Scenario Analyses of the Futures of Journalism Profession*

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Abstract

The futures of journalism as a profession are analysed from various theoretical perspectives. The first scenario analysis focuses on the tools and methods of journalism and on the substance of journalism. In the second scenario analysis, the driving role of digital ICT technology and learning processes of journalists are analysed in relation to the modern journalism profession. Max Boisot's Information Space theory is used as a theoretical framework. In the third scenario analysis, the driving role of two innovation paradigms are analysed in relation to the modern journalism profession. In the fourth scenario analysis, the author presents Knowledge Retrieval Matrix developed by Gammelgaard and Ritter (2004).

Keywords: Scenario analysis, journalism, professionalism, knowledge management theory, knowledge theory

Introduction

There are many articles where the history of journalism has been theorized, researched, studied and criticized worldwide by people coming from a wide variety of disciplines. Research about journalism and among journalists has been established as a widely acknowledged field (see e.g. Pavlik, 1999). This research activity has taken place in the latter half of the 20th century. Innovation journalism is a new concept within the field and that is why there is less research about its history. Even less articles are available about the future of conventional and innovation journalism (see Cerf & Whitfield & Nordfors, 2005). This article

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is methodologically based on scenario thinking and futures studies. The idea is to present different scenarios to help us understand the key driving forces of journalism and innovation journalism in particular (Burt & van der Heijden, 2003).

This article is focused on analyzing the future of innovation journalism and journalism as a profession in general. Personally I hope this research helps journalist to see their current situation from new perspectives. In recent decades, journalism has become a central social institution. However, there are many powers and tensions causing social, political, technical and economic pressures for journalists. Producing and performing good journalism is not easy in these turbulent times. In the conditions of economic recession, these powers are even stronger and tensions are becoming stronger, too. In professional circles, the challenges of the journalism profession are most often articulated as a threat to the autonomy of journalism professionals. The idea of journalistic autonomy has been an important device in carving out a strong social position for a journalism claiming to serve the "public good". On the other hand, the definition of "public good" is not so self-evident and obvious thing it used to be before (see e.g. Cooper, 1994, Deuze, 2005, Kunelius, 2006, Folkenflik & Participant Media, 2011).

The key aim of this article is to help journalists in general and especially innovation journalists to understand the current situation of their profession and to identify some critical tensions of the journalism profession. A profession of journalism is a key profession in the modern information or knowledge societies. This requires a special attention in scientific and innovation policy analyses.

In recent years, many new drivers have emerged and fundamentally changed the role of traditional journalism. In a time of rapid technological, social and economic development, "old-school" news journalism is undergoing spectacular changes. Especially new communication technologies (e.g. digital and ubiquitous tech solutions), increasingly globalized media and intense commercial pressures have an impact on the way news organizations and journalists operate (Brichta & Johansson, 2008). We are experiencing the rise of the network generation. The requirements of ICT skills and competences are increasing radically. New phenomena, such as avatars, are emerging. (Coleman, 2011). Global connectivity is challenging many established old journalistic traditions. Interesting analyses are provided in "Global Journalism Research: Theories, Methods, Findings, Future" by Löffelholz, Weaver and Schwarz (2008). A new book of Brevini, Hintz and McCurdy (2013) is "Beyond WikiLeaks: Implications for the Future of Communications, Journalism and Society", which is providing a very interesting analysis of new media environment and new emerging rules of media publicity. A widely known organization, WikiLeaks is an international non-profit organisation, which publishes news leaks, secret information, and classified media from anonymous sources.

Common digital network, broadband demand and wireless ubiquity are forming the "anywhere ubiquity" (Green, 2010, p. 6). Pine II and Korn (2011) have presented a very interesting vision for an experience economy. The concepts of time and no-time, space and no-space and material reality and non-material reality are determining the future of the experience economy, where journalism plays a key part. Pine II and Korn discuss an infinite possibility frontier, which is based on digital technology and digital evolution. As a source of information and knowledge, reality is coupled with another source: that of virtual reality.

There are many challenges for content creation in media, communication and

journalism. For example, digital evolution and new technological innovations are constantly posing new challenges for those concerned with the education of media professionals. The roles of journalists and communications workers are often marginalized in industries increasingly dominated and led by a business-engineering culture. Journalists who are parts of the creative-content culture find contrast on their way to leadership in media and experience industries. There are many needs to analyse these on-going changes from futures perspectives. Some professionals are worried about the content of media, as they see that the cliché "content is king" is no longer a valid statement in many media houses. Journalists are seeking new roles because most traditional media companies are now led by business executives or marketing professionals (Editoral, 2013, Anderson & Ward, 2007). This article provides new insights to these actual challenges and needs to educate a new generation of journalists. This article is also relevant for media houses, because journalists are a key human resource for them.

The topic of journalism in the field of futures studies has sometimes gained more research attention. Tom Cooper (1994) presented an important contribution to this topic in the journal Futures. He emphasized social responsibility and visionary journalism as key challenges of the field. He noted that the role of journalism is not in publishing always good news but in playing a socially responsible role in society. He underlined the critical role of media ethics. It is not easy to say which futures studies are the most relevant for the futures of journalism.

The Gutenberg Galaxy, a very futuristic study by Marshall McLuhan (1962), included many interesting visions of communication and mass media. This book popularized the term 'global village,' which refers to the idea that mass communication allows a village-like mindset to apply to the entire world. McLuhan´s famous axiom "the medium is the message" argues that technologies are not simply inventions which people employ but means by which people are re-invented. In the field of futures research, Daniel Bell´s classical study envisioned the coming of a post-industrial society with service economy (Bell, 1974). Since Bell the most influential contributions have been provided by Manuell Castells in "The Rise of the Network Society" (2000), by Max Boisot in "Information Space: A Framework for Learning in Organizations, Institutions and Culture" (1995) and "Knowledge Assets. Securing Competitive Advantage in the Information Economy" (1998) as well as by Richard W. McChesney, Russell Newman and Ben Scott in "Future of Media. Resistance and Reform in the 21st Century" (2011). The concept of 'experience economy' was first introduced by Joseph B. Pine II & James H. Gilmore in "The Experience Economy: Work Is Theatre & Every Business a Stage" (2011, originally published in 1999). A good analysis about journalists' new entrepreneurial roles was presented by Lewis DVorkin and Forbes (2012) in "The Forbes Model For Journalism In The Digital Age: Training A New Generation Of Entrepreneurial Journalists."

