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2 Communication Practices in Technology Companies

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Abstract

It is contended that the skills or competencies that are required of business graduates by technology companies, range from the ability to communicate complex information about global issues in ways that are accessible to and connect with the general public, to problem-solving and project-based interaction. This represents a shift in the type of communication practice that now characterises the technology company, with its main focus on “agile” frameworks of teamwork. This report examines the context for this development, and explores the role of assessment and pedagogy in preparing the student for these communication competencies, from the perspective of the technology company.

Keywords: *communication practices, competencies, technology companies, teams, pedagogy*

Introduction

Anecdotal evidence would suggest that communication practices among employees and management in the technology industry remain to a large extent under-examined and, as a result, are not fully understood. Thus, some uncertainty remains at the centre of discussions on the issue of how precisely those working in the sector communicate and to what extent these modes of communication enhance or inhibit organisational success. This paper seeks to address this question.

Method

A number of reports on developments within the technology industry, and more specifically on changing modes of communication in the hi-technology company, have been published within the last five years. This study conducted a review of literature in order to examine the nature of these changes. Following the main findings from this investigation, this report makes a number of recommendations. These include conducting a more comprehensive survey of the DIT current offering of programmes and communications modules in light of the requirements of technology companies.

Discussion

Defining Communication

It might first be useful to consider the very nature of the term “communication”. There are, it is generally agreed, significant problems in any attempt to define communications. Losee (1999) explains that “hundreds of explicit and implicit definitions of communications have been published in the communication and related literature for use by scholars and practitioners trying to describe, predict and understand communicative phenomena”.¹ From the

¹ Communication phenomena in this instance might include: unmediated face-to-face conversation, turn-taking, the use of metaphor (conventional, poetic and conceptual) the employment of various registers, paralinguistic choices, contextual and cultural sensitivity, and the utilisation of schema and scripts.

interactional perspective, it is generally held to be the process by which people interactively create, sustain and manage meaning. It may also be described as an interlocking linguistic, cognitive, social, affective and non-verbal process.

Koschmann (2012: 2) makes a distinction between traditional views of communication as simply the transfer of information (the so-called “code model” deeply entrenched within Western discourse, scholarship and practice) and a more recent conceptualisation of communication understood as a process that shapes our social reality. For the latter, communication is fundamentally about “continually creating and negotiating the meanings that shape our lives” (ibid.: 2).

Organisational Communication

In the organisational context, Conrad and Newbury (2011) citing Hynes (2005) propose that core functions such as planning, organising and leading staff depend on effective communication. Traditionally, formal hierarchical communication within organisations has been beset with problems such as information-ownership, environmental, semantic and physical barriers, authority structures, job specialisation, power relations and intercultural differences – all of which have affected organisational activity and output. Garner et al. (2016) explain that this has given rise to study of supervisor-subordinate communication, diversity (including *inter alia* intercultural communication), technology, corporate communications, organisational socialisation, organisational change and crisis/risk communication, and acknowledge the work of Miller (2005), Putnam & Boys (2006), Allen, Gotcher & Seibert (1993) and Redding (1985) in these areas. Garner et al. (2016) also outline the spectrum of theoretical frameworks emerging from analyses of communication within organisations conducted from 1994 to 2013 – leader-member exchange theory, structuration theory, systems theory, media richness theory, and social identity theory amongst others – yet remark that these fail to address how internal communication makes organisations more effective. This point has also repeatedly been made by Welch & Jackson (2007) and Smidts et al. (2001).

Studies of communication modalities in organisations have tended to focus on the impact of globalisation on the team dynamic; these discuss how communication within and among virtual teams has become necessarily complex due to the constraints of geography, time and space (Accenture, 2005; Behrend & Erwee 2009; Behrend & Erwee 2009; Griffith et al, 2003; Intel Corporation, 2004). Siebdrat et al. (2009) remark that the types of communication challenges that this presents for the team include the absence of co-location, reduced trust, the inability to establish common ground and communication barriers. These challenges are experienced by both the teams and their managers, leaders or facilitators, where communication and collaboration is hindered by a difference in cultural backgrounds, difference in languages and in organisational culture.

