
Business Model Innovation in the Digital and New Media Economy

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Abstract: This paper¹ outlines the increasing challenges of Business Model Innovation in the Digital and New Media Economy. It describes drivers of change, impacts on the innovation and business landscape, consequences for business modeling and the innovation process, as well as the implications for organizational adaptation. It presents in-depth observations from empirical research on 12 business cases in the Digital and Media Economy in Germany.²

Our findings show that business modeling in the Digital Economy needs to be continuously cross-linked to the innovation process to adapt to the ever changing business environment. It becomes clear that Business Models in the Digital Economy need to be “open” so as to be able to continuously embed them into the firm’s surrounding communities, and to ensure knowledge transfer and learning. We will align our arguments with earlier research on Open Innovation [7, 9, 10, 11] and Innovation 3.0 - which we have earlier called “Embedded Innovation” [8] - taking a more practical view on the implementation of new Business Models.

Keywords: Business Model Innovation, Innovation 3.0, Open Innovation, Ambidextrous Organization, Organizational Adaptation, Communities of Knowledge, Digital Economy, New Media Economy


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1 Introduction

The so-called ‘Digital & New Media Economy’ embraces all actors in digital value creation and publishing processes, such as multi-media agencies, e-commerce agents, interactive online marketing and mobile solutions providers, games developers, social media providers, new media publishers etc. Business modeling in this ‘melting pot’ is influenced by a multitude of drivers, including new enabling technologies, the rapidly changing demands and life-styles of ‘digital natives’, the convergence of markets and media etc.

Figure 1 Technology-/Media Convergence in the Digital Economy

| | Games | IPTV | Mobile | Web X.0 | eLearning | eCommerce |
|-----------|-------|-------------------------|--------------------------|--|------------------------|----------------------------|
| Games | | Lifelike animated games | Multiplayer Mobile Games | User-generated games | Serious Gaming | In-Game Advertising |
| IPTV | | | Mobile live blogging | Personal Shopping | Business TV | In-Video Advertising |
| Mobile | | | | Smart Objects Content | Context-aware Learning | Geo-tagged shopping |
| Web X.0 | | | | | Web 2.0 based learning | Social Shopping |
| eLearning | | | |  | | Nine Sigma experts systems |

The innovation landscape is characterized as being extremely “open and dynamic”. Ideation, design, development and implementation of innovations are embedded in a cross-meshed network of especially SMEs (“multi-agent systems”) that are in continuous dialogue with their surrounding communities [8]. The critical success factor in these ‘multi-agent systems’ is to develop sufficient “*gravitational embedding force*” to link them to ‘Communities of Knowledge’. Amongst these communities are

- Communities of Affinity (CoA): continuous dialogue with prosumers and end-consumers (B2C) to catch up with new (design) ideas, demands, moods, fashions and business opportunities;
- Communities of Practice (CoP): collaboration with each other (B2B), and with micro firms or freelancers to flexibly enhance knowledge flows, primarily for design and co-development;
- Communities of Interest (CoI): experience exchange with innovating firms from the same and other sectors to benefit from crossover ideas and complementary knowledge,
- Communities of Science (CoS): dialogue with the scientists to absorb new technologies.

The learning cycles in innovation and business modeling with respect to the different communities in the Digital & New Media Economy are depicted in Fig. 2:

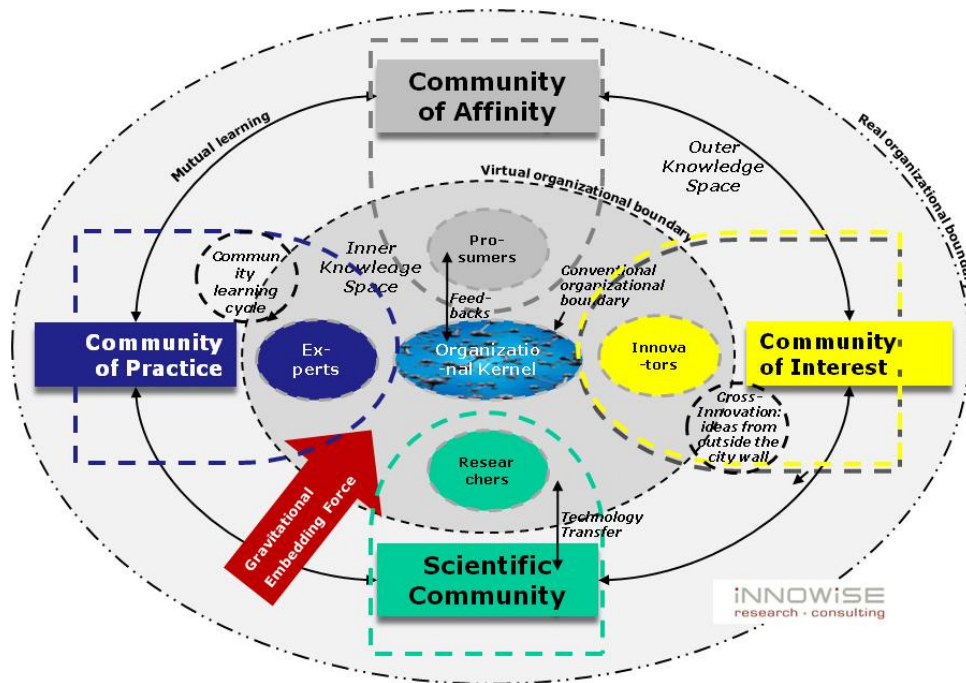


Figure 2: Embedding into ‘Communities of Knowledge’ to boost Innovation 3.0 [8]

These ‘multi-agent systems’ and related communities define the dynamic context of business modeling. The notion of “embeddedness” clearly stresses the point that setting up new business models is an ongoing task. For instance, if we look at most of the innovative Internet services that have emerged in the past years, we recognize that the initial business models behind them have been altered over time in many ways – in terms of changing the functionality for customers (“value proposition”); modifying the usability for, and interaction with, customers (“CRM”); or in terms of amending the basic financing mode (e.g. “ad-financing” versus “pay per transaction”).