Mark Weiser (1991) was the first to envision a ubiquitous technology revolution. Later many others have analysed the impacts of ubiquitous technologies. Such interesting analyses have been provided by Richard Hunter "World without Secrets. Business, Crime, and Privacy in the Age of Ubiquitous Computing" (2002), by Adam Greenfield in "Everyware: The Dawning Age of Ubiquitous Computing" (2006), by Natalie Fenton in "New Media, Old News. Journalism & Media in Digital Age" (2010) and Emily Nagle Green in "Anywhere. How Global Connectivity Is

Revolutionizing the Way We Do Business" (2010). The risk analysis of digitalized ubiquitous society was provided by Robert W. McChesney in this book "Digital Disconnect: How Capitalism is Turning the Internet against Democracy" (2013).

The future of the Internet has been the focus of many studies. Some of the most interesting have been the book "A Semantic Web Primer" (2008) by Antoniou Grigoris and Frank van Harmelen and the article "Web 4.0: The Era of Online Customer Engagement" (2012) by Lief Larson.

Ajaz and Olander envisioned various impacts of digitalization in their book "Velocity" (2012). They underline the importance of four velocity principles: Speed, Direction, Acceleration, and Discipline. According to their analysis, digital evolution will change the way companies and corporations do business. In the future companies must be fast companies. A good summary of the development of information age was presented by James Gleick in "The Information: A History, a Theory, a Flood" (2012). Another good summary and excellent futures study focused on media is the report "2020 Media Futures. What Will Our Media and Entertainment be" by Greg van Alstyne.

Bob Franklin (2011) has edited an important book titled "Futures of Journalism." It analyses key uncertainties of journalism. The key message of the opus is that the futures of journalism are hotly contested and highly uncertain, reflecting developments in media technologies (digitalisation, ubiquitous technologies, e-commerce etc.), shifting business strategies for online news, changing media organisational and regulatory structures (changing roles of public and private media services etc.), the continuing fragmentation of audiences and a growing public concern about some aspects of tabloid journalism practices and reporting (thin content etc.), as well as broader political, sociological and cultural changes which make many communication issues sensitive.

Peter J. Anderson and Geoff Ward have edited futures analyses of journalism in "The Future of Journalism in the Advanced Democracies" (2007). They present compelling evidence that news journalism is losing ground to infotainment. In addition, they argue that the relation between journalism and democracy is changing to a more complex direction.

Concerning the future of mass media, an interesting book has been Nuno Bernando's "The Producers Guide to Transmedia: How to Develop, Fund, Produce and Distribute Compelling Stories across Multiple Platforms" (2011). The concept of produsage has been discussed broadly by Axel Bruns (2006) in his conference article and the concept of mass collaboration has been discussed by Don Tapscott and Anthony D. Williams in "Macrowikinomics" (2010).

All these contributions have been relevant for the futures research regarding media and journalism. In this paper all the details of these studies are not discussed. The scenario analysis of this article is focused on some key issues of journalism which will be presented in the following sections.

If we want to summarize these studies we can list some relevant issues for the futures of journalism:

This article includes four scenario analyses with different theoretical approaches. All of them are linked to journalistic work practices. The first one focuses on the professional career of journalists. The second concentrates on the creation and management of knowledge, a central issue for the work practice of journalists. The profession of journalism in modern media houses is linked to new ideas, inventions

and innovations. The production of content and its quality depend on innovative thinking of journalists.

Third scenario analysis of this article is focused on the critical issues of innovation management: open and closed innovation paradigms. Finally, the fourth scenario is linked to technology and personalization, which are elementary parts of journalistic practices and journalism. Knowledge Retrieval Matrix is a key theoretical framework in this scenario analysis.

Scenarios A (education and career of journalists) and D (technology and personalization) are closely linked to journalists and their work. Scenarios B (work environment) and C (innovation process) are linked to journalists' general work environment. These scenarios are complementary analyses of journalism and journalists.

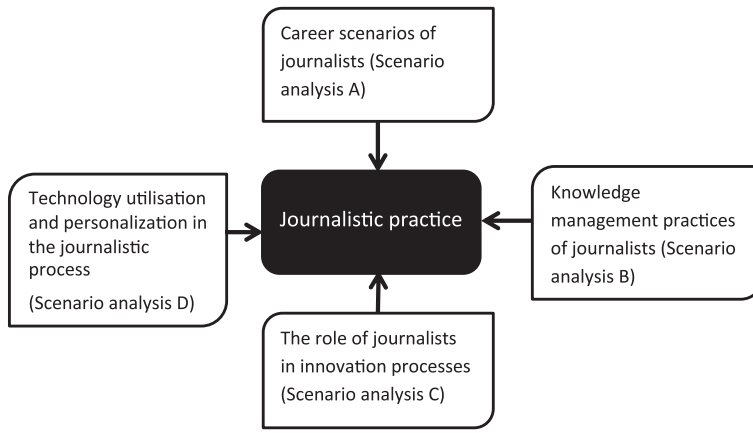

Figure 1. Scenarios and their linkages to journalistic practice.

Business models of media houses

It is worth noting that journalists are still in the core of knowledge management in post-industrial societies. Today journalists are not only content providers. This business model of media houses (content provider) is still important but other important business models have been introduced. Streamlining with the Internet has changed many conventional work practices (Boyer, 2001). This article provides new theoretical insights to these changing work practices. New emerging business models increase the need to understand changing work practices in journalism. Scenario analyses presented in this article can help in this process. This basic business model of media houses concerns the provision of static and dynamic content including news and product information. This content is coming from a single organization and can be customized to match customers' needs.