For Siebdrat et al. (2008) dispersion and its impact on communication practices is not only a matter of degree but also of kind; they argue that spatial separation across the hall or worldwide can affect the extent of collaboration and communication.² Malhotra et al. (cited in Ebrahim et al, 2009) identify a number of possible solutions to what is described as the “dark side” of virtual teaming; they suggest that in order to enhance the effectiveness and efficiency of virtual teams, i.e. improve their internal and external communication leadership, the key is communication.³ The leader must be capable of articulating the vision for the team, aligning team members and facilitating the formation of strong highly motivated coalitions, etc. Looking to the hi-tech organisation, Garner (2016) states that many now engage in practices such as organisational change management and self-managing teams. These are described as “novel”, and reflect the response of the technology company to increased levels of globalisation.

² See Siebdrat et al. (2009) for a discussion of the value and challenges of working in the virtual team environment.

³ By “communication”, Malhotra et al. mean what Kalla (2005,) citing Bovée and Thill (2000), calls “effective communication” – the achievement of shared understanding.

Communication Practices

Notwithstanding discussions of communication in the organisational context, the precise nature of communication practices within the technology industry remains largely unexamined. For the purpose of this report we will use Zakrzewska-Bielawska's (2010) lengthy definition of the hi-tech industry to mean companies with a high demand for scientific research and intensity of R&D expenditure, with high levels of innovation, fast diffusion of technological innovations, fast process of obsolescence of the prepared products and technologies, and high levels of employment of scientific and technical personnel. As part of this definition, Zakrzewska-Bielawska (2010: 94) notes how the hi-tech industry is characterised by high capital expenditure and a high rotation level of technical equipment which is replaced by more modern and innovative devices; intense, strategic domestic and international cooperation with other high technology enterprises and scientific and research centres, the implication of technical knowledge in the form of numerous patents and licences, and an increasing competition in international trade.

Describing these hi-tech organisations as "socio-technical systems", Brooks & Rawls (2012) remark that there is as yet no systematic understanding of the interrelationships between social and technological elements. This is largely due to the pace of technological innovation, and pace and scale of globalisation which continue to change the contexts within which newly graduated recruits work. The workplace today is information-laden and graduates are expected to have multiple competencies to allow them to interact successfully.

This is reinforced by Conrad & Newberry (2011) who state that business managers and educators perceive a strong communication skills repertoire to be extremely valuable to employees and organisations. Communication competence plays a critical role in career and organisational success (Roebuck, 2001; Certo, 2000; Rushkoff, 1999; Dilenschneider, 1992). Despite this, Conrad & Newberry (2011) maintain that there is a lack of a strong communication skills repertoire in graduates entering the workforce.

More recently, and specifically in the context of the Irish economy, a number of reports have emerged, within the last decade or so, which examine the importance of communication in the workplace. A FÁS report of 2003 detailed the critical skills required by companies in all industry sectors in Ireland. At that time, oral communication topped the list. Eleven years later, Archer Specialist Recruitment (2015: 27–29) stated in their report on future trends and predictions that top candidates will need to possess strong communication skills, and that those with advanced communication skills and stronger soft skills⁴ will have the edge.

In their 2012 industry report, Forfás looked at the skills needs for high-ICT competencies and reiterated the critical importance of good communication skills. They state that all [management] capabilities are underpinned by "generic" skills: by this they appear to mean strong communication skills.⁵ Springboard (2016) makes the case that transferable "people skills" are increasingly important in the context of cross-enterprise competencies.

Griffin et al. (2012) contextualise changes to the operational structures of technology companies in terms of shifts in the global economy. They cite Kamarkar and Apte (Griffin et al, 2012), who describe one shift as being from the manufacture of goods to the provision of services, and explain that this is particularly visible in the world's largest economies where services now account for more than 50% of GDP. However, Griffin et al. argue that a more significant shift has been from an economy based on material goods and services to one based on information and knowledge. In response, the structure of companies and the nature of work has changed. Organisational structures have become flatter, decision-making has become decentralised, information is widely shared, and work arrangements have become

⁴ That is, those business graduates with the capacity to share/exchange their meaning more effectively than others.