One may argue that these adjustments of business models are a routine adaptation process, since even in the “Analogue Economy” incremental improvements of such models occur on a routine basis. However, the innovation process in the Digital Economy is different in some basic respects, namely in the areas of (a) innovation infrastructure, (b) corporate innovation policy, and (c) organizational adaptation and culture:

- (a) **Innovation infrastructure:** Innovation activities of the Digital Economy are embedded in a “digitalized infrastructure” with numerous easy accessible and easy to adopt digital enabling technologies. These technologies unfold a huge potential for new products and services, since combining and linking them to each other becomes - ‘bit by bit’ - more easy. Thus, the Digital Economy is at the center of a melting process of transferring horizontal technologies into vertical markets (see Fig. 3):

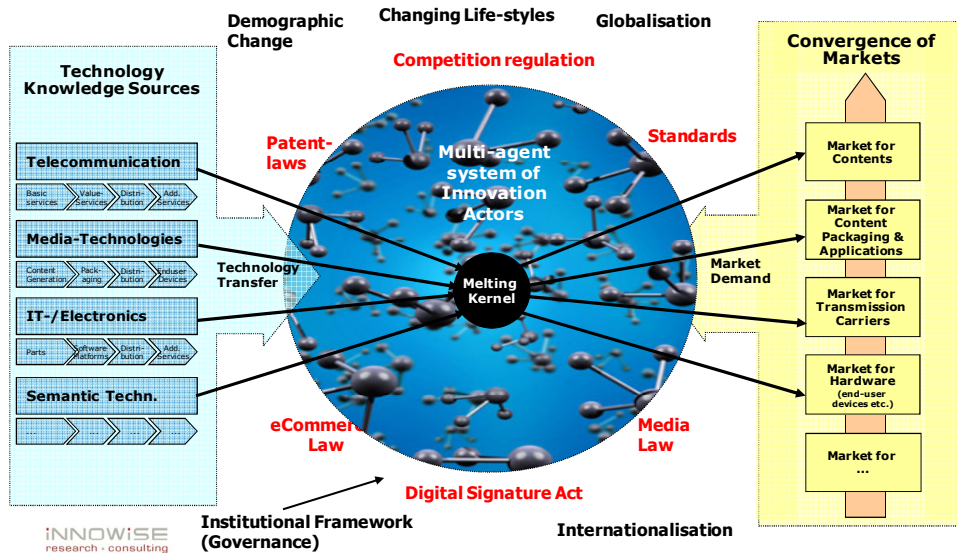


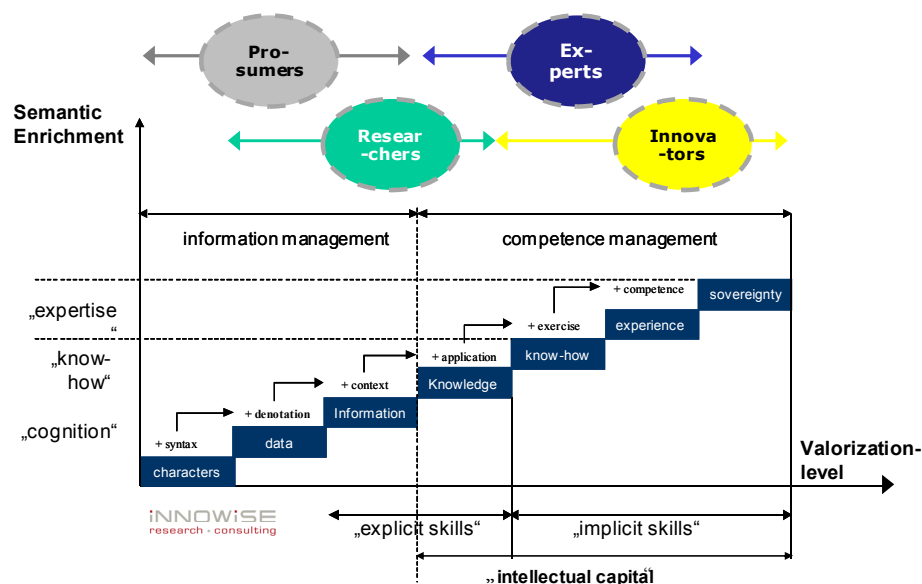
Figure 3: The Digital Economy as the Melting Kernel from Horizontal Technologies to Vertical Markets

- (b) **Corporate Innovation Policy:** In the Digital Economy, the value of goods and services is based on knowledge, application know-how, experience and business model sovereignty. Following Figure 4, the firm's knowledge management system has to turn information into competences, while developing appropriate explicit and implicit skills to manage the innovation process.

Hence, as the melting kernel needs to fuse very different technologies, firms understood very early that continuous learning was the key to innovation. Competence accumulation in an extremely diversified technology landscape is not possible, however, within a single innovation entity. As Henry Chesbrough [3] put it, 'Not all the smart people in the field work for us; we need to work with smart people inside and outside the company' [cited in 14] – thus collaboration is the order of the day. Hence, firms learned that it is more important to know who disposes of desired competences than to own all those competences themselves. Therefore, a distinctive openness of organizational borderlines is the ruling governance mode for innovation [7]. A decisive element in the accumulation of competences, then, is establishing permanent links to the firm's surrounding knowledge communities and in absorbing external knowledge [8].

To gain maximum effectiveness in terms of knowledge transfer, the innovating firm has to balance the community orchestration [12], because different stakeholders (like "prosumers", "experts", "innovators" ,and "researchers" as representatives of the surrounding communities of knowledge) usually only cover certain knowledge artifacts [8] exploitable for the firm. For example, "Innovators" from Communities of Interest typically dispose of in-depth know-how and experiences in their business domain, as well as of implicit skills in

running domain-related business models. “Experts” from Communities of Practice are linked through the mutual interest of solving certain problems. These “Experts” typically embrace specialized knowledge artifacts and know-how in applying this knowledge to defined problems and experiences from related application cases. Thus they usually do not have competences in running decisive business models, since they remain upstream in the “knowledge supply chain”, and provide in-depth technical expertise. “Researchers” generally collect data and information and transform these artifacts into knowledge. Of course, many “Researchers” from Communities of Science also dispose of extensive know-how, especially those working in applied joint research projects with industry. Finally, “Prosumers” from Communities of Affinity usually participate in producing ideas or design artifacts in an open innovation process: they give information on product or service usage by providing feedback or they engage in idea contests. Here as well, we increasingly find “Experts” who dispose of decisive know-how in product/service usage and ‘content production’, which has to be considered as an important external source of knowledge.



