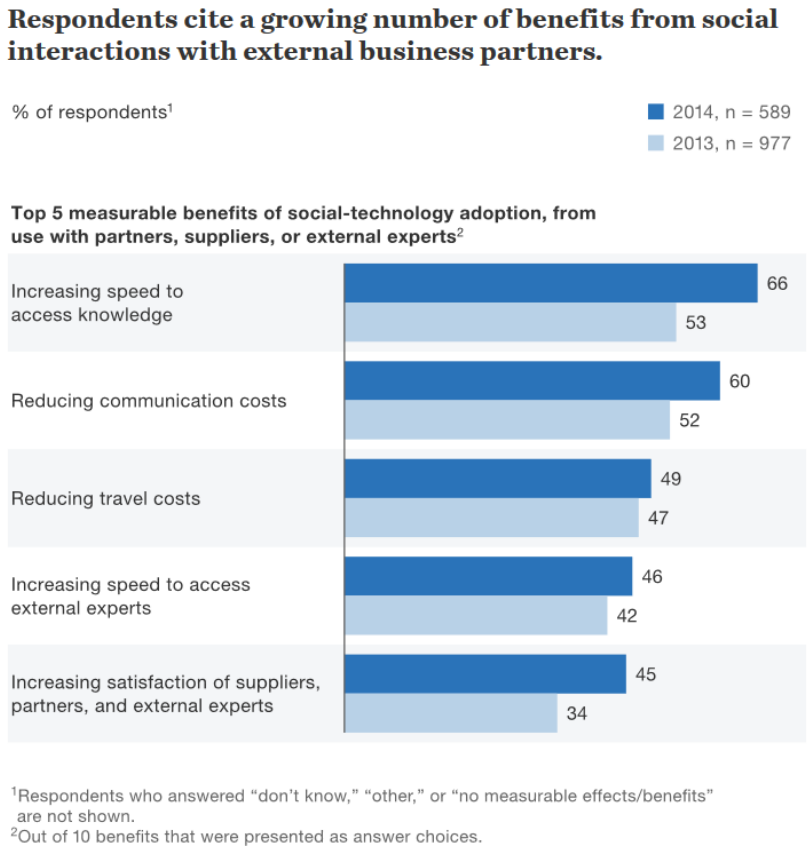

Figure 5: McKinsey, (2015), Measurable benefits of social technology adoption

7.5. Increasing quantity and dynamics of relevant information

Due to the above described drivers, companies witness a dynamic growth in structured as well as unstructured data from the internet, social media and other mobile online platforms and applications having an impact on the perception of a company`s value proposition and its performance. An increasingly high proportion of relevant data and information is transparently out on the internet and not only within corporate boundaries anymore. This trend generally known as "big data" drives new forms of data processing and analysis that companies are driven to apply to leverage the opportunities of understanding and using customer data along all digital touchpoints, transactional data from business applications and data from the internet of things which is enabled by sensors technologies. The growing data volumes and dyanmics represent a complexity challenge but also an opportunity to companies. These masses of static and dynamic data need first to be processed and used purposefully in order to discover their underlying value and transfer them into actionable business value through predictive optimizations, new services and other applications and platform services. Data is the "oil of the 21st century" - a wide-spread notion for the new digitally enabled data network economy. This implies that business models and strategies

depend more and more upon the efficient and effective processing and useage of their available access to relevant data. Due to this context, new data processing technologies including artificial intelligence evolve at unprecedented speed reaching a stage of data intelligence and automation that humans already cannot compete with. Thus, the competitive diversification in this new data technology world depends even more so on interpersonal human collaboration working on entirely new ideas, innovation projects, new experiences and challenging established approaches – a specifically human diversification factor that rules bases technologies and even machine learning so far cannot replace. In order to enable humans to work in such new ways that repeatedly and sustainably produce thus human specific innovation results companies need to challenge their existing organizational structure, processes, leadership and working environment given that the sustainable innovation goal requires a behavioural change from executive, transactional work to creative, interactive work. Furthermore, a key focus point to achieve sustainable innovation is the shift from closed, proprietary systems and processes to an open innovation based customer centric approach.

Transferring this driving force to Enterprise 2.0 technologies, it is possible to distinguish between cleer opportunities in terms of creating communities that involve external groups, tagging, filtering and classification for more relevant data access and shared document editing on a large scale, as well as challenges in terms of data security given the larger scale or people – internal and external – involved and the inevitably lower control possibility.

7.6. Increasing competitive pressure

As previously mentioned the main current management challenge for - especially established - companies fighting to remain sustainably relevant in the future is the so-called VUCA environment. To remind the reader VUCA stands for “Volatility”, “Uncertainty”, “Complexity” and “Ambiguity” (Bennett, et al., 2014) - adaptability to and mastery of them represent the core challenge to remain relevant and competitive in the digitally dominated future. Traditional questions as to “what do we know about the status quo” or “how well can we predict the future outcome of certain actions in order to minimize risk” are getting harder to answer and become less relevant to evaluate the decision whether or not to take action in our fast changing social and market environment. Additionally, the large and networked ecosystems companies operate within create more dynamic and diverse stakeholder groups to be considered when making decisions.

The necessatity to anticipate changes in the global market environment better and faster and to integrate according strategies in the corporate business development process is a central competitive success factor as surveyed by an MIT study (Kiron, 2013) depicted in Figure 6 below.

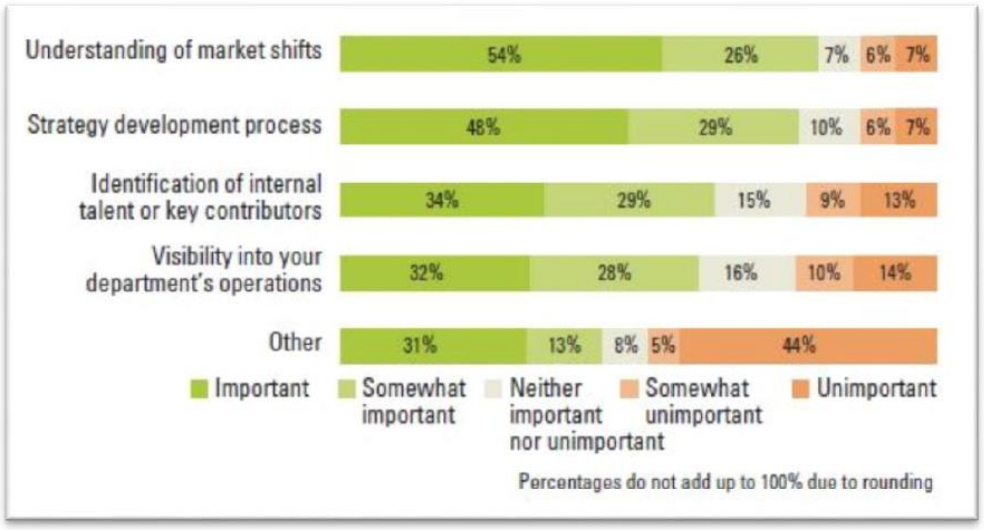

Figure 6: MIT, (2013), Change requirements for global companies

Increasing competitive pressure is not a new phenomenon but the specific VUCA enviroment certainly requires a more disruptive shift in behavipoural patterns from rigid to more agile processes and the respective enabling structure around. Again Enterprise 2.0 technologies can be an enabler to achieve this change and strengthen competitive positioning by:

- Increasing the agility, flexibility and speed withing the organizational network in order to be able to react to changes more proactively.
- Improving the transparency and hence understanding, commitment and engagement for changes in customer expectations.
- Identifying faster new market risks and opportunities.

7.7. Raising dynamic, innovative capabilities

In 2016 only 12% of the fortune 500 companies from 1955 remain due to the disruptive transformation fueled by digital innovation in the market space according to AEI (AEI, 2016). The ability to innovate is thus in the general opinion of senior executives and experts world wide the essential capability to survive and especially lead the future digital economy. Dynamic innovation capabilities allow organizations to be more resilient to unexpected changes, economic shifts and industry transformations mostly based on technology development that change customer expectations and market structures. Innovation is not seen

any longer as merely incremental engineering improvement that occurs only through internal research and development investments but as an open collaborative process that aims to create new value in a customer centric approach. Innovation can create new values along a variety of dimensions including new products, services, earning models, channel deliveries and its power today is vasted especially in the smart leveraging of available internal, customer and partner data. Given social media and global transparency and a more democratizes access to the last technology, innovation and customer loyalty cannot rely anymore on product and service improvments alone but it needs a strong, authentic and congruent brand identity that people – customers and employees alike do trust in a sustainable manner.

The innovation process is no longer restricted to a few engineering experts in the R&D department but it has become an open innovation ecosystems that is not only better off but even depends on the insight of its front-line employees and customers. This trend is due to the shift of information consumption from early the early form of the internet as a linear information stream to today`s social media where every individual can be not only a consumer but has a proactive voice and impact as well in the world wide web. Due to social media and open collaboration technology consumer today have the possibility and thus also the expectation to be "prosumers" – producers and consumers in the same time. Companies need to respect that and leverage that trend as an opportuinity in order to remain competitive.

Enterprise 2.0 tools in this context can be used to design processes that allow the development and realization of new ideas tob e inclusive of a multitude of stakeholders including all employees, customers and partners. Social network technologies allow to make innovation an open process internally as well as externally. New ideas no matter from whom, executive or shopfloor individual can gain almost equally high visibility due to these technology tools.

Digital communities of best practice can brinig employees with similar interests and passions and different ideas together to share knowledge, ideas and work together to transform them into actionable business value. New ideas can be shared, evaluated, discusse and improved in large forums including company-wide and external stakeholders. Social media platforms based on crowdsourcing and open innovation principles allow companies to assess and prioritize actual market needs and to invest in and develop the according internal resources and external partnerships.