⁵ In addition to core business skills/knowledge a core set of "generic" skills is recommended including communication. It is assumed that young graduates are already to a greater or lesser degree "digitally literate" (Forfás, 2012).

flexible. A key indicator of this requirement for flexibility is the change to the team structure. Workers now form project teams across organisations and there is increased use of self-managed teams.⁶

As a result of these developments, the skills required of the worker by technology companies have also changed. Autor et al. (2003) state that as information and communications technology (ICT) is taken up by a firm, computers will substitute for workers who perform routine physical and cognitive tasks, but they will complement workers who perform non-routine problem-solving tasks. These communication tasks can include responding to discrepancies, improving production processes and coordinating and managing the activities of others (Autor et al., 2003). These are considered to involve a higher skills set than before, as they require the worker to be able to respond to complex problems, to communicate effectively, to manage information, to work in teams, to use technology and to produce new knowledge (Lisbon Council, 2007). As illustrated in Table 2.1, Price et al. question the relevance of pedagogical and assessment methods used by educational institutions to prepare the student for these skills and competencies required by the technology company.

Standardised Student Assessments	Tasks in the Outside World
Assessments are designed primarily to measure knowledge of school subjects and these are divided by disciplinary boundaries.	Subject knowledge is applied within and across disciplinary boundaries along with other skills to solve real world problems, create cultural artifacts, and generate new knowledge.
Students are assessed on their ability to recall facts and apply simple procedures in response to well-defined, pre-structured problems.	People respond to complex, ill-structured problems in the real world contexts.
Students take the exam individually.	People work individually and in groups of others with complementary skills to accomplish a shared goal.
Students take a “closed-book” exam, without access to their notes or to other sources of information, and use only paper and pencil during the assessment	People use a wide range of technological tools and have access to a vast array of information resources. The challenge is to sort through the resources to find relevant information and use it to analyse problems, formulate solutions, and create products.
Students respond to the needs and requirements of the teacher or school system.	People respond to official standards and requirements, and to the needs and requirements of an audience, a customer, or a group of users or collaborators.

Table 2.1: Gap between assessment and work practice, from the perspective of the technology company
Source: Timms et al. (2011)

Griffin et al. (2012: 7) contrast these assessment methods, described as “traditional”, with “new, technology-based learning environments”. They cite the work of Kozma (2003), who describes how students work in groups to specify their own research topics, search the web for related information, use data-loggers to collect science data or web forms to enter survey data, use databases or spreadsheets to analyse the data, use e-mail to communicate with outside experts, and use word processors, graphics software or presentation software to prepare reports. Even in 2010, these were described as “novel” classroom approaches.

The findings from a project on digitisation in the telecommunications industry, was presented to the World Economic Forum in January 2017. This project was launched in 2015 and involved the participation of companies across the telecommunications industry, as well as leaders from the World Economic Forum and Accenture. The report confirms

⁶ This finding is part of a collaborative project entitled “The Assessment and Teaching of 21st Century Skills” which was coordinated by Griffin et al. (2012) and underwritten by Cisco, Intel and Microsoft, and six participating countries.

earlier emphasis placed by Griffin et al. (2011) on skills such as problem solving, but goes further to argue that companies need to reform company culture in order to attract digital talent. Part of the reason that businesses need to innovate is because customers have very different expectations of service provision than in the past. As a result, technology companies need to provide digital tools to improve customer experience of a product through personalisation and digital customer service options.

Two case studies are cited in the report that give an insight into changing communication practices in the telecommunications industry in response to customer demand for innovative products. First, Google, whose project “Loon” involves sending a network of balloons into the stratosphere in order to provide a more sophisticated level of coverage to consumer devices. The project was piloted in New Zealand in 2013, and further launches are planned for Indonesia, Brazil and Australia. Crucially, the success of this project has relied on global teams to project manage the concept and implementation of “Loon” using technology and communication tools.