Source: inspired by Auer-Consulting (n.d.)

Figure 4: Evolution from Characters to Sovereignty: the Up- and Downstream Artefacts of Knowledge

(c) Organizational adaptation and organization culture

To enable collaborative learning as the main feature of corporate innovation policy, the organization has to adapt to changing environments on a continuous basis. Community orchestration in this sense means establishing organizational anchors into surrounding communities so as to ensure a balanced knowledge transfer and absorption. Since stakeholders from surrounding communities usually have different impetuses on knowledge (see again Fig. 4), they are also

involved differently in the innovation process (see Fig. 5). *Prosumers* predominantly provide information on product usage from the market perspective and thus new ideas that enter the innovation funnel more upstream. *Researchers* are usually involved in ideation and design, in pre-competitive joint research, and also in the development of innovation projects. *Innovators* usually are engaged in the phase of development and production as co-operation partners. *Experts* are – depending from their asset specificities - participating throughout the innovation process, predominantly from ideation to development:

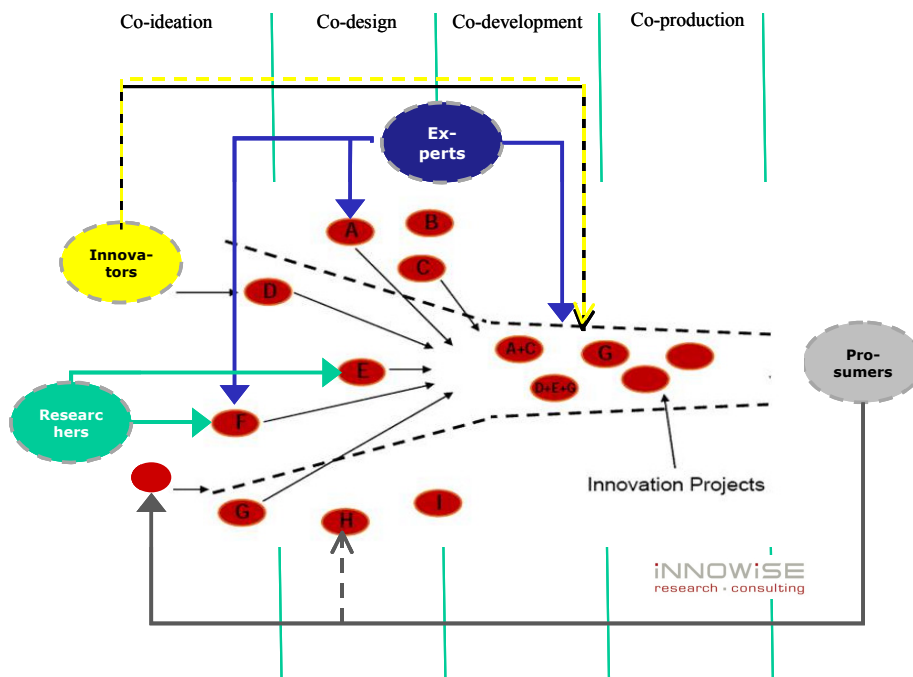


Figure 5: Involvement of Various Stakeholders in the Open Innovation Process

To gain a proper “community orchestration”, the organization has to develop sufficient gravitational embedding force to establish effective and efficient relationships to knowledge communities. Thus, for a long time organizational change has been described as an important source of competitive advantage [13]. In the recent debate about ‘organizational renewal’, the main focus has been on “dynamic capabilities” [17] and “ambidextrous organizations” [18]. Accordingly, Teece et al. define the dynamic capabilities of a firm as ‘it’s ability to integrate, build, and re-configure, internal and external competences to address rapidly changing environments’ [17]. In more detail, the different attributes or pre-dispositions of organizational renewal capacities are discussed as “the ability to overcome established routines by self-organization and organizational renewal” [1], and being able “to organize for constant change and to establish collective organizational learning to continuously reinvent the company’s core business processes” [16]. In this context, “Organizational Learning” is recognized as the “ability to maintain a continuous process of adjustment of search rules, attention rules, and goals of the

organization” [1], or the “ability to undergo a continuous process of experimentation, adaptation and learning to pro-actively define the business environment” [2].

A relatively new issue in organizational adaption research is the notion of an “ambidextrous organization” [6, 18], which is defined as an organization’s ability to reconcile explorative and exploitative activities simultaneously” [6]. Ambidexterity is more or less a re-conceptualization of the discourse on ‘dynamic capabilities’ explicitly considering the necessity of flexibility and stability modes of an organization. The core question that ambidexterity seeks to answer is: “How are dynamic capabilities – the organization’s learning mechanisms – shaped in ambidextrous organizations in order to cope with contradictory environmental demands?”[6].

If we transform this question to the management of business model innovation, we may ask: What are the different dynamic organizational capabilities and modes of the organization (with respect to infrastructure, policy and culture) that ensure flexibility and stability, and enable it to adjust business models successfully to changing environments?

The following figure shows the open innovation funnel [3], in terms of several opposite pairs following the notion of an “ambidextrous organizations”:

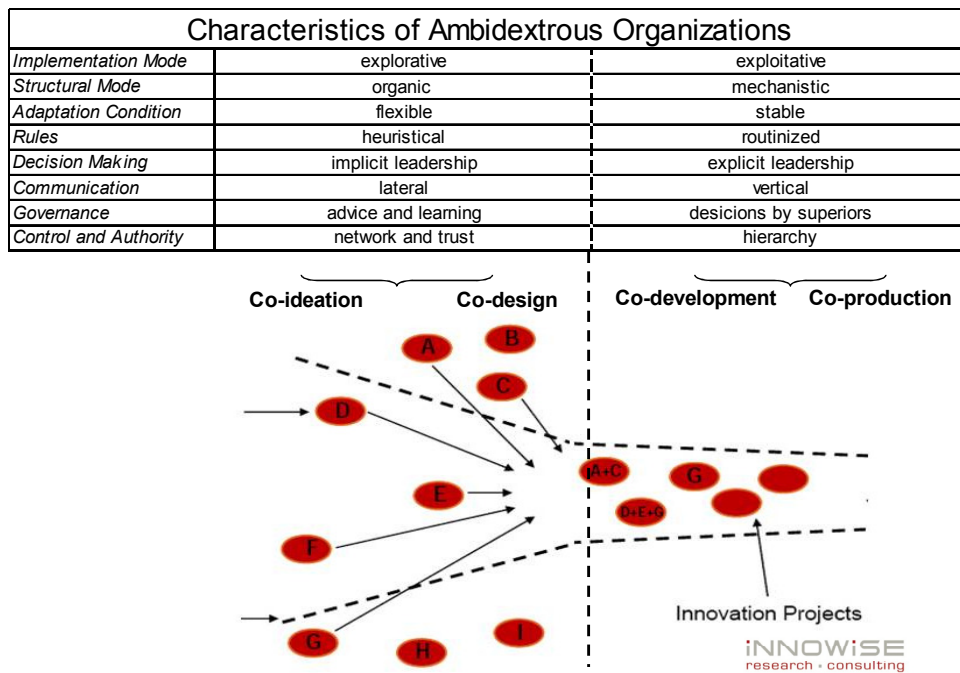


Figure 6: Ambidextrous Organizational Antecedents of Business Model Innovation

According to Figure 6, empirical evidence in the literature reveals that organizations which can manage both modes of organizational design, are able to adapt more effectively and efficiently to changing environments [6, 18]. Obviously, ambidexterity produces relevant trade-offs between those phases of an innovation process where flexible adaptation to new ideas, designs, moods etc. (“De-compressive Openness”) is

necessary with those phases of the innovation process that need straight-forward management (“Compression Mode”) [4]. Figure 6 suggests that there is a strict line separating explorative from exploitative modes, organic from mechanistic structures, stable from flexible phases, heuristics from routines etc. Of course in reality, we may experience a specific composition of these ambidextrous modes depending on the single innovation case, sector, environmental dynamics, community communication channels, learning requirements etc. We will return later to the underlying hypotheses on ambidextrous designs as the appropriate organizational adaptation mechanism when describing the business modeling cases investigated in this paper (see chapter 4).

2 Drivers for Business Model Innovation in the Digital Economy

If we look at the innovation landscape of the Digital & New Media Economy, we can identify more than a dozen of relevant trends and drivers for Business Model Innovation (see Fig. 7):

- Crossmedia Publishing (from one-dimensional to multi-dimensional channels, products and services)
- Dynamics of Web-Generations (from Web 1.0 towards Web n)
- A5 - Anything, Anytime, Anywhere, Anyway, Anyone (from discrete to seamless information and communication)
- Mass Customization, Customer Profiling and Targeting (from standardized towards individualized and targeted products and services)
- Augmented Reality (augmentation of the real world with virtual information)
- Location Based Services (from general to geodata based services)
- Sector Convergence (from autonomous to fused branches)
- Usability (from complex to intuitive applications and interfaces)
- Online-Payment Systems (availability of micro-payment as enabling factor)
- Participation (from static to dynamic and anthropocentric networked consumers and communities)
- Demographic and Lifestyle Changes (i.a. appearance of Digital Natives and elderly society)
- Globalization (integration of regional economic and social communities through global communication networks)
- Legal Framework (regulatory push from sector specific laws).

| Trends | Relevant areas of Business Modeling | | | | | | | |
|--|-------------------------------------|-----|------------------------------|------------|-------------------|---------------------|-----------------|-----------------|
| | Value-Proposition | CRM | Resources and Infrastructure | | | | Financing | |
| | | | Human Resources | Technology | Organization | | Cost structures | Revenue streams |
| | | | | | Value-add network | Workflow-Management | | |
| Crossmedia Publishing | | | | | | | | |
| Dynamics of Web-Generations | | | | | | | | |
| A5 - Anything, Anytime, Anywhere, Anyway, Anyone | | | | | | | | |
| Mass Customization, Customer Profiling and Targeting | | | | | | | | |
| Augmented Reality | | | | | | | | |
| Location Based Services | | | | | | | | |
| Sector Convergence | | | | | | | | |
| Usability | | | | | | | | |
| Online-Payment Systems | | | | | | | | |
| Participation | | | | | | | | |
| Demographics, Lifestyles etc. | | | | | | | | |
| Globalization | | | | | | | | |
| Legal Framework | | | | | | | | |
| Corporate Culture | | | | | | | | |
| Knowledge Management | | | | | | | | |
| Strategy | | | | | | | | |

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Figure 7: Trednmatrix: Metatrends and Business Modeling Areas in the Digital and New Media Economy

We define the term “Business Model Innovation” as changing the building blocks of how value is produced, offered and delivered to customers [15]. Changing the buildings blocks may embrace

- altering the value proposition and/or customer interaction,
- combining new, or changing, human, technological and organizational (network) resources,
- changing the innovation strategy, supportive knowledge management and corporate culture.

Business Model Innovation then leads to different cost structures and revenue streams.

It is obvious that due to the diversity of drivers and the portfolio of firms in the Digital & New Media Economy, their diverse competences and roles in the innovation process, that the impacts on business modeling are manifold. This introduces a distinctive variety of challenges and requirements that have different implications on the relevant building blocks of business modeling. In our research, we developed a set of hypotheses covering each cell in the matrix of Figure 7 to investigate the leverage effects of trends towards the building blocks of business modeling.

In order to be as illustrative as possible, we will outline a set of twelve case studies on Business Model Innovation, including one in more detail (highlighted in Table 1). The business cases correspond, in part, to the ongoing innovation processes in our empirical portfolio. Thus, information is displayed anonymously wherever distinctive business interests are concerned.