Nowadays there are various other business models where journalists are involved. Direct-to-customer business model entails direct service provisions to customers and businesses. Such a model includes tailor-made pages and subscription options. This model also includes transaction functions. Typical functions are service catalogue, self-service, shopping cart, appointment, tracking and tracing, and financial settlements. (Janssen, Kuk & Wagenaar 2008, p. 209).

A third important business model is the value-net-integrators model. This model coordinates the collection, processing and distribution of information from several organizations. This kind of networked business model is typically tailored to a particular customer segment. Various organizations collaborate in a network to provide a one-stop shop business model. Typically all providers keep their own identity and service requests, which are routed to the responsible organizations. (Janssen, Kuk & Wagenaar 2008, p. 209).

A fourth model in the Internet environment is full-service provider. This business model facilitates customer interaction through direct information and service provisioning. This model involves the collaboration among a number of organizations to provide a one-stop shop. This business model is more comprehensive than the value-net-integrator model. Many media houses like this business model, because it provides a broader business potential for them. The key functions of this business model are similar with the value-net integrators model. Separate organizations providing services are not directly visible and they are often hidden (Janssen, Kuk & Wagenaar 2008, p. 209-210).

A fifth business model relevant for media houses is infrastructure service provider. This model provides infrastructure services to support the creation of Web sites. The model includes economics of scale for various organizations. It is based on concentrating and sharing of services in an organization and on providing these services to many public or private organizations. Typical functions of this model are authentication, identification, payment, secure communications and other transaction support services. Sub-models of this business model are: infrastructures for market exchange, for collaboration and for virtual communities (Janssen, Kuk & Wagenaar, 2008, p. 209-210).

In Table 1, variations of business models are presented. The variations depend on a specific relation between customers (C), businesses (B) and networks (N). The role of journalists has become more demanding because the complexity of business models has increased. The role of customers has strengthened because of developments regarding the Internet and social media. Many experts now talk about skills brokerage business model, which may especially help business start-ups in the networked economy (Papagiannidis & Li, 2005).

Table 1. *Business models relevant for media houses*

	B-to-C	**B-to-B**	**B-to-N**	**C-to-B**	**C-to-C**	**C-to-N**
Content-provider	Content provider for Business-to-Consumer interactions	Content provider for Business-to-Business interactions	Content provider for Business-to-Network interactions	Content provider for Consumer-to-Business interactions	Content provider for Consumer-to-Consumer interactions	Content provider for Consumer-to-Network interactions
Direct-to-customer	Direct-to-customer services for Business-to-Consumer interactions	Direct-to-customer services for Business-to-Business interactions	Direct-to-customer services for Business-to-Network interactions	Direct-to-customer services for Consumer-to-Business interactions	Direct-to-customer services for Consumer-to-Consumer interactions	Direct-to-customer services for Consumer-to-Network interactions
Value-net integrators	Value net integration services for Business-to-Consumer interactions	Value net integration services for Business-to-Business interactions	Value net integration services for Business-to-Network interactions	Value net integration services for Consumer-to-Business interactions	Value net integration services for Consumer-to-Consumer interactions	Value net integration services for Consumer-to-Network interactions
Full-service provider	Full-service provider for Business-to-Consumer interactions	Full-service provider for Business-to-Business interactions	Full-service provider for Business-to-Network interactions	Full-service provider for Consumer-to-Business interactions	Full-service provider for Consumer-to-Consumer interactions	Full-service provider for Consumer-to-Network interactions
Infrastructure service provider	Infrastructure services for Business-to-Consumer interactions	Infrastructure services for Business-to-Business interactions	Infrastructure services for Business-to-Network interactions	Infrastructure services for Consumer-to-Business interactions	Infrastructure services for Consumer-to-Consumer interactions	Infrastructure services for Consumer-to-Network interactions

These business model variations are relevant for media houses, but there is also another new issue in the field of journalism: the emergence of citizen journalism, which is not motivated only by business and marketing interests.

The concept of citizen journalism, also known as ”democratic”, ”public”, ”participatory”, ”guerrilla” or ”street” journalism is based upon public citizens playing an active social role in the journalistic process of collecting, reporting, analyzing, and disseminating news and information. Citizen journalism is close to the concept of citizen-sourcing, which aims to create new information, support service coproduction, create new solutions and support policy making processes (Rosen, 2008, Deutsch & Radsch, 2012, Nam, 2012). Developing strong democracy may need more media content which is produced by citizen journalists (Barbier, 2004, Carter, 2005). In addition to the increasing prevalence of cellular telephones, new media technology, e.g. social networking and media-sharing websites, have made citizen journalism more accessible to people worldwide. From the technological development perspective, citizen journalism is an interesting issue and a growing trend. Citizen journalism can also provide some solutions to the classical dilemma between citizens' right and ability to participate. Recent scientific studies show that the Internet is a viable tool that has reduced resource differences (physical capital, financial capital, information and knowledge capital) between experts and citizens in general. Social and organizational capital resource differentiation is less obvious and less extensive because of the Internet (Yang & Lan, 2010, Super Ordinary Lab & Changeist, 2010). If citizenship journalism can reduce the

resource differences between the public and experts, it will promote citizens' ability to participate in public policy making. Obviously this helps to make democracies stronger.

Internet and social media provide new possibilities for citizens to raise important issues to the political agenda. For e-Government, this issue will be important challenge because people can express their views in the Web without the gatekeeping of media houses. Of course, this issue is also linked to the relations between business, media and citizens. Issues such as equal opportunity, consumerism and environmentalism have brought business in the front pages of media and newspapers (Evans, 1984), but now this is also happening in the Internet. Obviously we can see more conflicts over roles and new tensions inside and outside media houses, because citizen journalism is another Wild Card for conventional media houses.

Because of these fundamental changes, the professional requirements of journalism are facing complex tensions. Especially the transition from knowledge society to ubiquitous society includes many radical changes (see Nerone & Barnhurst, 2003, Westerlund & Kaivo-oja, 2012). This article identifies some key sources of critical tensions modern experts of journalism are facing now and in the future.