Similarly, GiffGaff, a UK-based mobile virtual network operator has decided to eliminate the call centre-based customer service model. Instead, the report describes how the company has developed an online community where its own members are sharing and resolving queries. This method is proving to be successful, as it has been able to increase customer engagement with the product. However, the authors of the report warn that while these are two success stories, the telecommunications industry faces significant skill gaps. They argue that these go beyond a mere shortage of digital skills and an ageing workforce, as a more fundamental change is required in the way that incumbent companies address the talent question going forward – especially when viewed in comparison to digitally native businesses.

Communication Competencies

If we agree with Argyle et al. (1981) that by a socially skilled behaviour we mean that behaviour which is effective in realising the goals of interaction, we might reasonably expect the university experience to have provided graduates with such competencies on entering the workforce. However, Kilov & Sack (2009) maintain that in many cases there is a difficulty in transferring knowledge and skills from the classroom to the organisation, and that communication between graduate and IT expert regarding the sharing of “domain knowledge” is key to understanding why this problem is arising. The impact of this problem will be felt by the organisation through an inability to achieve strategic targets in a timely manner, which will have a knock-on effect on consumer confidence.

More recently in the context of information communication technology and particularly in the realm of software development – a major component of Ireland’s export industry and the business of both indigenous and foreign firms – the concept and philosophy of “agility”⁷ and its derivative practices has arisen where unmediated face-to-face communication plays a central role. Anecdotal evidence would suggest that agile-like practices are becoming prevalent in the hi-tech sector for the resolution of problems and decision making. Given the increased emphasis on the virtual team, it is somewhat ironic that central to “agility” is face-to-face interaction, demanding greater interpersonal communicative competencies.

⁷ “Agility” provides for a relatively novel non-hierarchical context where communication practices eschew traditional top-down hierarchical behaviours with inbuilt power relations and power structures, and lend themselves towards what may be described as ‘agile-like anencephalic modes/modalities’.

Conclusions

Many definitions of “communication” subscribe to the code-based transmission model (Daft, 2015; Griffin, 2014; Stoner et al. 1995), which fails to appreciate the essence of communication in the workplace: the exchange of meaning. This report has shown that it is the context of the organisation that allows a differentiation between communication in general, and communication within industrial contexts in particular. Rapid technological change has changed the business environments in which graduates now operate; the emergence of virtual team-work and the increasing digitalisation of the workplace now places novel demands on these information workers. Despite a plethora of studies, precisely what communication practices in the technology workplace comprise, remains a matter of continuing debate and requires further research.

Recommendations

While there has been a shift in teaching practice from the classical model of lecturing to more interactive models to facilitate the development of problem-solving skills through a problem-based learning approach (PBL), for example Johnson et al. (2015) argue that teaching practice needs to go much further so that the university classroom will start to resemble “real-world work and social environments that facilitate organic interactions and cross disciplinary problem solving”.

In light of this, the authors make the following recommendations:

- 1 A survey should be undertaken to examine what communication competencies are being developed through communication modules across the Institute, and how comparable these are with the requirements of our graduates, by the technology sector. Following from this exercise, it is suggested that a roundtable discussion with communication lecturers is held in order to review the findings from the survey, examine what kind of teaching model and learning culture would develop these competencies more fully, and discuss the role of the communication lecturer in this process.
- 2 A comprehensive, college-wide survey is required to determine what communication competencies are being developed across non-communication specific modules. Notwithstanding the different attributes required of the marketing graduate compared with the finance graduate, for example, there is a need to identify what models of pedagogy and assessment are being employed across non-communication subjects, which indirectly support the development of communication competencies in our graduates.
- 3 Following from this, it would be instructive to determine the nature and types of learning environments and teaching model(s) that colleagues across the institute have found to be most conducive to promoting the transfer of learning.
- 4 A final recommendation would be to carry out a survey of business professionals operating within the technology sector to elicit suggestions about how a cross-faculty business communications curriculum might be adapted to meet the needs of business.

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