According to an MIT study (Kane, et al., 2015) the most valuable innovative ideas arise from collaboration among people of different backgrounds. According to the study 44% of digitally mature companies use widely cross-functional teams to launch new digital initative as

compared to only 16% from early stage companies. Figure 7 below accentuates how valuable innovation derives from the use of a variete of diverse sources (IBM, 2006):

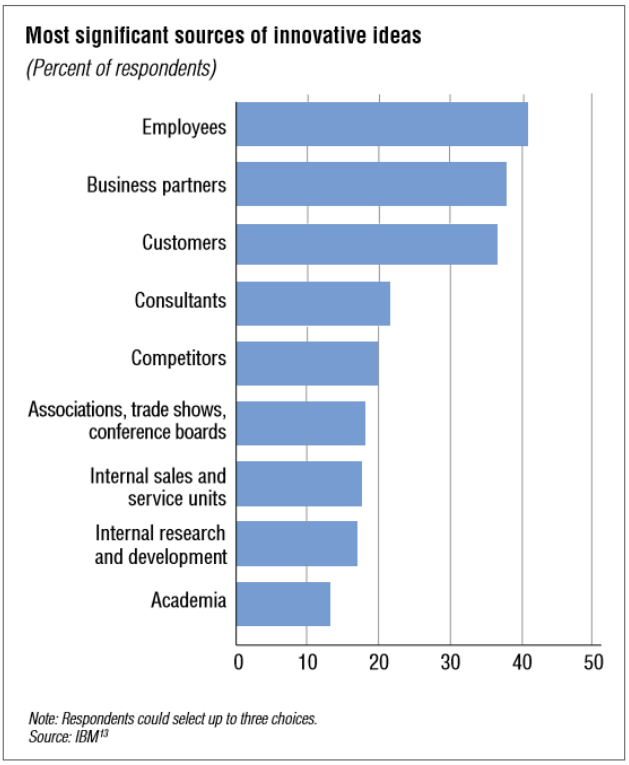

Figure 7: IBM, Global CEO Study 2006, Most significant sources of innovative ideas

7.8. Availability of Enterprise 2.0 technologies

In recent years Enterprise 2.0 technologies have reached a maturity degree that qualifies them from extensive use within companies with a broad quantity of users. It is possible to chose between high performing open source offers for niche uses as well as more elaborated, holistic offers of large global softaware companies that integrate within wide spread system landscapes. The available technology soltutions target a variety of potential user groups from global corporation, to small and mediums sized companies and open networks. The globally acknowledged market research institues Gartner (Drakos, et al., 2015) and Forrester (Koplowitz, 2014) update requlary an evaluation of the dominant vendor landscape within all sorts of technology domains including social collaboration tools as depicted in Figure 8 below:

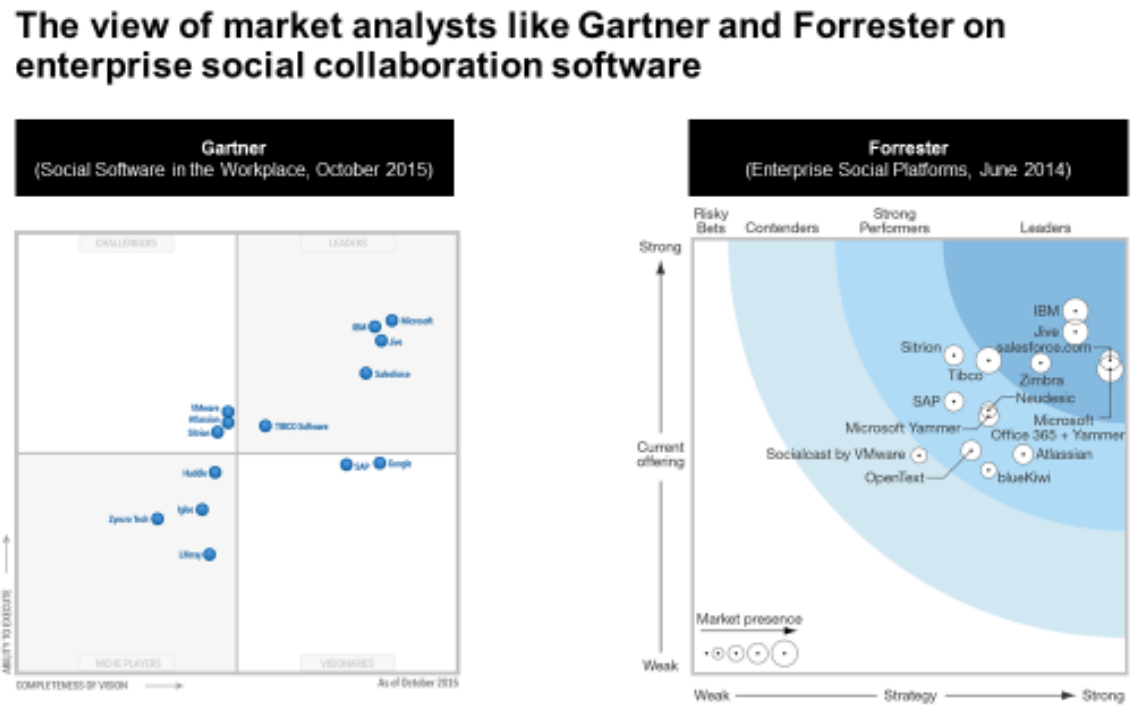

Figure 8: Gartner, (2015); Forrester, (2014), Social software competitive vendir analysis

Based on the review of the dominant technology market research institutions Gartner and Forrester, the relevant vendor landscape is dominated ("leaders" in the upper right quadrant) by renouned names as IBM Connections, SAP Jam, Microsoft with SharePoint and Yammer, Jive and Salesforce. The fast-changing technology innovation cycles and broad landscape of newcomers is a reason for this paper not to dive deeper into the differentiated selling propositions of the vast variety of vendors, considering that the core functional elements develop in a similar adaptation speed across the vendor landscape. Furthermore, the purpose of this paper is focuse on how collaboration technology can fundamentally enable new ways of working and innovating together, not how a single software company can lead this way.

The well known Gartenr Hype Cycle describing the rise, stabilization and decline of new technologies making room for new technology hypes in a repetitive wave, indicates in Figure 9 below the current trends in social collaboration technologies (Gartner, 2013):

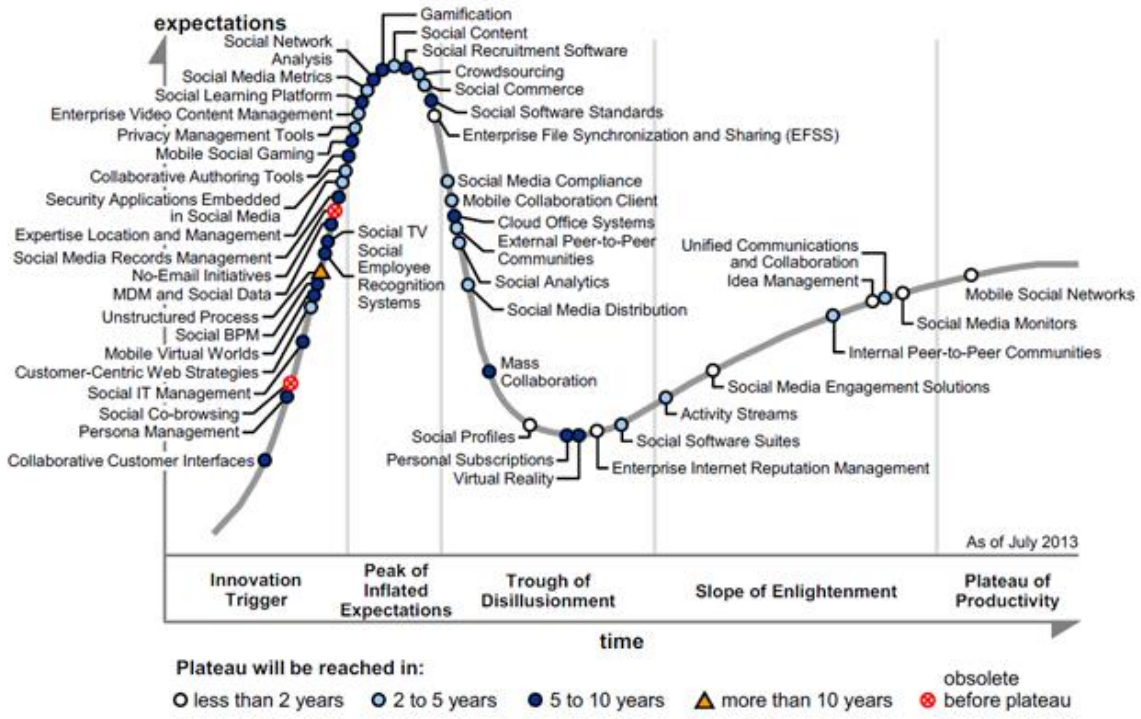

Figure 9: Gartner, (2013), Hype Cycle for Social Software

These hypes come and go, as gamification for example at the top level of the hype a few years ago, but the essential added value relys on fundamental human need and behavioural patterns in the realm of collaboration taken digital. A lot of developments are triggered by private usage habits from social media that shape today, especially for “digital natives” expectations regarding their digital work environment with Enterprise 2.0 tools.

Many companies started implementing social Enterprise 2.0 tools already a few years ago, with IT companies being naturally the first movers. However, all to often the tools are acquired and implemented because they are available, in a manner of digital “arms race”, without having identified the individual vision for their value adding purpose and even less so having created the necessary sourindung structural environment. A lot of this suboptimal implementation is due to a natural lack of experience with new tools. Today however companies are interested to implement social collaboration tool within a holistic work transformational undertaking.