Media houses and media companies are today developing lean production structures and intelligent organizations. Knowledge management is a strategic question for contemporary media companies. A problem of knowledge dissemination, knowledge diffusion and sharing of knowledge is highly topical in the media business. Because of hyper competition, media companies must become more effective users and producers of knowledge (Tuomi, 1999, p. 16-20). However, this requires deeper understanding of key drivers of the profession and new driving forces of the media companies. This is a key issue in this article.

The sources of critical tensions are: (1) heavier demands for professional expert knowledge and higher demands for competences to use journalistically relevant research methods, (2) the changing dynamics of the Information Space, (3) the emergence of open innovation paradigm to challenge closed innovation paradigm and (4) the need to use different codification strategies in a more conscious way.

The analyses of the Information Space dynamics are based on Max Boisot's theoretical model of structuring knowledge and sharing knowledge (Boisot & Cox, 1999, Boisot & MacMillan, 2004). Structuring knowledge is a key issue in journalism. In Section 4, this article also discusses the role of the open innovation paradigm as regards to the journalism. The emergence of the open innovation paradigm changes economies and the ecosystems of industries. In this sense, open innovation also challenges the whole journalism profession and innovation journalists.

Sharing knowledge is a domain where knowledge can be undiffused or diffused. According to Boisot's knowledge classification, knowledge is experiential when it is uncodified and undiffused. Knowledge is narrative when it is more codified and more diffused. Abstract symbolic knowledge is highly codified and highly diffused. This theoretical framework helps stakeholders to understand some key tensions in journalism, especially the challenges of innovation journalism. The concept of Social Learning Cycle (SLC) is a particularly useful tool in analyzing new challenges of innovation journalism. The SLC model introduces key methodologies of innovation journalism, which are (1) problem-solving, (2) codification, (3) diffusion, (4)

absorption, (5) scanning and (6) impacting. In this sense, Boisot defines the work methodology of innovation journalism from theoretical standpoints.

Scenario analysis 1: Professional expert knowledge and competences to use journalistically relevant research methods

First scenario analysis is focused on the research tools and methods of journalism as well as on the content substance. Scenario analysis 1 indicates that there are many constraints for innovation journalism, which typically require high substance competences of journalism, but also methodological competences in the fields of innovation and foresight research methodology.

In the first scenario analysis, vertical dimension of analysis is (1) the level of professional expert knowledge and (2) competence level to use journalistically relevant research methods. This scenario framework provides an interesting approach to think about the ideal form of innovation journalism. We can understand that every journalist must start from scenario C, where a journalist is a junior trainee. At this stage of professional development, s/he must decide how to develop herself/himself in the profession. Alternative scenario paths are: (1) A: An expert journalist is some issues, (2) B: Ideal professional in innovation journalism and (3) D: A journalist as a researcher and investigator. All these choices are possible for a junior journalist. Because journalists emphasize professional autonomy, all these career paths are possible, and each journalist thinks he/she must have autonomy to perform the journalism profession in an independent way. Furthermore, journalism education includes many orientation possibilities. On the basis of this scenario analysis, we can identify three different innovation journalism career paths: (1) Scenario path CAB, (2) scenario path CB and (3) scenario path CDB. In the CAB path, journalist starts his/her career specializing on some issues and, after that experience, studies research/investigating methods serving good journalism. In the CB path, junior journalist gets demanding training and education in some special issues and adopts a package of research and investigating tools in his/her professional career. In scenario path CDB, junior journalist studies research methods fitting to journalism first and then selects special issues where these research methods are applied. We can conclude that there are different ways to reach the ideal form of innovation journalism (point B in Fig. 2).

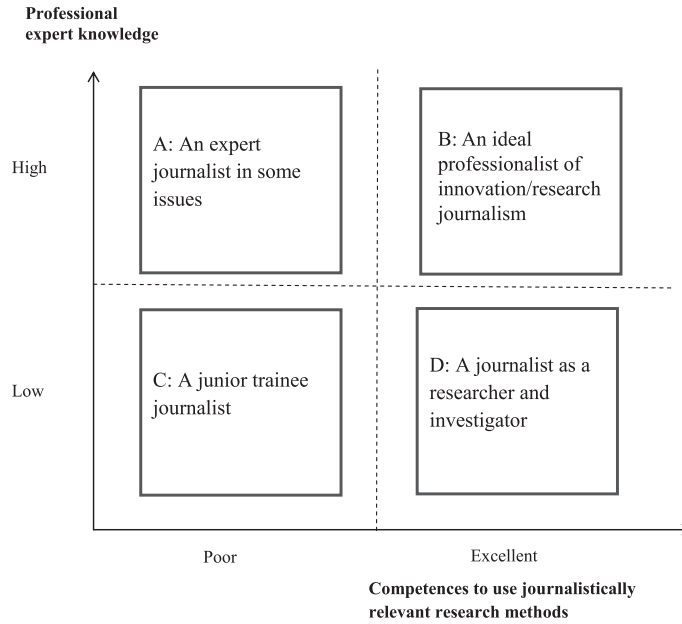

Figure 2. Professional expert knowledge (substance knowledge) and competence level to use journalistically relevant research methods

Figure 2 describes potential futures of the journalism profession. It is self-evident that all these futures are realized in various contexts of media. We can also note that the concepts of expert journalist and investigating journalist are close concepts to the concept of innovation journalist.

Scenario analysis 2: Boisot's Information Space analyses

In the second scenario analysis, the driving role of digital ICT technology and learning processes of journalists are analyzed in relation to the modern journalism profession. In this scenario analysis section, the author uses Max Boisot's Information Space theory as a theoretical framework (Boisot 1995, Boisot & Cox 1999).