3 Business Model Innovation Cases

The following Table shows the business cases which we have investigated and their constitutive community pillars:


| Type of firm | Value Proposition | Links to Knowledge Communities in the Context of Business Model Innovation | | | |
|--|--|--|---|---|---|
| | | CoA | CoP | CoI | CoS |
| Publishing house (books and job printing) | Community platform for book recommendations | User Generated Content – UGC (book recommendations) | Professional Generated Content - PGC (book recommendations) | ECommerce platform for other publishers (co-opetition) | Recommendation engine based on semantic technologies |
| IT-Services | Provision of data security and filter systems for youth endangering contents | Blacklistings based on UGC | Blacklistings based on UGC | Professional associations against youth endangering contents support | Text recognition and comprehension based on mathematical algorithms |
| Documentary Film Production | Edutainment 3.0 platform to deliver HD educational content | UGC | PGC from teachers and further education institutions | Associations of further education support | Semi-automated annotation of videos |
| Publishing house (periodicals) | Interactive guide from pregnancy to young families | UGC from fora and blogs | PGC - Medical advice | Medical associations support | Trend monitoring based on IT-supported Social Networking Analyses |
| Full Service Internet Agency | Visualization of hyperlocal information | End-users of web 3-D and LBS services | Web 3-D repositories for virtual worlds based on Open Source | Cooperation with eLearning and serious games providers | Fame Mirror Concepts to intrinsically motivate participants |
| Internet Platform Service Provider | The Best Doctor for your health problem | UGC – evaluations from patients | Semantically enhanced ontology based on Open Source | Medical associations support | Semantic Technologies for search and annotation |
| Publishing house (newspaper) | Regional IPTV to complement printed content | UGC – regional and local content (non-professional journalism) | PGC – professional produced regional and local content | Co-competition with other publishers in the region | Semantic technologies for context-related ad-targeting |
| Webanalytics | Interactive online engine to ensure compliance with data laws | End-user comments as source of compliance information | PGC (interactive guide for compliance management) | Professional association of the Digital Economy | --- |
| Publishing house (books) | Location Based Services for tourists on mobile devices | UGC of tourists to enhance authentic information | PGC of professional writers | B2B ad-partners for implementing the business model | Fame Mirror Concepts to intrinsically motivate participants |
| Full Service Internet Agency | Interactive mobile Guide with location based events & gaming services | UGC – evaluations of events, restaurants, etc. | Tourist information based on professional writings, special technology solution providers | B2B cooperation with ad-partners, local trade-, tourism & event marketing organizations | Enhanced GPS technology for mobile devices |
| Learning Management system provider | Web 2.0 based learning and competences monitoring | UGC from learners | PGC from training experts | Professional association of further education institutions | Competences ontology |
| CMS provider | Mobile CMS system to deliver content effectively to mobile devices | UGC from mobile device users (usability feedbacks) | Link to mobile CMS based on Open Source | Professional association of the Digital Economy |  |

Table 1: Business Model Innovation and Related “Community of Knowledge” Pillars

As can be seen from Table 1, each business model includes relevant, and indispensable, contributions from different knowledge communities that are decisive for the running of the new business model. If we now mirror Table 1 against our business modeling template (see Fig. 7), we can advance a new business model generation template:

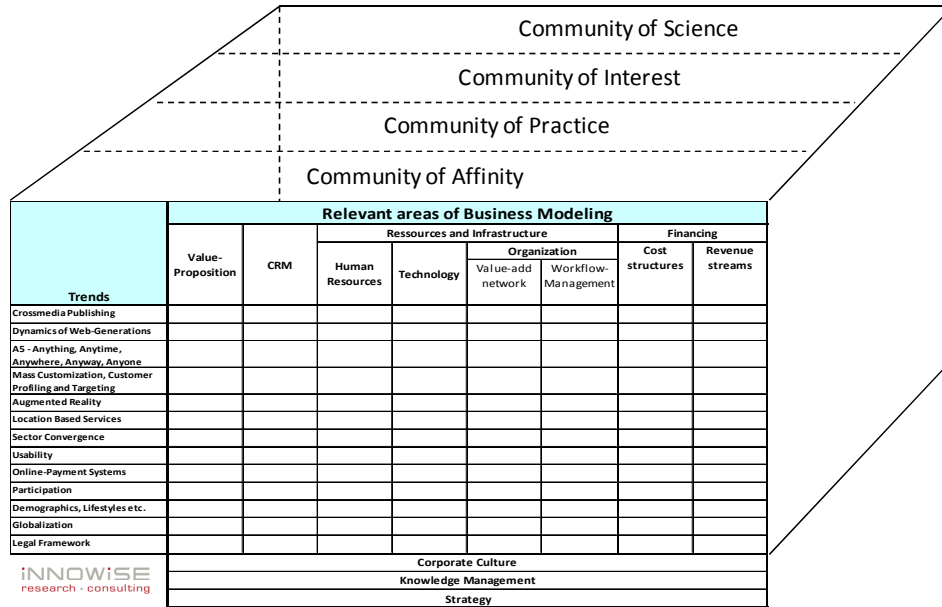


Figure 8: Working Template of Business Model Innovation with respect to Community Embedding

4 Experiences from Business Model Innovation

In this section we will draw on the findings from the different Business Model Innovation cases we have undertaken, and focus especially on the role of organizational ambidexterity in mastering innovation challenges.

Impacts of Trends on Business Model Innovation

The first evaluation step includes an impact analysis of relevant drivers with respect to modeling different business cases. In this first step – based on internal workshops held in companies – an in-depth assessment of relevant impacts from external innovation drivers has been made (Fig. 9).

The matrix displays the working template to assess trend impacts on business models. It allows first an evaluation of relevant drivers (horizontal variables) as already displayed in Fig. 7. Each variable is discussed within a firm specific workshop with the management asking for an assessment of the drivers dynamic impact on the firm’s business environment (is it changing rules of the game?), its cumulative intensity (can we expect that it is driving business continuously?), and its selectivity (does it have an impact on specific value propositions, resources etc.?). Second it allows analyzing the relative importance for and leverage effects on the specific business model (step 2 in Fig. 9, summarizing the evaluation of each of the business cases in Table 1).