To that purpose mature Enterprise 2.0 technologies focus today on the following central domains (for the purpose of the high level holistic approach of this paper accompanying trends like gamification and similar will not be considered separately): Communication, productivity, knowledge management, external communities, business process management support and the social experience, all of which will be shortly described in the following:

Coomunication:

The general trend is integrating communication functions and interaction flow patterns from what users know already and perceive as highly intuitive from their private social media usage. Advanced players in the sector, like IBM or Jive for instance, combine these informal social media characteristics like chats, blogs, personal walls, newsfeeds, comments and gamification aspects in an enterprise social network together with technologically more advanced communication functions such as integrated web conferencing, shared content editing and similar. Historical content management systems (CMS) evolve also from static information repositories to offering more social interaction functionalities.

Productivity:

Productivity functions focus on enabling and supporting regular business work flows of diverse business user groups allowing them to operate in a more efficient, effective and intuitive manner. Central document sharing and groups with discussion spaces are such examples which were amongst the first productivity functions and are now standard commonplace. With the rise of cloud technologies however the leading players are able to create an infrastructure to allow high volume storage and mobile access and usage of collaboration functions from all sorts of devices, which increases flexibility, connectivity and efficiency of collaborative work. Google with Google Docs and Microsoft with its cloud based Office 365 services are strongly positioned in this mobile and highly integrated productivity sector.

But other social collaboration leaders need not to fall behind on this trend, as most are able and willing to integrate with the big players' online office suits and thus allow the user the same holistic experience and mobile functionalities. However, there are some purely social players that do not focus on productivity at all, which in the office environment - given the trend of user expectations asking for a more and more seamlessly integrated user interface between social interaction and productive collaboration and business processes in general – the added value selling point of these vendors will struggle to compete with fully integrated solutions.

Knowledge management:

As already indicated in previous paragraphs the management of wide spread information and knowledge is an essential motivator for the value proposition of Enterprise 2.0 solutions / Enterprise Social Networks. With the explosive increase of information volume, variety and

velocity it is not possible anymore to manage and categorize this extend of information with formal filing systems as done by classical document management systems. With Enterprise Social Networks these traditional approaches are combined with information from social interaction in expert networks allowing to capture also such tacit and dynamic knowledge.

These new approaches to capturing and managing knowledge can be distinguished in the following way:

- Social knowledge management using functionalities like tagging and dynamic interest group discussion forums allowing to create and access different content on related topics.
- Traditional knowledge management using functionalities such as libraries and document structures and which can be managed under a more rule based framework, regulating access, authorization roles, validation processes and architechural structures.
- Individual account management allowing each user to create his customized view using templates, prioritizing content or topics and sharing individual messages with his colleagues.

External communities:

As previously mentioned global organizational and partner networkes have become a major driver for companies`operations and business models in an ecosystem market environment. With external communities Enterprise 2.0 technologies allow companies to collaborate with their external partners including suppliers and customers alike. Communities functionalities also incorporate social communication elements the same as within internal enterprise social networks, thus creating a more integrated and interpersonal collaboration experience with external parties as opposed to formal fragmented communication channels alone, which mostly require more time, individual and administrative effort. In an environment where complexity is the inevitable reality and open innovation is a must have competitive success factor it is of paramount importance to involve and engage external social communities in all areas of business processes from logistics to product innovation to sales and after sales processes. This may be achieved by incorporating specific work flows that integrate external applications and plattforms at the point of typical interactive process steps to creating new roles for dedicated employee ambassadors to allowing for unstructured ad hoc reponses by enabled employeed responsible at different points of the ecosystem. Existing Enterprise Social Network tools today solve that by using external accounts with restricted access to the

standard internal social network. This is a solution sufficiently suited to integrate partners and suppliers in efficiency oriented processes. A remaining challenge however, is a set up specifically designed for managing and monitoring customer engagement, at the least as done by CRM (Customer Relationship Management) tools for instance. This is an area where Enterprise 2.0 networks are still lacking in target group oriented value adding functionalities and processes. There are a few first movers in the collaboration segment as talkSpirit for example that take first steps toward incorporating social aspects with CRM specific added value functionalities.

Business process management support:

Business process management builds on productivity functionalities but incorporating them into relevant structured work flows specifically designed for different lines of businesses. In the business context, this offer constitutes a very relevant value proposition as it leveraged social functionalities for actionable business value creating processes with a demonstrable return on investment (ROI) along classical KPIs (key performance indicators).

This aspect is something where traditional business software vendors are certainly leading the way given their existing software landscape for a broad range of specific business applications such as SAP with its social collaboration tool SAP Jam. Naturally SAP Jam allows the extension and integration with its widely applied horizontal and vertical software product offering as well as extensions to third party partners. Furthermore, it offers the functionality of “work patterns” that allow a customized creation of templates for different lines of businesses and thus creates tangible value beyond unstructured social collaboration.

Additionally, Enterprise Social Networks provide a platform for connecting and integrating processes from different lines of businesses, that for most parts and especially in established, big companies are operating in silo structures, into end-to-end process integrated work flows. Along this approach, they also link the individuals from the different department and processes together and thus encourage more information exchange and communication which - as a result - can make the processes faster and more agile.

Especially for the increasing mobile work use of employees that prefer and increasingly need to rely on more flexible work models which go beyond the nine to five office desk time, it is a high added value to be able to communicate and work on one central, user-friendly platform where they have not to jump between a wor process step and another app where they might have to ask an expert colleague for support on that task. Just as in their private lives with the

convenience of social media like Facebook, who wants to become the one central platform incorporating all other apps of our everyday use so we never have to switch, employees in the purchasing department want to be able to receive instant notifications and alerts on one central platform in real time and on the go, from where they can instantly contact their supplier and maybe change the purchase order directly as well. All of this of course ideally on an intuitive, user-centered and engaging user interface. This is where not only technological functionality but also user-centered experience design becomes an increasingly important value adding component along all digital interaction points of applications and platforms such as Enterprise Social Networks as well.

The social experience:

According to a study by the research firm Burton Group (today part of the global market research group Gartner) (Gotta, 2007) when implementing Enterprise 2.0 solutions companies should consider the following qualities in their design of the digital social workplace experience: providing personal value, being emergent, communal and providing a collective experience as well as be platform centric. These characteristics are described in the following:

Providing personal value:

Human behaviour has naturally selfish needs as a biological trait for assuring survival. Accordingly, in order to commit to something, they need first of all to understand the value that a new behaviour will provide them with, given that new behaviour implies change and thus effort which is to be avoided when no individual added value is pervceived. Thus, the organization need to deliver clearly and understandably a goal and value to every individual for using a social application. Several Enterprise 2.0 functionalities can provide distinctive individual values such as blogs giving the opportunity to establish your individual voice, wikis allowing to contribute individually meaningful content, tags allowing to frame content with individually perceived meaning and personal accounts allowing to structure meaningful content and processes according to your own preferences, relevance and convenience. These functionalities allow everyone to shape individually their own user-centered experience and can thus be empowering and value adding to every single individual. Without the initial understanding and consequent ability to use those possibilities, individual users will lack the personal motivation and engagement to adapt social collaboration tools voluntarily.

Emergent:

Many transactions and processes are traditionally planned in advance and strictly goal oriented. While this structural approach is esseantial to big and small business alike in order to keep the everyday operations of the core performance “engine” efficient and secure an optimal return on investment to all stakeholders, todays VUCA environment has transformed the market place in many ways that create more uncertainty. More uncertainy and inexpected events require companies to develop dynamic capabilities in order to react fast and be agile in the face of unexpected challenges and suddenly arising opportunities. The way social systems are used creates the necessary space in order to apply such abilities and operate faster and more directly within the ecosystem network when such challenges or opportunities arise. The dynamics of the social network in itself can help foster the emergence of such opportunities and to be shared and acted upon across the social collaboration network. Democratically transparent functionalities such as blogs, wikis and tags create room for individual voices to be heared and included in relevant context, which otherwise, withing siloed project teams, might never have mattered or even been known at all. Communities of best practice can be installed in order to follow up continuously on the dynamics of internal as well as external topics and developments and provide a central resource platforms uniting people, data and best practice processes. All content no matter where its original location, can be referenced anywhere else across the platform in realtime. Through these aspects social collaboration platforms can become central pipelines for employees from all locations and lines of businesses to discover new opportunities easily and directly, allowing the employee to take direct action in accessing either content or people no matter where they are located and no matter how distant not only in terms of geographics, but also in terms of organizational and administrative structures they are. However, in order to leverage these enabling functionalities, the companies face desing challenges such as providing the organizational and in context technological structure that guarantees these individual freedoms by imposing as little restriction as possible and by providing individual users with the respective authorizations to take a wide range of possible value adding actions on their own like for example inviting external people to the enterprise social network. Furthermore, in order to allow the full potential of network effects to take place, there should be low barriers on membership and active participation in order to increase value exponentially from the accessibility of a variety of relevant people which as a social effect on its turn forsters the motivation to participate in a growing number of related people.

Communal:

Allowing and fostering a social collaboration environment to establish communities is essential in order to create for the participants a sense of identification, trust, credibility and engagement due to its social connection effects. Communal ownership of contents, groups and digital interaction spaces such as wikis, forums etc. creates higher engagement and in consequence serious activity as the community and shared content is as such considered to be more relevant. This effect in turn leads to the sharing of existing and the creation of more innovative relevant content and ideas, which is beneficial to the individual as well as to the company as a whole. The design challenge around the communal potential is to allow people and groups to self-organize with as little control and required formality as possible and is to be weighted in a balanced manner against traditional compliance requirements that often get in the way of social dynamics and their inherent force of passionate engagement.

Collective experience:

The notion of the collective experience builds on the communal potential and is – for better reference – a core value proposition of a globally dominant social media platform such as Facebook for example. Facebook`s core value proposition has developed since its starting years based on the data insight regarding use patterns on the platform toward creating visibility and interaction possibilities of the activities of peer users. Individual users are mostly motivated by being able to see what other users are up to, their events, latest activities and interests and so on and by being able to share and interact within these interpersonal communities. Accordingly, social enterprise networks too, in order to succeed in terms of adaptation and active contribution, need to capture and provide information using activity feeds, update notifications and tags about what is happening within the community network. For example, users that subscribed to feeds and following certain tags need to receive data on the activities and statistics regarding other members in conjuction with these contents. This sort of feedback provides collective transparency and a sense of involvement within the relevant community as well as incentives for participation.