In Figure 3, the very basic framework of the SLC Model is presented. The trend of digitalization implies that the amount of codified knowledge is going to increase dramatically. Journalists typically start their work from uncodified and undiffused knowledge. They can, of course, also use highly codified and diffused knowledge. The key function of media is to produce news and other journalistically relevant material from point C and transform this knowledge to point A, to point D or to point B. On the basis of Fig. 3, we can conclude that the key functions of journalism are codification and diffusion of knowledge. It is quite obvious that innovation journalism would lead to higher levels of codified and diffused knowledge in any society.

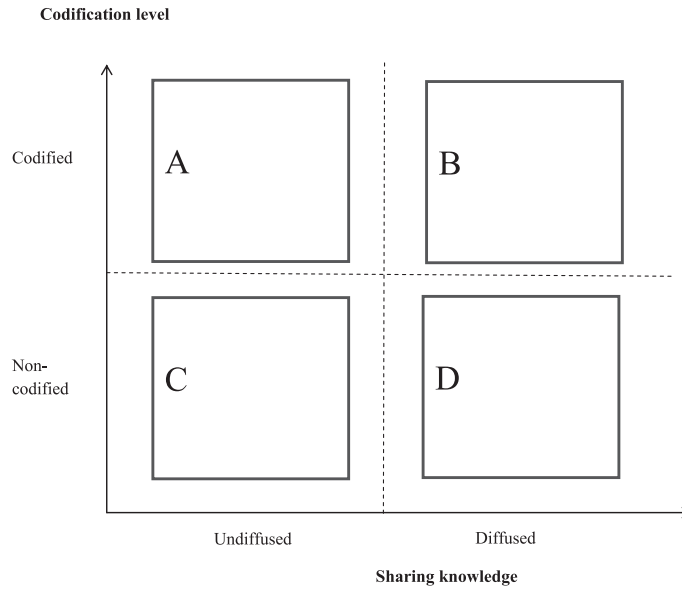

Figure 3. Codification and diffusion levels of knowledge (sharing knowledge): Key functions of innovation journalism: better knowledge codification and promotion of diffusion process

Codification measures the speed and ease with which a phenomenon or object of experience can be unambiguously assigned to given perceptual or conceptual categories. The act of assignment itself is typically called "coding." Diffusion measures the percentage of a given population of data processing agents, individuals, groups, companies, etc. for whom an item of information has relevance and who can gain access to an information event in a given time period. Abstraction measures the number of perceptual and conceptual categories required to capture a phenomenon. Science and scientific research activities are focused on abstraction activities.

Recent advantages in the design of computer architectures and the exponential growth of computer networks have led to new innovative ways to representing, creating, manipulating and distributing knowledge. As a result of this process, the distinction between human and machine processing has become less clear as human activity is an integral part of networked computing instead of merely an input-output mechanism at its extremes. This progress has many implications for the representation of learning, the management of computational complexity, knowledge flows of journalism and intellectual property rights. Knowledge assets and their management currently constitute a major source of competitive advantage for industries and firms but also a major problem. Modern innovation journalism works in this kind of societal context. In Figure 4, different types of knowledge are presented. Innovation journalism must manage all these four types of knowledge (proprietary knowledge, public knowledge, personal knowledge and common sense), to function well. It is self-evident that media produces public knowledge, but also it produces also proprietary knowledge, personal knowledge and common sense.

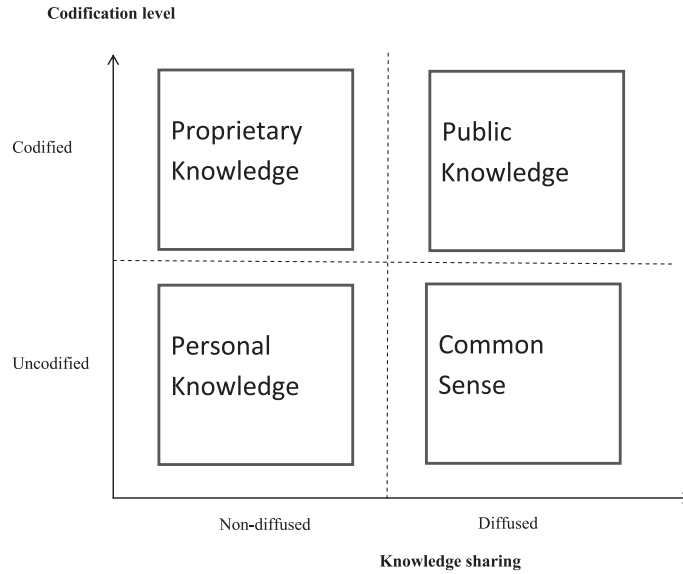

Figure 4. Different types of knowledge (Proprietary knowledge, public knowledge, personal knowledge and common sense) in the Social Learning Cycle (SLC) Model

In Figure 4, the Social Learning Cycle (SLC) model is presented in codification and diffusion levels. In societies, the SLC is a purposive activity. It requires resources and management of knowledge assets. From the perspective of innovation journalism, Figure 4 is interesting and challenging.

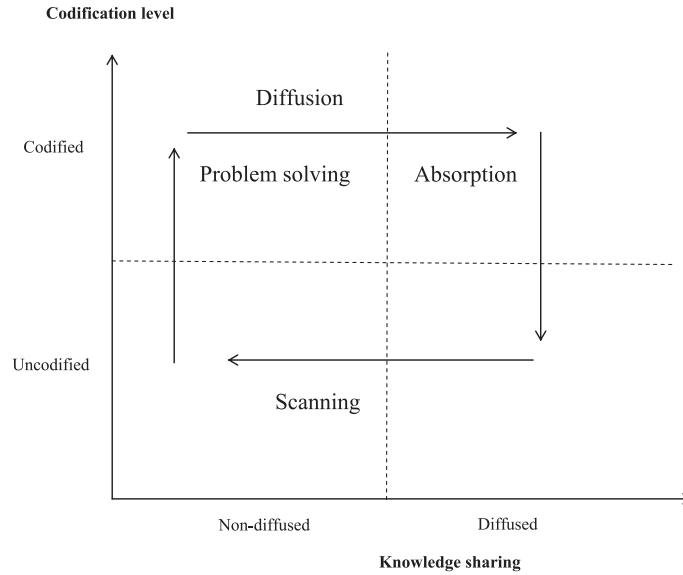

Figure 5. The social learning cycle (SLC) and key knowledge management activities of innovation journalism: Scanning, diffusion, absorption and problem-solving

In Figure 6, the abstraction process is visualised.