Using the example of business case 10, **“Interactive Mobile Guide with Location Based Events & Gaming Services”**, we can identify a strong impact of 7 and a medium impact of 9 drivers. The impacts of these drivers within this Business Model Innovation case study can be described as follows:

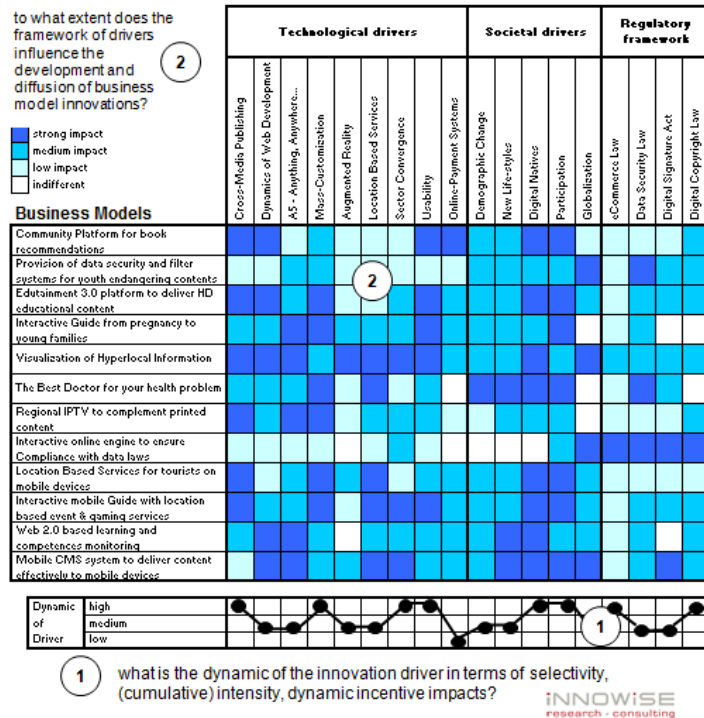
Strong Impact Drivers:

- **Cross-Media Publishing:** the new service is only marketable with a strong cross-media component. For a rich user experience, text, video and audio information has to be merged; dynamic content has to be provided connecting users locally in an immersive game context.
- **Mass-Customization:** personalized information has to be provided that follows the demands and the preferences of users (tour guides’ recommendations, depending on choices of restaurants, cultural events etc.) and depending on the time-of-day (breakfast, lunch, dinner) etc.
- **Location Based Services:** information about events and cultural artifacts has to be contextualized with geo-data to allow for instant information services depending on the geo-position of the user.
- **Sector Convergence:** in this case, a mobile game provider is part of the business model architecture to boost user interaction in a C2C context.
- **Usability:** an important driver for a broad diffusion and acceptance in B2C-markets
- **Digital Natives:** this customer segment is supposed to use LBS and personalized services extensively.
- **Participation:** user interaction (C2C) plays an important role in mobilizing a huge Community of Affinity for the new service, since these customers usually identify with each other through similar interests (e.g. night life, rock concerts). In addition, feedback tools are necessary to integrate User Generated Content.

Medium Impact Drivers:

- **Dynamic Web Development:** the new business model should make extensive use of Web 2.0 tools to enhance participation and user feedback (see above). The ‘anthropocentric touch’ of the service strongly supports incentives to join the

Figure 9: Evaluation of Trend Impacts on Business Model Innovation

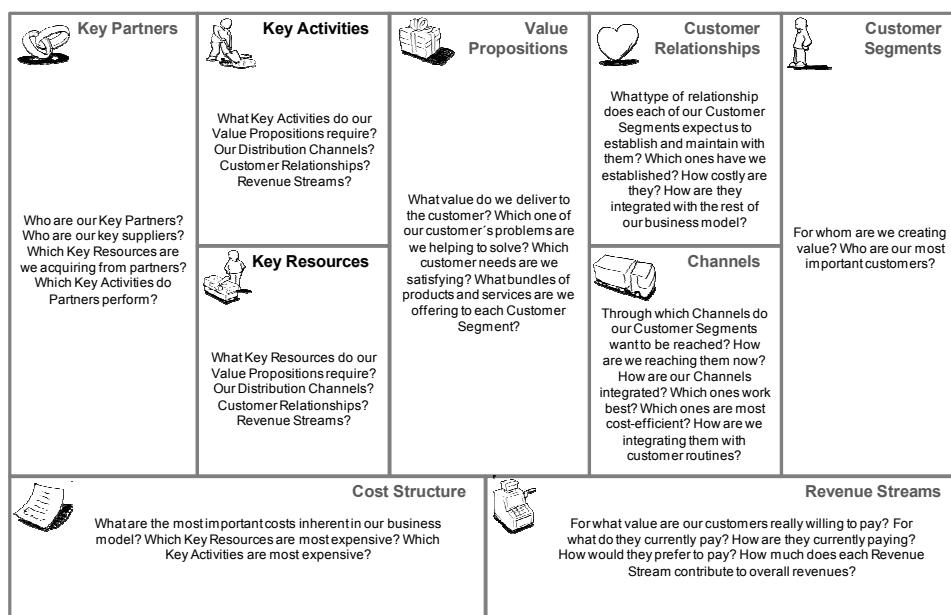


community. Web 3.0 technologies have to be integrated in terms of “Semantic Search and Ontologies” to allow flexible displaying of cross-linked data. Web 4.0 tools then could be the next step to further develop the local service towards a hyperlocality ‘web of things’³.

- E-payment systems have to provide options for micro-payment, since more flexibility in designing the operational cash-streams has to be implemented.
- Demographic Change and New Life-styles: the business model also needs to adjust usability and services also to the user behavior of elderly people.
- Globalization: in cities with a high tourist turnover, the service should always deliver up-to date information.
- Legal framework: technically, the service has to provide an opt-in procedure, since the use of, for example, geo-data is only allowed under certain legal pre-requisitions which vary from country to country.

Embedding into Knowledge Communities

The second step is the elaboration of substantial answers to the relevant questions in the Business Model Canvas [15]. We regularly use this template during business model development. From the building blocks of our Business Model, we derive key questions (see again Fig. 7 and 8) which form our template:



Source: Osterwalder/Pigneur (2009): Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers

Figure 10: Business Model Canvas: Questions to Develop Business Model Innovation

³ The ‘Web of Things’ is a kind of ‘Outernet’ where information embodied in articles of daily use is meshed up with information in the Internet. This is also called Web 4.0 [8].