Platform-centric:

As already indicated in previous paragraphs it is important to provide a seamless, intuitive and trust worthy user interface in order to increase the social user experience. Currently many business applications including Enterprise 2.0 applications are separate entities with separate user interfaces and accounts within a fragmented and in large companies often overwhelming system landscape. This creates low usability as well as low trust in the different version of

information spread across systems as there is no one certain single point of truth. In consequence, the added business value from each single application is lower individually - including social collaboration software – and as a whole in terms of the entire company system landscape. Using as few as possible central platforms that integrate relevant tools and content allow to create a central single point of thruth, allow more contextualized data analysis and a seamless user experience. Furthermore, the network effects from content and people on a central platform increase the overall value for the business applications including social. A platform-centric approach allows also to create a more transparent, inclusive and public space for interaction and collaboration thus increasing the social experience, a motivator to become engaged and contribute more proactively beyond ones physical and functional boundaries. Integrating applications, content and people on a central platform provides more perspective and context and the possibility to implement respective functionalities like for example automatic recommendations of new relevant content.

Again, as mentioned in the previous points, a key design challenge, especially in the context of traditional compliance issues, is to create an organizational and technological set up that allows this transparency. This means avoiding overly formal and complicated role concepts, permission and validation processes and integration barriers to different enterprise applications.

8. Goals and challenges for the value adding adaptation and use of collaboration tools

As depicted in the previous chapters Enterprise 2.0 technologies have the potential to enable a lot of added value in the face of today`s common market drivers such as centrally the global collaboration across company boundaries and the engagement of individual knowledge for the purpose of a better work experience in terms of efficiency and effectiveness as well as in terms of enabling the innovation required in today`s competitive landscape.

Based on extensive research using sources from a variety of relevant research studies on the subject at hand I will proceed by first, summarizing the core goals for added value from collaboration tools in order to subsequently present the main challenges blocking the successful achievement of theses goals.

8.1. Business goals for the adaptation of collaboration tools

The top business goals for implementing social collaboration tools based on Enterprise 2.0 technologies as can be derived from the previous analysis as well as from additional sources are the following (in no special order):

1. **Optimize business processes and enable new processes adapted to future challenges**

Optimize processes using collective best practices and technology like platforms and social media to streamline processes and co-develop new ones.

2. **Enable more effective collaboration**

Enable more effective collaboration bringing outsiders in and solving problems better and faster. Especially the highly-valued proportion of interaction workers are often still engaged at high capacity with repetitive routine activities, searching for relevant information and managing email flows. According to a study by McKinsey (Bughin, et al., 2012) more effective communication and collaboration using Enterprise 2.0 technologies can increase productivity of interaction workers by up to 20-25% as depicted in Figure 10 below:

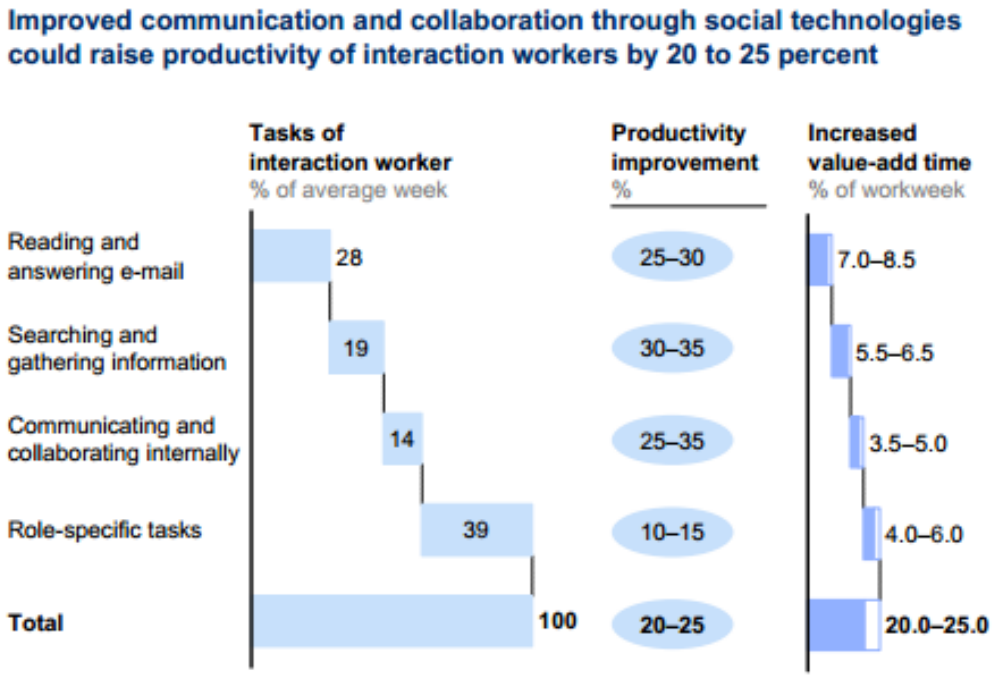

Figure 10: McKinsey Global Institute Analysis, 2012, Productivity increase from improves collaboration

3. **Reduce time and costs and increase revenues**

Reduce time and costs by streamlinging processes, avoiding duplications, shortening distances and lowering communication barriers. Increase revenues by involving the customer voice in the communities and developing best practices using the collective knowledge and experience base in order to solve problems faster and better. According to McKinsey (Bughin, 2015) companies identified as power users of Enterprise Social Networks displayed an incremental 5% increase in value added in 2010 and up to 6.5% in 2014.

4. **Increase internal and external collaboration**

Increase internal and external collaboration by integrating people, content and processes on one single platform and providing all individuals equally with an open voice along meaningful context.

5. **Leverage existing knowledge for actionable business value**

Leverage existing knowledge for actionable business value by identifying expertise and capturing and transferring the knowledge using the variety of social network functionalities.

6. **Support a culture of transparency, open collaboration and sharing**

Support a culture of transparency, openness and sharing by creating two-way dialogs, making business context interactions more personal, reducing power distances on a transparent central platform and connecting people from all sorts of business context on a platform.

7. **Enable creativity and ideation for competitive strength from innovation**

Enable innovation by engaging meaningful contribution and connecting people of different expertise and background on a central social network platform.

8. **Include and empower employees for higher engagement and social experience**

Empower employees by giving them an equal voice on a relevant central platform and allowing for self-organization and proactive, unformal contribution in order to increase engagement, satisfaction and identification with company values and missions.

9. **Create direct customer contact along value creation processes**

Create direct customer involvement along value creation processes by including and empowering them in relevant communities and process steps (like ideation, design, service)

on the digital collaboration platform in order to achieve higher customer satisfaction and loyalty as well as data based insight into customer centric value requirements.

To sum up Figure 11 below shows a similar analysis from Forrester (Forrester, 2014), the leading technology market research institution next to Gartner, based on a survey of 53 North American social collaboration technology decision makers and their perception of potential value from social collaboration solutions:

Figure 11: Forrester, (2014), Importance of Enterprise 2.0 tools

Depending on the maturity level with regards to the adaptation of Enterprise 2.0 technologies, companies are at different stages in terms of capturing the various value propositions from collaboration technologies. For instance, companies that are already more advanced are at a stage where they start focusing on opening their established social collaboration platform to external customers and partners and on designing the respecitive digital workspaces and processes for that specific purpose.

8.2. Challenges for the value adding adaptation and use of collaboration tools

In the following I will proceed to describe the main prevalent challenges companies face for achieving successfully the above described goals for social collaboration tools by firstly, considering challenges to the adaptation of the technology and secondly, to the user behaviour and tangible business added value from deployed social collaboration solutions.

1. Adaptation challenges

Initial hurdle points start already with limited registration or hereafter the lacking presence and use of a social collaboration application. According to Stewart (Stewars, 2012) "About 30 to 40 % of employees where registration is required won't even register and of the ones who do register, another 40 to 50 % will neither post very often or even read other peoples comments when they are sent out. […] It appears that there might be natural ceilings to people who want to participate on a social network.". In order to leverage the previously described social network effects it is necessary to reach a dominant percentage of active participation for a social network to have a pulling effect on new user and user engagement. However, to the current day there is not sufficient research as to where this so-called "tipping point" lies exactly with the use of social collaboration tools.

An inherent reason for this challenge is the lack of perceived personal value as previously mentioned, to undertake the change effort in adapting to and learning how to use most effectively a new application. This lack of personal value is furthermore burdened by a lacking strategic management approach to the organizational and individual goal setting and structural as well as processual alignment to a clearly defined and communicated goal for the use of a new social collaboration application. People need to understand and commit to WHY they need and should want to be using a tool, especiall in the situation where they have to adapt (implying a behavioural change) to yet another new application.

The latter introduces the next challenge to adaptation – most business users, especially in today`s high complexity environment, are already burdened by a cofusing amount of fragmented landscape of enterprise applications. Implementing a social collaboration solution as a separate, non-integrated application with a separate user account only adds to the complexity instead of facilitating and enabling the management of that complexity by consolidating on a single platform with a seamless user experience and a single point of truth for content and activities.

Another adaptation challenge is a potential lacking knowledge on the side of the user group with regards to the practical use of the application – with regards to the technological usability on the one hand and effective and purposeful application on the other hand. This again correlated with the often-lacking strategic goal orientation and lacking demonstration, training, documentation and repetitive use incentives.

2. Business value adding challenges

Challenes to effective user behavior enabling the creation of added business value through the use of a deployed social collaboration solution range from technological all the way to cultural company aspects as described in the following:

Technological challenges (which however might have their origin in actually structural and organizational barriers) start with the difficulty to integrate all relevant external business applications that the user needs for his routine work. In consequence, the communication and collaboration related to such routine work takes place outside the social collaboration network and instead directly within the several business applications or traditionally via email. As a negative result from this companies will face difficulties integrating and combining knowledge within meaningful and holistic context from these different applications. The meaningfulness of the content and in consequence activity within the social collaboration network decreases respectively.