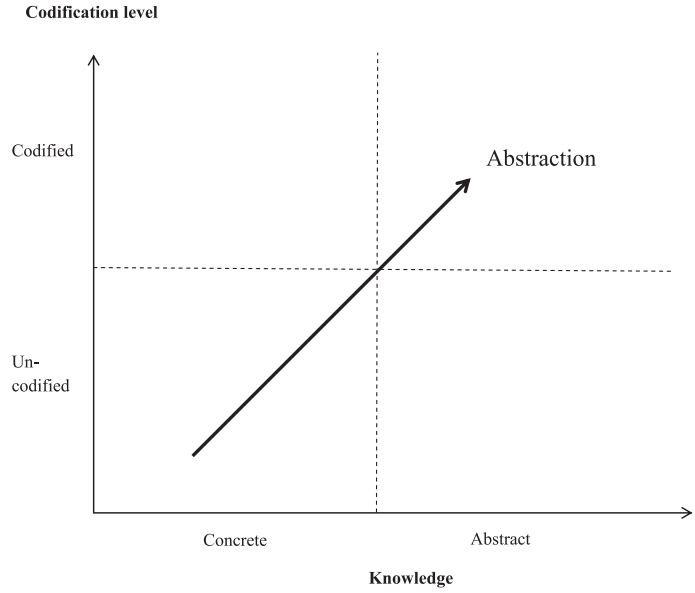

Figure 6. The social learning cycle (SLC) and abstraction process

In Figure 7, the process of impacting is described.

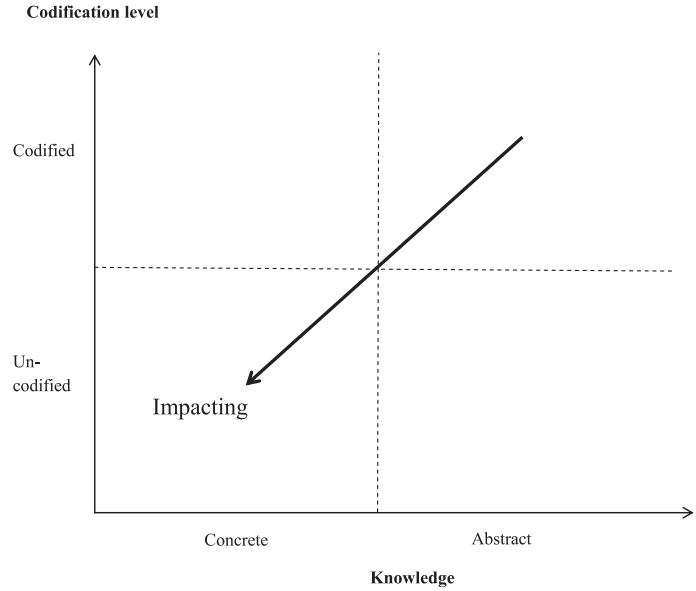

Figure 7. The social learning cycle (SLC) and impacting process

There are six different steps in SLC: (1) Scanning, (2) codification, (3) abstraction, (4) diffusion, (5) absorption and (6) impacting. All these steps are

needed in the SLC process. If innovation journalism wants to promote the Social Learning Cycle, it must promote these six steps in a society (Higgs, 2002):

Key Action 1: A scanning process typically identifies threats and opportunities. Signals are often fuzzy. That is why detection is slow and uncertain. Data is often public, but interpretations are not. They are often unique. One problem for innovation journalism is that group pressure can distort the scanning process.

Key Action 2: Codification is a response to what is scanned. Codification gives structure and coherence to the response. Codification is an important action, because it reduces uncertainty and ambiguity.

Key Action 3: Abstraction is a move from the specific and concrete to the general and abstract. It reduces the number of concepts and categories that one has to deal with. Abstraction also includes saving of data and data processing by agents. Abstraction has a hypothetical character, which seeks out the structure that underlies appearances.

Key Action 4: Diffusion is an important process, because codified data diffuses rapidly unless controlled. It will only register with those who know the codes. The data is de-contextualized when it is codified and abstract. It is also important to understand that diffusing data reduces its scarcity value.

Key Action 5: Absorption means that newly diffused data is applied in learning by doing "fashion". An uncodified stock of practical experience builds up around the codified data. Typically the codified data may or may not match the "common sense" of the knowledge user.

Key Action 6: Impacting is a move from the general and abstract to the specific and concrete. Impacting contextualizes knowledge and this knowledge management action is very important for innovation journalism. Impacting is a problematic action because it increases the number of concepts and categories one has to deal with. Impacting also tests abstract hypotheses.

All these scenario analyses indicate the strategic importance of codified knowledge, which can be developed by digital technology. This scenario analysis highlights a finding that management of digital libraries is one key challenge for successful innovation journalism and dynamic innovation media.

Finally, in Figure 8, key stakeholders relevant for innovation journalism are presented.