This template contains standard questions that need to be addressed in the course of Business Model Innovation. Since our extended model also embraces the organizational anchors that are embedded into knowledge communities, these standard questions have to be complemented with additional queries related to Community Integration:

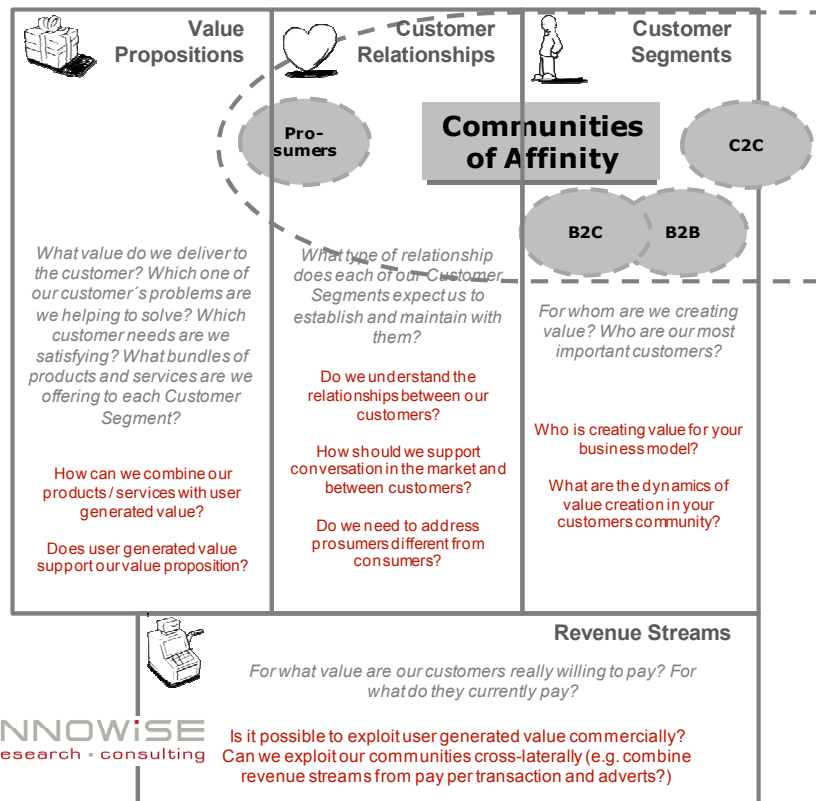


Figure 11: Extensions of Q&A for Business Model Innovation (downstream tasks)

If we look at the downstream tasks within Business Model Innovation, we need to be aware that stakeholders from Communities of Affinity are relevant contributors to our Business Model. With this background for the above mentioned business model innovation case on “Location Based Services (LBS)”, the following “must-dos” have been identified for the business case model on “LBS”:

- No marketable products/services without UGC,
- B2B customers (restaurants, shops, cultural institutions etc.) and consumers have to deliver content and have to pay for the products/services,
- Pro-active community engineering: initiating a premium user-community, and setting up of an incentive system,
- Clear IPR regulations,
- Cross lateral exploitation (e.g. combining revenue streams from pay per transaction and adverts),
- Integration of new enabling technologies (e.g. for trendsouting in the communities).

Looking at the upstream tasks, we locate community integration into the Q&A template as follows:

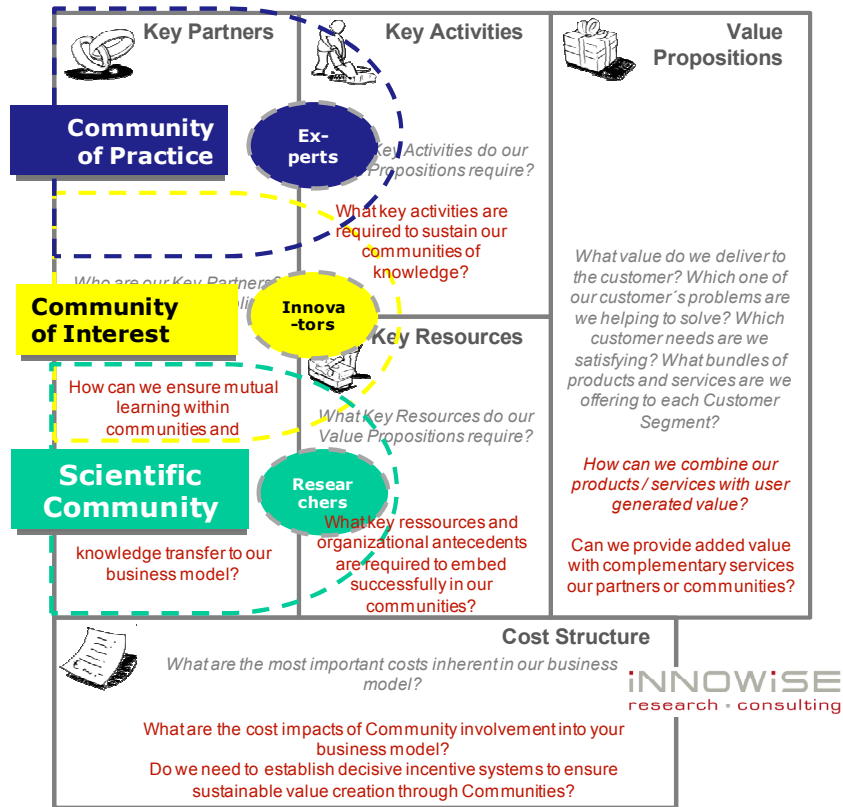


Figure 12: Extensions of Q&A for Business Model Innovation (upstream tasks)

For our business model example “LBS” the outcome of the “must-dos” design discussion can be summarized as follows:

- Pro-active community engineering,
- Setting up a decisive incentive system,
- Establishing learning arenas,
- Trendscouting in the communities,
- Integrating new enabling technologies (semantic technologies for search),
- Collaborative design and development (games developer),
- Controlling the transaction costs of community engineering.