The related technological but also structural challenge is the integration of existing business processes as they require complex technological integration of heterogeneous access and transition points as well as a reengineering of the existing business process design. However, the outcome and efficiency of business processes provide the main ground for measurable business value along traditional quantitative and qualitative KPIs.

An administrative challenge is often found in restrictive formal authorization and security and privacy concerns resulting in artificial technological limitation mechanisms. This constrains the ability and motivation of employees to effectively collaborate and create value using the social collaboration solution including leveraging informal social structures and improvise.

Even when such barriers are limited it remains difficult to capture and reuse tacit knowledge from conversational / informal interaction. Users can apply tags to various types of content including conversation, which however remains a manual effort as it is difficult to develop automatically generated tags around conversations (Gotta, 2007).

On a more personal level of employees as well as managers there is a less tangible challenge regarding the fear of loss of control. Interpersonal dynamics and social status within established companies is traditionally defined as follows: Information is power and vested in the hands of a few individual experts. This legacy mindset and behavioural attitude stands in contrast to the success paradigmas of the new work environment where power comes from creativity of which the value is maximized through the collaborative process of innovation.

Similarly, the social transparency coming with a collaboration platform in the context of business, traditionally dominated by formality and little room for mistakes, is intimidating to many users that fear exposure and consequences of speaking out openly and risking to make mistakes publicly.

These challenges, other than purely technological limitations, mostly result originally in established cultural, organizational and structural barriers to the new way of working as ideally represented by the effective use of social collaboration solutions.

These challenges are on a clearly strategic level where decision makers need to understand that social collaboration technologies are tools that are leveraged best when embedded in the most enabling environment. Enabling environment in this context means:

- Developing a clear and consistent strategic approach to ongoing employee engagement within the digial workspace (just as is necessary for the analog work environment).
- Adapting goals, monitoring and metrics to new values from collaboration and innovation to be able to translate social activity in actual business value.
- To that purpose aligning social collaboration activities with customer and future business model goals.
- Fostering a culture in favour of new work values and goals related to social collaboration such as transparency, trust, self-organization and collaboration.
- Developing structures, leadership styles and processes that decrease barriers and enable collaboration and innovation.

In order to achieve the previously managed goals and meet successfully the above described challenges, companies need to pursue actively a strategic change approach. The area of consideration for the strategic change approach, as well as my assessment framework for an enabling collaboration environment derived from the preceding analysis in the present paper will be described in the chapter hereafter.

9. Strategic change approach to enabling digital collaboration

In the previous chapters I have introduced the main change drivers for the implementation and use of digital collaboration tools in the context of new work success requirements. Following that, I have provided an overview of the potential change enablers to new work approaches

from using effectively social collaboration tools, as well as th main goals and challenges to theirs use. In the following paragraphs, I will proceed to regard the main strategic change design fields that companies should consider in order to fully leverage the potential change enablers from social collaboration tools. As this paper is not based on a case study, I will not specifically look at change path choices – meaning the more operational change approach to how to get from a current state to a desired future state design, as this depends on the individual context and vision of a company. Instead I will provide a conceptual framework for the key strategic change design field and based on that a *collaboration for innovation readiness assessment* that I developed based on the research and analysis in this paper and the identified change design fields. This shall serve as a means to an individual company for identifying its current state and its desirable future state design in the context of social collaboration. Firstly, I will differentiate the area of consideration for the strategic approach to the change design fields:

To the current day, Enterprise 2.0 technologies are mostly rolled out with minor adaptation to the standard out of the box solution within the same environment and same organizational, structural and processual design of the company which within established companies is traditionally not a set-up conductive to effective and innovation-centered interaction work.

A holistic change approach is necessary to design a future state that fosters this new type of work in a sustainable manner. The extend of the change approach depends on the type of change. In order to define the type of change required in the context of enabling ebaling social collaboration I will refer to the multi-dimensional groundbreaking change approach by Ken Wilber and his *integral theory* manifested in his All Quadrants, All Levels (AQAL) framework (Wilber, 2005) as displayed in the matrix in Figure 12 below which is a segment of the overall model:

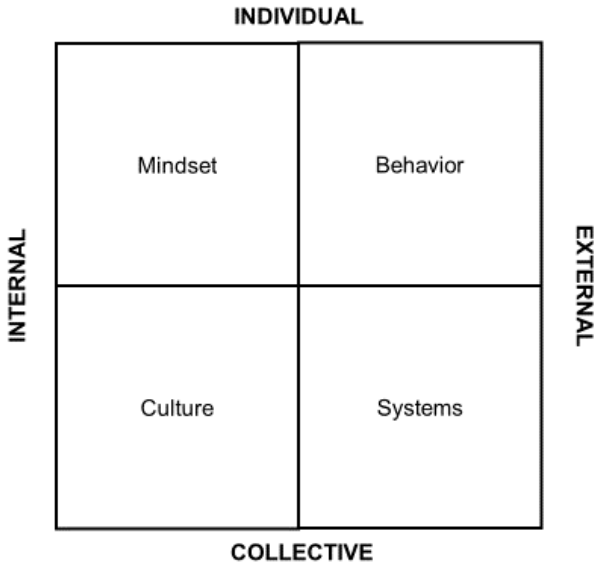

Figure 12: Diana Gummer based on Ken Wilber`s AQAL Map, 2017

The AQAL framework explains how all our knowledge and experiences are interconnected and fit together consistently on an individual (upper two quadrants) and collective (lower two quadrants) level within internal reality (two quadrants on the left) and the external reality (two quadrants on the right).

In order to achieve integral, conscious change, companies need to attend in their strategic change design approach to all four quadrants (Anderson, et al., 2010): The "Mindset" quadrant includes values, identity, beliefs, emotions, thoughts, levels of commitment and so on. The "Behavior" quadrant includes work and management styles, competences, work patterns and actions (including communication and collaboration activities) and other forms of behaviors internally and externally. "Culture" includes norms, collective ways of being, working and realting, climate, spirit and the company`s "DNA" in general influenced by environmental cultural dynamics. "Systems" include organizational structures, hierarchies, business processes and technology (including social collaboration tools) influences by external market ecosystems and developments. The more focus areas of the AQAL matrix are impacted by change drivers as those described in the previous chapters, and the broader the scope of these drivers, the higher is the need for more holistic and transformational change instead of merely incremental change initiatives that lead only to an optimization or enhancement of the initial state. The higher the change impact, the higher will be also the change resistance, pain and effort felt by the people involved, which needs to be considered

for operational change management communication and initiatives. This aspect of operational change management as previously mentioned will not be part of this paper.

The previous chapters looked at change drivers in the context of the VUCA environment that all companies of all industries need to face today and in the future by pursuing their individual paths of Digital Business Transformation. Digital here meaning not only installing functional digital tools such as Enterprise 2.0 technologies, but using digital as driver and enabler to leverage new global business opportunities, respond to changing customer and employee expectations and transforming their way to do business within a network ecosystem. In this strategic observational context, the relevant change design fields to enable social collaboration are not limited to optimizing and enhancing functionalities and usability, but to transform holistically the way people collaborate in the business context supported by digital collaboration tools and technologies. I proceed thus, to look at the change design challenge for the purpose of this paper as a transformational type of change. This allows to broaden the perspective from digital collaboration workplaces as one tool or one change design field within an environment of different organizational change design fields that enable new ways of work, ciollaboration and innovation using Enterprise 2.0 technology as one enabling tool.

Coming back to the AQAL framework this initial situation can be applied as follows:

- **External:** The new VUCA environment and market drivers require companies to adapt individual behavior in terms of new work requirements like open collaboration and innovation as well as their supporting collective systems using digital enablers such as social collaboration tools.
- **Individual:** In order to achieve this behavioral change, individuals need to adapt their mindset in order to align it with new values such as transparency, independent self-organization and knowledge sharing.
- **Inernal:** Mindset changes are influenced not only by internal reflection but also strongly by the environment. The company`s culture can create a shift in norms and identity like openness, creativivity and diversity that is necessary to enable the initial mindset shift in every individual as well as create a sense of purpose.
- **Collective:** The collective culture is the foundation of a more tangible and structured manifestation of the new values in the form of coherent systems, such as flat hierarchies, transprarent and enabling management styles, end-to-end integrated processes across functional departments, the physical workspace enabling

collaboration and innovation and the necessary technologies and system landscape to support these new work structures.

As just outlined, enabling social collaboration tools and their use are one part (systems and behavior) of an integral change approach to new work requirements, meaning effective collaboration and innovation.