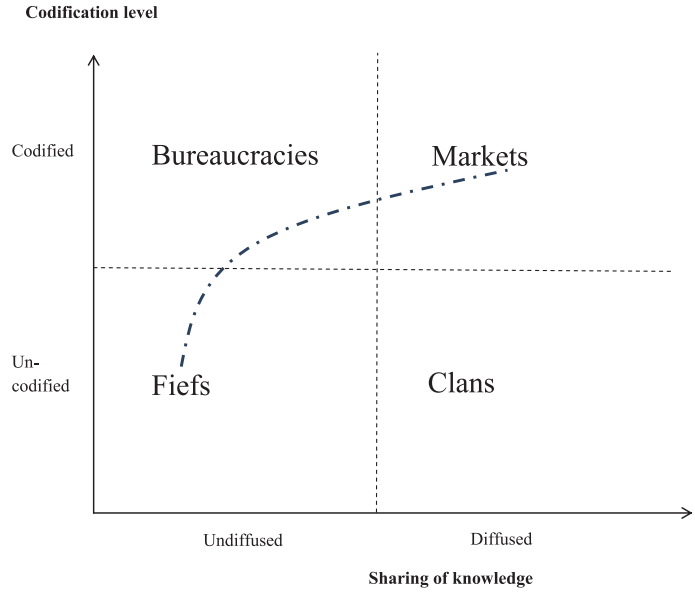

Figure 8. Cultural aspects of learning and key stakeholders of innovation journalism

Figure 8 connects knowledge management actions to some key stakeholders of society. One important aspect is that the utility of knowledge assets is a function of their degree of codification. The more an item of knowledge can be formalized, standardized, or simplified, the more easily and reliably it can be manipulated and subsequently combined with other items of knowledge. From this perspective, codification activities associated with innovation journalism are strategically important. This visualization is useful for media because it indicates that audiences of innovation media can be segmented to these basic groups.

Scenario analysis 3: Closed vs. open innovation paradigm frameworks

In Scenario analysis 3, the driving role of two innovation paradigms are analysed in relation to the modern journalism profession. These alternative paradigms are (1) closed innovation process paradigm and (2) open innovation process paradigm. (Chesbrough, 2003a, Chesbrough, 2003b, Chesbrough, Vanhaverbeke & West, 2005).

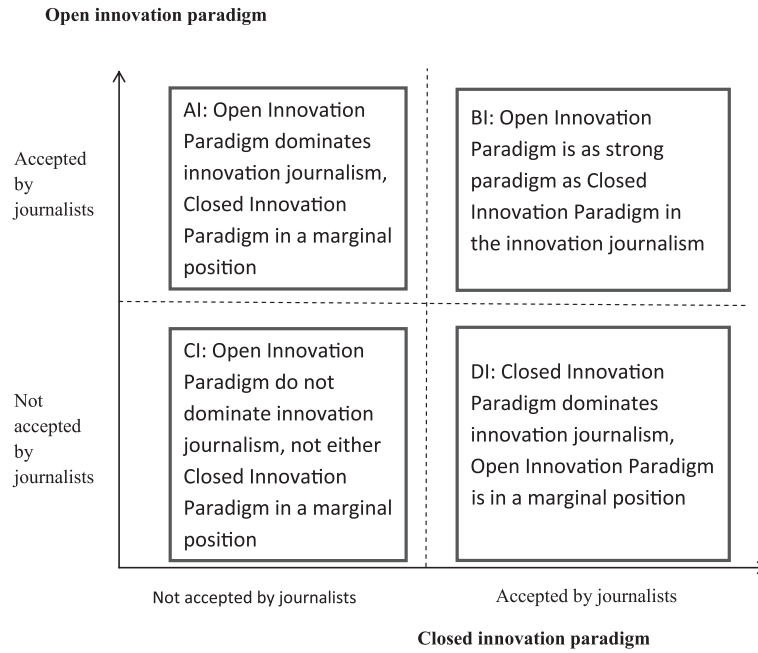

Figure 9. Open innovation paradigm and closed innovation paradigm as challenges of innovation journalism

On the basis of the scenario analysis, four different scenarios where open innovation and closed innovation paradigms play different roles can be identified. In scenario AI, the open innovation paradigm dominates the logic of media instead of the closed innovation paradigm. In scenario BI, both the open and the closed innovation paradigm are strong. In scenario CI, neither paradigm dominates the logic of media. In scenario DI, the closed innovation paradigm is strong in the media world and the open innovation paradigm is in a marginal position. We can conclude that the orientation of journalism profession in relation to the open and closed innovation paradigms determines the logic of the profession.

Again, new interesting aspects are found for the development of modern innovation journalism. This section provides new theoretical perspective on how to analyze the role of public attention in innovation ecosystems, its stakeholders, and the interaction between them. This section provides also fresh perspective on how journalism and innovation interact in a global context where economies are becoming more and more driven by open innovation paradigm and thinking.

Scenario analysis 4: Knowledge Retrieval Matrix scenarios

Journalists and individual knowledge workers retrieve, identify, and decode knowledge accessed from organizational memory. Gammelgaard and Ritter (2005) have proposed that codification and personalization strategies are very important issues to be planned in knowledge management. Journalists use different information sources and different codification and personalization strategies. Knowledge and its management have moved up the corporate agenda due to the idea that knowledge is a source of competitive advantage. For media companies, this aspect is a naturally

important aspect of competitiveness. In media, the transfer of knowledge is not an easy process. Barriers to knowledge transfer can be roughly categorized into three categories: (1) fragmentation, (2) overload and (3) de-contextualization. Knowledge is dispersed throughout the organization.

Typically, many pieces of knowledge are "unknown" to individual employees and individual journalists. Knowledge is often inaccessible to relevant knowledge workers and journalists, which causes inefficiencies to the media houses. In addition, knowledge is often geographically dispersed and localized in various sub-units of media houses and its networks. Knowledge acquired at one site can be beneficial to others. A typical strategy to this fragmentation problem is "total openness in internal communication." This strategy easily creates another problem: information overload. In practice, information overload makes it impossible for individual knowledge workers to handle knowledge transfers. Overloaded knowledge platforms lead to a low usage rate and "information junkyards." This is also a serious challenge for innovation media and innovation journalism (see e.g. Gammelgaard and Ritter, 2005).

De-contextualization relates to all situations where knowledge is located but cannot be retrieved due to problems in understanding the matter. The gap between the sender and the receiver of the information may be cultural, technical, or organizational distance. (Gammelgaard and Ritter, 2005).

The Retrieval Matrix describes the retrieval process which takes place in an interface between social interaction and technology. This critical division reflects the fact that organizations and media houses typically operate with two different knowledge strategies; a codification strategy, where knowledge is codified and stored in databases, and a personalization strategy, where personal interaction is essential and information technology is only a tool for communication between people. (Gammelgaard and Ritter, 2005).