Organizational Adaptation with Ambidextrous Design

Looking at the portfolio of requirements in the downstream and upstream tasks, Business Model Innovation needs to link the business model value architecture (in particular the configuration of the value-network partners) with the external communities [8]. In our case studies we have to consider at least four relevant communities (see again Fig. 8) as being of crucial importance for the performance of the new business model. We will illustrate thus using the example of the LBS Business Model Innovation:

Communities of Affinity (CoAs): as already expressed, without User Generated Content, Web 2.0 tools for feedback and C2C interaction, there is no ‘lively system’ to attract users. The operating business architecture has to imply a strong “community engineering” unit to develop appropriate incentive systems for the mobilization of the community. The ‘basic settings’ of such a unit should comprise, “constant stimulating market conversation”, “perpetual monitoring of trends in market conversation to identify new user needs”, and “application of purposeful incentive systems” to stimulate affinity and identification-based trust amongst the community (e.g. by introducing a ‘fame-mirror” [5]). Thus the organizational anchors into the community may be implemented with advanced social media tools and intelligent incentive systems to stimulate further user identification. These tools have to be designed on the basis of strict and reliable rules enhancing the confidence of users to participate.

Communities of Practice (CoPs): the value-network has to sustain strong ties to surrounding value-partners who dispose of different types of data, information and knowledge. On the ‘content-side’, value-partners from, firstly, local and regional tourist information institutions, and, secondly, from event marketers, have to be involved to ensure content flows from professionally established content sources. Thus, links to experts and intermediaries that are engaged in the ‘knowledge space’ of tourism marketing, event marketing etc., have to be established carefully. Also weak ties to pools of professional authors of tourist information have to be developed to enable the flexible inclusion of professionally generated content into the application when needed. On the ‘technology side”, experts on multimedia data-integration, and the linking of different geo-data (including, for example, collaborative ontology-design engineering) have to be approached to ensure constant technology transfer and the provision of technical solutions to operate and further develop the business model. For organizational anchors to be embedded in these communities, we may at first consider developing a “transactive knowledge management system”, containing information on “Who knows what in tourism and event marketing?”, e.g. members and experts of regional tourism and event communities. A second implementation measure should be “membership of marketing and technology people from the value-network in selected communities of experts” to ensure knowledge transfer.

Communities of Interests (CoIs): the value network has to extend its virtual organizational boundary along working groups of selected professional associations, (a) in the Digital and New Media Economy to include advertising agencies and online-marketing as well as search-engine optimizers, (b) in the tourism and event marketing sector to ensure support for the business model and links to B2B partners (e.g. shops and restaurants), and (c) in the local trade associations. The latter is an indispensable measure to connect to local trade partners as potential B2B-partners for the LBS application. Organizational anchors into these communities are clearly of the institutional kind, e.g. firms becoming members of the associations mentioned. Other paths into the CoIs involve recruiting freelancers who have formerly worked in the tourism and event marketing sectors as an initial step, and further networking along their personal relationships into the CoIs.

Communities of Science (CoSs): One important aspect, already mentioned in the context of CoPs, is to establish strong ties to the Scientific Community on “Semantic Technologies and GPS technologies”. This is important in selecting personalized and geo-data contextualized information - on the basis of time-of-day and life situation - for an

immersive user experience. Thus conference visits, as means of loose ties to specialized scientific groups etc. are an appropriate organizational adaptation measure.

Looking at the criteria of ‘ambidextrous design’ (see Fig. 6), we may say in a nutshell that the value-networks needed to establish different adaptation mechanisms and to link them to relevant Communities of Knowledge can be summarized as:

| LBS Business Case | CoA | CoP | CoI | CoS |
|------------------------------|-------------|-------------|--------------|--------------|
| <i>Implementation Mode</i> | explorative | explorative | exploitative | exploitative |
| <i>Structural Mode</i> | mechanistic | organic | mechanistic | organic |
| <i>Adaptation Condition</i> | stable | flexible | stable | stable |
| <i>Rules</i> | routinized | heuristic | routinized | heuristic |
| <i>Decision Making</i> | explicit | implicit | explicit | implicit |
| <i>Communication</i> | lateral | lateral | vertical | lateral |
| <i>Governance</i> | learning | learning | advice | learning |
| <i>Control and Authority</i> | trust | hierarchy | hierarchy | hierarchy |
| | | | | |

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Table 2: Organizational Adaptation: Ambidexterity Criteria for the Business Case “Location Based Services”

To embed into the Community of Affinity, the LBS value network needs to establish reliable social media tools that stimulate identification-based trust amongst the community members. The required structural approach tends to be more ‘mechanistic’ at first glance, since it needs stable adaptation and reliable rules for feedback and market conversation. Decision making processes on, for example, how to display and exploit User Generated Content should be transparent and explicit, following equal rules of feedback and exploitation for all participants. At the same time, the organizational link to the CoA needs to enhance exploration and learning to ensure the exploitation of knowledge flows, especially UGC.

For the Communities of Practice, the LBS value-network needs to be embedded more organically into the communities by engaging in working groups, establishing communication channels to different key stakeholders with specific knowledge etc. Thus, the adaptation mode should be more flexible, reaching from occasional participation to strong ties e.g. as an official member of special CoPs. The rules of embedding should be more heuristic, e.g. opening up organizational borderlines, including experience exchange with experts, and for inquiries from outside the firm. At the same time, there could be a need for controlling outside-in and inside-out flows of knowledge hierarchically. These should be agreed upon in the value-network, since the proper functioning of certain technological interfaces etc. is critical for the entire business model.

In order to be embedded in Communities of Interest, the LBS value network may implement institutional engagements to install stable conditions for knowledge flows. Since the main aims are to exploit relevant knowledge from CoIs and to gain support for the business model, rules and decision models should be explicit, formalized, and stable over time.

Finally, in order to link to Communities of Science, the LBS value-network needs to establish both strong and weak ties to certain technology providers, depending on the role and enabling potential of the technology. Thus, the principal mode should be exploitative (“What is the best technology, and how can I use it?”), and modes of participation may be organic (occasional participation in conference) etc.

5 Conclusions

In the Innovation 3.0 paradigm [8], Business Modeling is a challenging exercise, since the complexity of framework conditions, paths to embed into knowledge communities, exploitable technologies, architectural design of the value-network, interaction strategies with customers etc, is constantly rising. A multitude of trends that have impact on the future business model, as well as the crucial link to knowledge communities, pose additional questions in the course of Business Modeling that need to be considered.

This paper has examined some of the main questions about Business Model Innovation in the Digital and New Media Economy. Expecting the trend to embed digital business processes into the - so far - “Analogous Industry”, we may expect similar questions and challenges of Innovation 3.0 to be raised in the “Old Economy” in the near future.

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