Based on this analysis I will proceed to suggest the following conceptual framework in Figure 13 that I developed for the key strategic change design fields to be considered by companies in the context of enabling social collaboration and innovation:

Conceptual framework of key strategic change design fields for enabling collaboration and innovation in the business context

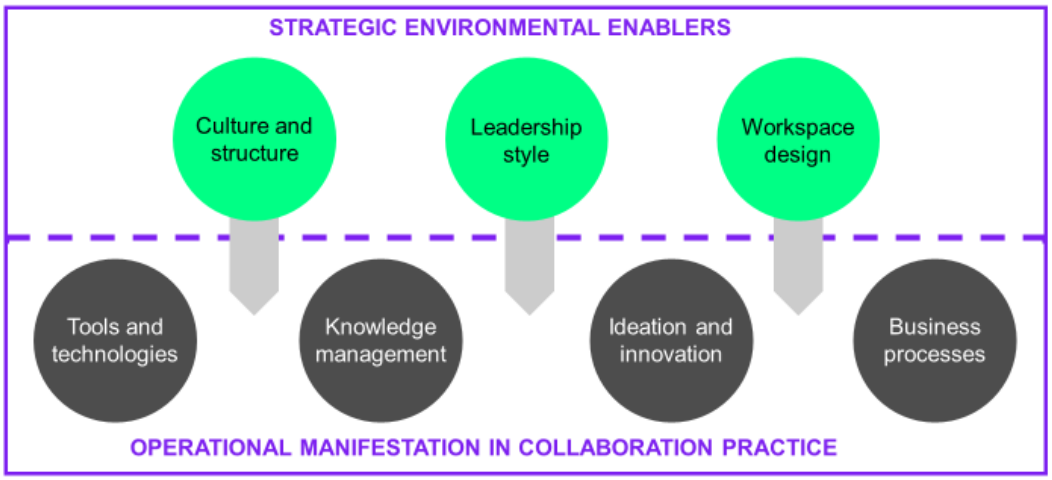

Figure 13: Diana Gummer, 2017, Conceptual framework for strategic change design fields in the context of collaboration and innovation

The lower four design fields descibe the operational manifestation of forms collaboration practice by using supporting social collaboration tools and Enterprise 2.0 technologies, implementing knowledge management, fostering and structuring innovation and integrating business processes. These four design fields have been described in the previous chapter regarding the value adding potential of using social collaboration tools.

The upper three strategic design fields describe environment surrounding collaboration and innovation tools and behavior. In the context of the integral theory these environmental elements have a substantial impact on the successful application and execution of the lower four design fields. In the next paragraphs, I will proceed to describe the change design implications of these three strategic environmental enablers.

9.1. Organizational culture and structure

Substantial value from leveraging the potential of Enterprise 2.0 technologies is vested in the design opportunities of an attractive working environment that enabled all employees to get engaged and participate openly applying their individual strengths and competences within a transparent company culture. Approaches to creating such an attractive, sustainable new work environement as an innovation focused employer can be pursued in the following design areas:

- Creating a culture represented in action, work space design, structure and process design, leadership, shared vision, stories and symbols that foster transparent information and knowledge sharing across hierachie levels thus creating a shared identity.
- Increasing the transparency of information leading up to decisions, decision making processes and responsible stakeholders.
- Proactively fostering, supporting and leading by example the collaboration within virtual communities.
- Providing more independence, responsibility and self-organization through value systems, communication and the establishment of enabling structures and processes.
- Creating a mobile and flexible work environment in terms of time, space, supporting tools and individual development of employeed based on their personal goals, strengths and interests.
- Creating an open and transparent “onboarding” environment focuse on multichannel learning, connection to expert networks and active involvement in future shaping communities and activities.

The Digital Business Transformation to a collaborative innovation-oriented organization is essentially based on a holistic change in the organizational culture. Studies as those conducted by Jane McConnel for Change Agent Worldwide (McConnell, 2013) have shown that organizational openness based on trust and empowerment is a key strategic enabler tot he successful (effective) application of Enterprise 2.0 technologies.

Openness, company-wide interconnectedness and empowerment are ley levers for the potential of virtual social communities, fostering the input of new ideas within new collaboration constructions and the transfer into actual business value by enabling action.

Another implication of openness, trust and empowerment is the above-mentioned change toward more flexible work models, allowing self-organization in terms of more flexible work schedules and mobile working spaces like home office or activity-based zoning within offices.

Self-organizing collaboration networks within (and reaching beyond) company ecosystems are the expected future work design as they allow more agility, faster reaction and proactivity and fast ability to adapt and change organically while leveraging dynamically the collective intelligence and creativity. The underlying cultural values are trust, interconnectedness, transparency and collaboration that represent the success factors for facing the VUCA complexity.

9.2. Leadership style

Employees and mangers alike face a dynamically interconnected work environment that increases complexity, opens up new opportunities and requires new abilities in terms of self-organization, responsible and proactive engagement and cooperation. I have summarized the key leadership and management style success factors based on my research and the previous analysis in Figure 14 below:

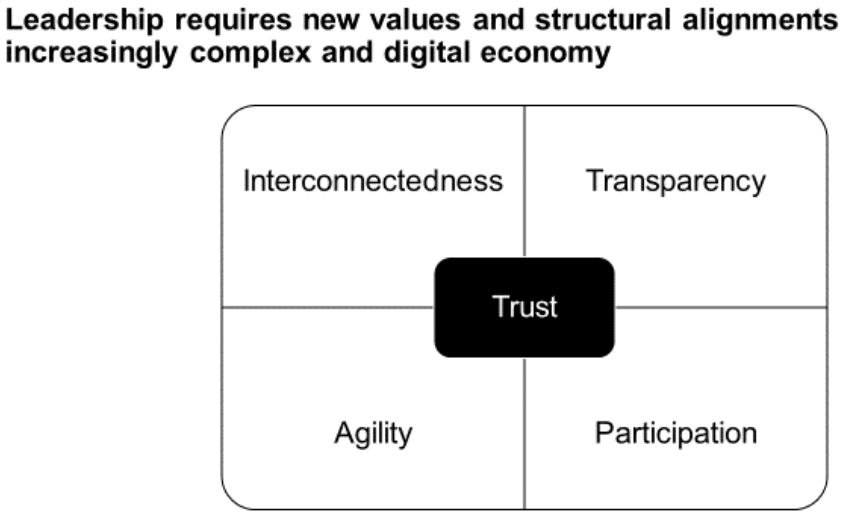

Figure 14: Diana Gummer, 2016, New leadership success factors

This paradigm shift in new work values and success factors are based on an extensive study by Prof. Dr. Peter Kruse, founder of Nextpractice and renowed german organizational psychologists. In 2014 he conducted in cooperation with “Forum Gute Führung” (forum “Good leadership”), an initiative sponsored by the German Federal Labour Office, an extensive survey of 400 managers and 100 employees regarding the paradigm shift for the

“ideal” leadership style of the digital network future. According to his study “Führungskultur im Wandel”, 2014 (Transformation of the leadership culture) around 77% of managers perceive the necessity for a fundamental change in the established leadership culture in order to assure sustainable competitive strength. The required paradigm shifts can be summarized as follows:

- Managers need to transform from individual “heros” to “coaches” and process owners who connect people and ideas and thuse enable the creativity and productivity of networked teams. This stands in drastic contrast to authoritative “micro managers”, a legacy of the Tayloristic era.
- Managers need to live and encourage transparency in communication and decision making processes.
- Managers need to be active role models and function as social network “orchestrators”.
- Managers need to align digital and complement digital with analog initiatives in ordes to leverage the strengths of the various communication and collaboration channels.

Transferring these leadership paradigm shifts to change design field in the context of social collaboration and Enterprise 2.0 technologies it can be statet, that:

Leaders need to develop their ability and approach to act as sponsors and role models for the effective application of social collaboration solutions in order to motivate and engage their employees.

Furthermore, they need to change their mindset to hierarchy and control and individual micro management loses importance and value due to the emergence of information networks. Leadership value and status in this new ecosystem environment derives from identifying the right people with the right knowledge and ideas, connecting them and enabling them to collaborate in a self-organized way to produce new value adding ideas and bring them into action for real business value.

This is not to say, that hierarchical structures can disappear entirely and leadership has become superfluous. On the contrary manager face the challenge to create new structures that are more end-to-end process oriented instead of instead of step by step quantifiable output oriented. Planning processes need to become goal aligned in terms of sustainable value creation through innovation and in consequence more iterative and agile. This is a different mindset compared to tradition 5-year planning and rigid budgeting. An ongoing learining

process need to become natural part of every processual structure. New responsibilities, structures and processes that reflect that management shift need to be in place in order to enable the network success paradigms. The following Figure 15 provides a visualization of this idea in the context of Enterprise 2.0 technologies:

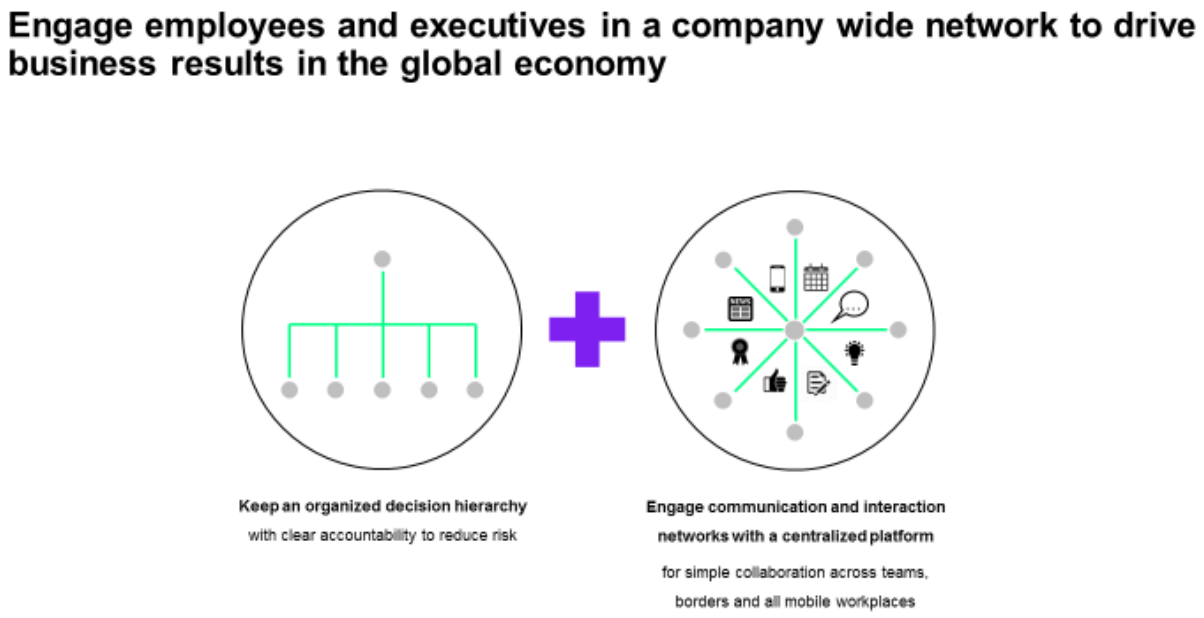

Figure 15: Diana Gummer, 2016, Social networks embedded in hierarchical structures

9.3. Workspace design

Steve Jobs once famously said “If a building doesn`t encourage collaboration, you`ll loose a lot of innovation”.