In this section, scenario based analysis is presented about this topic. In the fourth scenario analysis (Scenario analysis 4), Knowledge Retrieval Matrix developed by Gammelgaard and Ritter (2004) is presented. The critical driving forces of this new theoretical knowledge management model are: (1) organizational codification strategy and (2) personification strategy as knowledge management strategies of innovation journalism.

Figure 10 presents the Knowledge Retrieval Matrix. It describes the key sources of knowledge, which are databases, individual memory, social capital, and virtual communities of practice. Gammelgaard and Ritter (2005) have noted that especially the development of virtual communities of practice helps to solve fragmentation, overload, and retrieval problems. They have noted that combined use of weak and strong tie-binding practices through the establishment of virtual communities of practice could solve many knowledge transfer problems. This aspect is a very important viewpoint to innovation journalism. Earlier research on knowledge management has often viewed personalization and codification strategies as separate knowledge management instruments. A wise approach is to combine these two strategies.

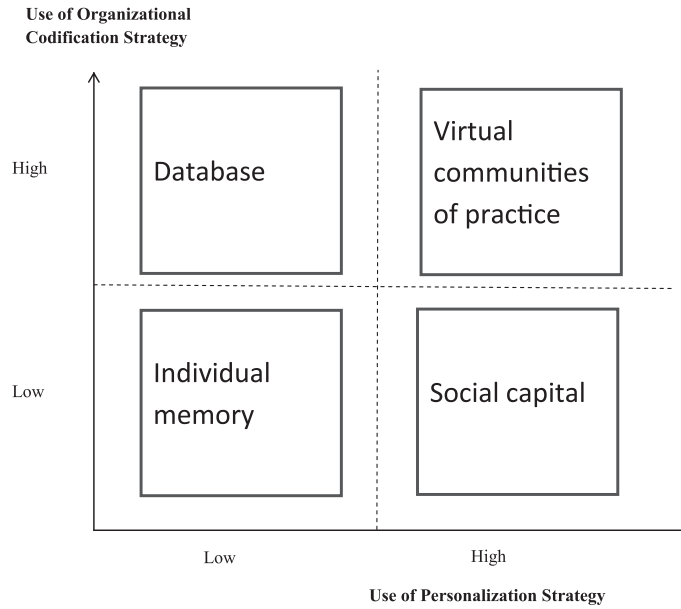

Figure 10. Organizational and personal codification strategies: Knowledge Retrieval Matrix and information sources of innovation journalism

The Knowledge Retrieval Matrix is closely related to the use of weak and strong ties between individuals. (Rindfleisch & Moorman, 2001). Weak ties cover distant, infrequent relationships between individuals. Weak ties between units are helpful in searching or scanning for information. Strong ties refer to close, frequent, long lasting, personalized relationships, which in turn reflect the personalization approach. Strong ties are needed to transfer complex knowledge. Complex knowledge is hard to encode and decode through communication technologies (Granovetter, 1972, Huber, 1991, Hansen, 1999).

In this scenario analysis, the role of (1) databases, (2) individual memory, (3) social capital and (4) virtual communities of practice are analyzed from the perspective of innovation journalism. All these sources are most likely relevant sources for professional journalists, but virtual communities of practise are a systemically new and emerging source of knowledge for journalists. Actually, this change means that social media will be the ubi(quitous) media in the future.

In this section, it is possible to point out that – through the establishment of virtual communities of practice – the codification and personalization strategies can be combined, which is a fundamental advantage for knowledge management among innovation journalism professionals.

Summary

All the provided scenario analyses are critical and provide new innovative thinking tools for more effective strategies for modern innovation journalism and innovation media. All the key analyses are performed in the form of problem-oriented scenario analyses. Analytical scenarios relevant for innovation journalism and journalism profession are based on: (1) new information and knowledge

management theories, (2) systemic innovation theory, and (3) the most critical driving forces of media, media content, and media technology.

When we analyze the futures of innovation journalism, we can present some conclusions concerning key tensions of the journalism profession and innovation journalism:

(1) Professional expert knowledge (substance knowledge) and competence level to use journalistically relevant research methods, determine the logic of journalism profession. Emphasis on expertise or emphasis on research competence results in different kind of journalistic traditions. The journalistic organisational culture matters.

(2) Journalism profession and innovation journalism are facing the key tasks of Social Learning Cycle (SLC) model (scanning, codification, abstraction, diffusion, absorption, and impacting). How well does journalism perform these tasks will determine how well social learning cycles are performed in societies. Codification, diffusion, and impacting are very important tasks for innovation journalism, but also for professional journalists in general.

(3) Orientation of journalism profession in relation to open and closed innovation paradigms determines the future innovation management logic of the profession. Both innovation journalists and innovation media can produce their own innovation dynamics by supporting either the open or the closed innovation paradigm. This study reports four alternative innovation management models of journalists. Awareness of these alternative innovation management models is important.

(4) Codification and personalization strategies determine the key sources of journalism profession and innovation journalism. Alternative sources of journalism, according to the Knowledge Retrieval Matrix Theory, are (1) databases, (2) individual memory, (3) social capital, and (4) virtual communities of practice. All these sources are most likely to be relevant sources for professional journalists, but virtual communities of practise are a systemically new and emerging source of knowledge for journalists. Actually, this change means that social media will be the ubi media in the future.

(5) According to the Knowledge Retrieval Matrix Theory, barriers to knowledge transfer can be roughly categorized into three categories: (1) fragmentation, (2) overload, and (3) de-contextualization. The way these key knowledge transfer problems are solved partly determines the future of journalism profession and innovative media operations in media houses.

(6) In the establishment of virtual communities of practice, the codification and personalization strategies can be combined, which forms a fundamental advantage for knowledge management among innovation journalism professionals. This aspect of combination of personalization and codification strategies is a critical driving force for the future of innovation journalism and progressive journalistical practices.

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