Most office environments around the world are characterized by closed, individual offices or office boxes one next to the other abetween grey corridors. This workspace design is rooted in our individualistic work culture, especially predominant in industrialized nations. The sole purpose leading the workspace design is traditionally to provide functional space for sitting down in an accustomed environment, and allowing to center the entire focus nine to five on the screen in front of you. Only a minority of employees work physically without a fixed workplace according to the 360° Steelcase Global Report (Steelcase, 2016).

On overall workspaces are dominated by offices and meeting rooms. Space for areas specifically dedicated to concentration, creativity, technology enabled processes and networking are rather limited (Steelcase, 2016).

In the meantime, as already mentioned, work places leaving room and encouraging collaboration and creativity within diverse (gender, culture, demographics) networks are highly valued and attractive to new talent in the context of new work expectations as also proven by the global Steelcase study.

A wide range of research and studies on new work have shown that workplaces are an important enabler of the human experience providing a diversity of stimuli from connecting natural environments (natural light, green space, fresh air and so on) with a diverse and inspiring interior design and embedded enabling functionalities such as writeable walls and technology, modular furniture, networking space enabling interpersonal connections and so on. All of these factors can contribute to motivate and engage employees and in consequence increase productivity and inspire new ideas through the association of a diversity of surrounding stimuli. The resulting productivity or the work environment together with the supporting culture, structure and leadership can reach up to a 20% bottom line effect and less turnover of -30 to -50% (European Talent Survey, 2004).

In the essence, the workplace design should reflect and enable the cultural values and consider human-centered design criteria that empower the individual and their work in the context of the paradigm shift to more self-organization, collaboration and creativity. I have summarized the human-centered change design questions to be considered in the context of workspace design in the following Figure 16:

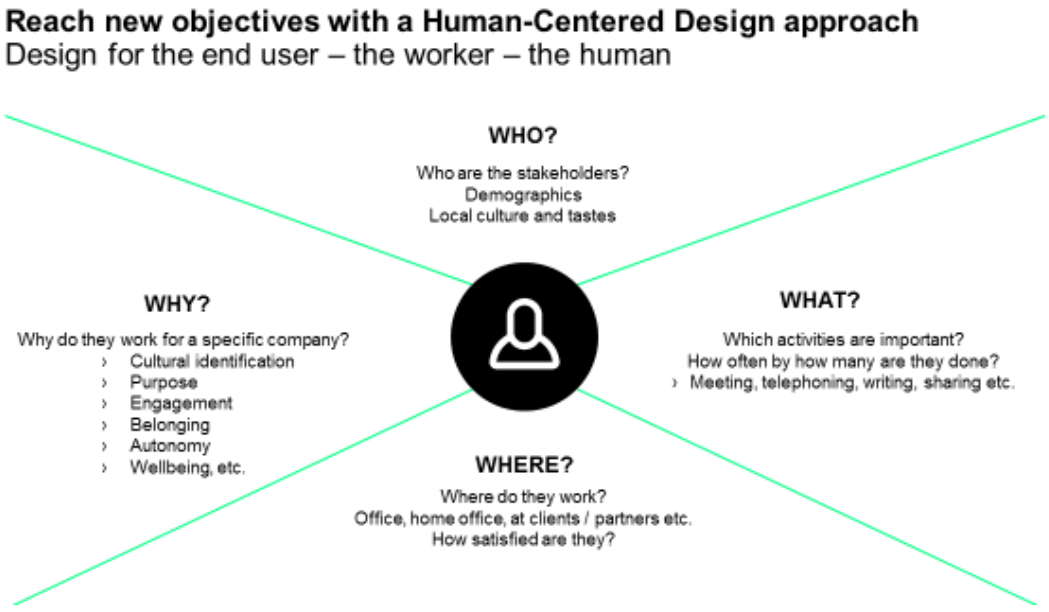

Figure 16: Diana Gummer, 2016, Human-centered Design approach to workspace

10. The collaboration for innovation readiness assessment

Based on the presented conceptual framework for the strategic change design fields to enable successful social collaboration, I will proceed to present a *Collaboration for innovation readiness assessment* that I developed with the purpose to allow companies to assess their current state of social collaboration and innovation maturity and to consider design fields that they companies need to pay further attention to in the context of their transformation toward a more collaborative and innovative business environment and competitive strength. I will present the assessment together with the exemplary survey analysis at BOLDLY GO INDUSTRIES GmbH.

BOLDLY GO INDUSTRIES GmbH, in the following only referred to as BGO, is a small private technology and innovation consultancy with approximately 50 employees. BGO is divised in four departments: Strategy and innovation, user experience design, enterprise technology and data science. The consultancy undergoes since laste year its own business transformation toward developing new work capabilities and digital innovation expertise. Its work environment and structures are typical for technology start ups: flat hierarchies, informal structures and creative work environment.

I started working at BGO in 2016 during an internship and am employed now as a strategy and innovation consultant. The initial goal was to conduct a quantitative survey in the context of this master thesis using the assessment I developed with a number of project customers from different industries. Due to business reorientation, these projects have been deferred so that I proceeded nonetheless to conduct an exemplary assessment at BGO itself using the NHH Qualtrics survey account.

The result percentages can total more or less than 100% as some participant did not answer certain questions and others gave several answers to one question.

The assessment questions together with the results of 31 anonymous participants of BGO and a short summarizing analysis will be presented on the following pages:

Q1 – Subjective perception regarding organizational culture and collaboration

Assessment questions	Fully applies	Rather applies	Does rather not apply	Does not apply at all
1. My company operates in flat and process-oriented hierarchies.	22.22%	18.52%	9.52%	10.00%
2. My company operates rather aligned with visionary guidelines than according to strict rules.	14.81%	24.07%	9.52%	0.00%
3. My company encourages actively transparency and collaboration.	18.52%	20.37%	14.29%	0.00%
4. My company has a clear and coherent strategy set in place regarding networking and cross-department and cross-border collaboration using supporting collaboration tools.	7.41%	11.11%	38.10%	20.00%
5. I have a satisfying level of flexibility regarding my everyday work design (flexible work time, home office, choice within office space etc.)	37.04%	12.96%	4.76%	10.00%
6. My company engages a dedicated person or team responsible for organizing and supervising initiatives fostering collaboration and sharing of knowledge.	0.00%	12.96%	23.81%	60.00%

BGO assessment:

While most employees agree that the company operated in flat, democratic hierarchies (22 and 19%) and is not restricted by rigid rules and regulations (15 and 24%) but rather encouraging transparency and open collaboration (19 and 21%) as well as personal flexibility

and empowerment (37 and 13%), a vast majority does not perceive a coherent strategy regarding collaboration and networking using supporting tools (38 and 20%). Probably related to the lacking strategy, there is no structure in place responsible for organizing, monitoring and fostering collaboration and sharing of knowledge (24 and 60%).

This indicates that the cultural environment is conductive to a collaboration and transparency oriented mindset, however the necessary clear strategy and structure is not in place in order to transform social collaboration into actual, goal oriented business value.

Q2 - Management / Leadership and collaboration

Assessment question	Fully applies	Rather applies	Does rather not apply	Does not apply at all
1. The executive management at my company is visibly invested in being transparent and in engaging transparent communication strategies through a variety of information channels.	6.25%	14.29%	36.36%	33.33%
2. Managers and projects leaders are willing and able to manage physically distributed virtual teams.	18.75%	21.43%	4.55%	0.00%
3. I perceive my manager rather as a coach than a micro manager.	18.75%	12.50%	22.73%	0.00%
4. My manager encourages and fosters the development of my professional network with colleagues and ideas from diverse backgrounds that can enrich my professional purpose.	15.63%	19.64%	9.09%	33.33%
5. I have a lot of autonomy in my every day work processes in order to reach my goals.	21.88%	14.29%	18.18%	0.00%
6. My manager expects me to use certain enabling collaboration tools (central documents management, video conferences instead of physical travel, project and issue tracking etc.)	18.75%	17.86%	9.09%	33.33%

BGO assessment on leadership style:

The segment of leadership style, a result of culture and structural manifestation of that culture, shows a discrepancy between culture and practice. For most questions on practical leadership style and initiatives to support transparency and collaboration, the participants` answers are balanced or even tend toward negative ("Does not apply at all"). A lack of structural enablers as identified in the segment on organizational culture and structure, might be the reason why practical management behavior and initiatives do not coherently align in with the cultural values in operational practice.

Q3 – Workspace / environment and collaboration

Assessment questions	Fully applies	Rather applies	Does rather not apply	Does not apply at all
1. I feel connected to my work environment and feel a sense of identity and belonging.	15.87%	14.29%	21.43%	33.33%
2. My work environment supplies me with a satisfying level of functional infrastructure. I can rely on supporting technologies without perceived additional effort (video conferences etc.).	15.87%	14.29%	28.57%	0.00%
3. Our physical space provides an activity based work environment (meeting rooms, quiet rooms, networking spaces, etc.).	20.63%	14.29%	7.14%	0.00%
4. My work environment allows me to connect socially to a satisfying degree with my coworkers (in terms of space and time).	23.81%	10.71%	0.00%	0.00%
5. I visit often other departments and I am connected with colleagues in different functional departments.	7.94%	28.57%	28.57%	33.33%
6. The spacial zoning of my company`s offices supports regular accidental meetings with colleagues from different departments.	15.87%	17.86%	14.29%	33.33%

BGO assessment on workspace design:

Here again participant answers suggest a discrepancy between the environmental potential of the workspace design, as, on the one hand, most agree it provides the necessary space (activity based zoning), infrastructure and set-up as well as space and time for informal social

connection. On the other hand, a majority of employees does not identify with their work environment and do not leverage the opportunity provided by the special design to connect in interdisciplinary teams.

As all change design areas are interconnected, again, this may be a result of the lacking manifestation of the company culture in the form of clear strategic goals, structures and leadership practices.

Q4 -Supporting collaboration technologies

Assessment questions	Fully applies	Rather applies	Does rather not apply	Does not apply at all
1. I have access to collaboration technologies other than email.	29.27%	10.42%	3.03%	0.00%
2. I use collaboration technologies to a large extend and they are integral part of my every day work.	14.63%	14.58%	15.15%	0.00%
3. Many of my colleagues I work with use the same collaboration technologies.	14.63%	20.83%	6.06%	0.00%
4. The usage of our collaboration technologies is intuitive, user friendly and efficient.	7.32%	16.67%	21.21%	0.00%
5. Using our collaboration tools is fun and strengthens my contact to colleagues thanks to social functions such as informal chats, posts, news feed, groups etc. that remind me of my private social media use.	9.76%	10.42%	24.24%	33.33%
6. Our central collaboration tool is seamlessly integrated in our system landscape (SAP ERP etc.).	7.32%	10.42%	21.21%	66.67%
7. Geographically dispersed teams often use the possibility of remote meetings and the collaboration via central collaboration tools.	17.07%	16.67%	9.09%	0.00%

BGO assessment on technology / tool support:

The assessment on technology adaptation and use shows an interesting picture which might be linked to the participants being mainly technologists with a natural affinity to the use of technology even when those are not particularly user friendly. The majority of participants indicate that they and their colleagues use the available collaboration in their everyday work.

Apparently however, they do so despite the available tools not being very user friendly, fun or even integrated with other work applications. Another explanation is the start-up like structure of BGO, due to which there is not a very broad system landscape in place to be integrated with.

Q5 – Ideas / innovation and collaboration

Assessment questions	Fully applies	Rather applies	Does rather not apply	Does not apply at all
1. We use a digital platform integrated with our available collaborative functions where ideas and innovation projects are transparently shared and commented on.	26.67%	17.65%	7.89%	66.67%
2. My manager regularly undertakes activities and initiatives for identifying improvement and innovation potential (iterative feedback processes, innovation workshops etc.).	6.67%	15.69%	23.68%	0.00%
3. Exploration and experimentation with new approaches and ideas is supported and enabled with available time to that purpose.	26.67%	13.73%	18.42%	0.00%
4. I receive constructive feedback for my ideas and improvement suggestions which are seriously considered in my management team.	20.00%	15.69%	18.42%	0.00%
5. My company provides professional development training and workshops teaching creativity and innovation methods that I can benefit from.	20.00%	9.80%	23.68%	33.33%
6. A failed innovation initiative is respected as a lesson learned and does not represent a risk to my professional career within the company.	0.00%	27.45%	7.89%	0.00%

BGO assessment on ideation and innovation:

BGO being a technology and innovation consultancy, it is not surprising that many participants agree on certain work environmental aspects being conductive to innovation such as getting the time and encouragement to invest in ideation as well as professional development and workshops teaching on subjects and methodology for creativity and innovation. As innovative thinking and experimentation is a core part of large proportion of BGO`s employees it is also reasonable that risk taking and mistakes are accepted as routine components of the job. In the same time, here again manifests the lack of practical structure to encourage collaboration and innovation systematically, given that the application of collaboration technologies to that purpose is very fragmented and not part of the routine ideation process (67% on question 1). Management processes differ also individually in that context as some systematically engage in innovation processes while others don`t.

Q6 – Knowledge management and collaboration

Assessment question	Fully applies	Rather applies	Does rather not apply	Does not apply at all
1. My company has clear guidelines for the standardizes, digital capturing of relevant content.	22.22%	6.98%	18.18%	15.38%
2. Our process guidelines also incorporate and support the digital capturing of company-wide reuse of information and knowledge from best practices (incl. informal knowledge).	11.11%	13.95%	13.64%	15.38%
3. The most convenient and reliable access to information for me is searching through our digital collaboration platform.	0.00%	25.58%	11.36%	7.69%
4. The access to our digital collaboration network increases the speed and efficiency of my access to relevant information and the knowledge exchange.	16.67%	20.93%	11.36%	0.00%
5. The systematic capturing, sharing and spreading of my acquired information, knowledge and experience is part of my performance review.	16.67%	4.65%	20.45%	23.08%
6. The onboarding of new colleagues involves per default structured relevant information access and learning experiences with a variety of digital offers on a central platform like webinars, video tutorials, wikis and document structures with training material etc.	16.67%	11.63%	13.64%	15.38%

7. Specific expert know-how evolves in my company within expert and key user communities. These are also present on our digital collaboration platform, allowing when needed for simple, direct contacting of the relevant expert information holder.	16.67%	16.28%	11.36%	23.08%

BGO assessment on knowledge management:

The assessment on BGO`s knowledge management shows also rather fragmented results even regarding the existence of company guidelines indicating that the knowledge management processes depends on individual work and management approaches. Mostly effective and digital knowledge management is not systematic part of individual performance as indicated specially by questions 2, 5 and 7.

Q7– Business process integration using collaboration tools

Assessment questions	Fully applies	Rather applies	Does rather not apply	Does not apply at all
1. Collaboration tools play an integral role in my regular work processes.	30.00%	35.00%	40.00%	28.57%
2. Collaboration tools are systematically integrated especially along interaction based (and repetitive) process steps of my works flows (like coordination processes, decision instances, query processing etc.).	30.00%	45.00%	20.00%	28.57%
3. Customers and / or external partners are systematically included in our digital collaboration network (situation based, process based or project based).	40.00%	20.00%	40.00%	42.86%

BGO assessment on business process integration:

Regarding business process integration several participants chose multiple answers (Totals > 100%). Given the project-oriented work of a consultancy this is due to different processes and tool used with different customers, especially as large industrial customers often impose their own digital workspaces for collaboration. Overall it can be said that collaboration tools are already vastly integrated along interaction points of business processes at BGO and in external collaboration with their customers and partners.

11. Conclusion and future outlook

In the present paper, I have argued that digital workplaces, specifically Enterprise 2.0 technologies and social collaboration tools have reached a technological maturity level where they can offer great value-adding potential for collaboration and innovation in the business environment. In the same time, I have stated the problem that most companies fail to leverage this potential due to a predominantly technological project approach. My hypothesis, that I unroll throughout this paper, is based on the idea that a holistic approach to the strategic change design areas of Digital Business Transformation is a prerequisite to leveraging the full potential of social collaboration tools. With this approach, I suggest that the most impactful added value to be targeted by the application of this type of technologies is to use them as digital enablers to effective collaboration and sustainable innovation. The ability to adopt innovation as a repeatable and dynamic capability constitutes within the foreseeable time horizon a key success factor to sustainable competitive advantage within the global market environment. This global market that most companies of no matter what industry operate in is characterized by what is commonly reffered to as the “VUCA” environment. VUCA stands for “Volatility”, “Uncertainty”, “Complexity” and “Ambiguity”, global environmental attributes that are essentially the result of the increasingly rapid development in technologically driven innovations that have transformed at unprecedented speed and extent the way people, data, things and processes are connected on a global scale. The evolution of internet technology, social media and the rise of big data and respective new data processing technologies have democratized information and knowledge acces, created global data-based network ecosystems and introduced the rise of intelligent machines and cyber-physical systems. The consequence is an environment where people and companies operate in complex networks within a fast-changing and globally competitive market environment facing new customer expectations and low entry barriers to newcomers. In this environment where operational excellence and efficiency become increasingly a global commodity due to the technological evolution, established companies need to reevaluate and often reinvent their values, business models and ways of working. This ongoing and holistic process touching on organizational culture, structures, leadership and processes is referred to as the above mentioned Digital Transformation. It is within that context, that companies need to adapt to the new success paradigms of data mastery, creativity and innovation as the sole remaining differentiator based on human nature and diversity. It is within this context also that collaboration across functional, geographic and even corporate borders has become a key success competency companies need to invest in, in order to leverage the power of bringing

together the knowledge, experience, perspective and ideas of their global human resource network in order to create inspiring innovation.

Social collaboration tools are technologically able to act as an enabler to this purpose as they provide a digital workspace with communication, collaboration and social functionalities, thus creating an environment that can bridge large geographical distances while creating simultaneously a human-centered interaction experience.

The actual business value from applying these tools however depends largely on the behaviour of users within this digital environment. Organizational culture, structures and leadership styles, especially within established companies, have created over a long period of time behavioural habits that are inconsistent with values such as transparency, sharing, self-organization and empowerment of individuals no matter their hierarchical level. These values and respective behavioural norms however are a prerequisite to leveraging the above-described potential of social collaboration tools.

As most companies nonetheless implement these social tools in a similar way to traditional ERP-technologies, they do not achieve that behavioural change that is necessary for effective collaboration and innovation using these tools.

For that reason, I propose a conceptual framework for a strategic change design touching on integral change design fields such as on the one hand culture and structure, leadership style and workspace design as strategic environmental enablers of collaboration norms, and on the other hand technologies and tools, ideation and innovation approach, knowledge management and business process integration as operational manifestations in collaboration practice. Based on this holistic transformation framework I designed a collaboration readiness assessment in order to help companies understand their current maturity state with regards to collaboration and innovation competencies, as well as to identify the change design fields that they need to focus on the most.

The lacking availability of best practice and concrete use cases applying a holistic approach such as this using collaboration tools limits the informative value with regards to a measurable impact of these technologies and suggests the necessity for further research using concrete use cases.

Furthermore, it will be interesting to investigate in the future the potential and impact on digital collaboration from the rise of newly maturing technologies such as AI (Artificial Intelligence) and ML (Machine Learning).

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