A Futuristic Outlook on Business Models and Business Model Innovation in a Future Green Society

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Abstract

Companies nowadays invest more capital and resources in green technologies and increasingly start to think more radically when considering their business model innovation processes. However, the development and innovation of green business models to the so called green society is a complex venture and has not been widely researched yet.

The study of green oriented innovation has intensified tremendously in the last decade due to both user demand ('pull') and the development of new mobile and wireless communication technologies ('push'), which gives hope in bringing the green society vision into reality.

Accordingly, this paper portrays a conceptual futuristic outlook into the development of green oriented business models, and clarifies the processes of business model innovation for the future green society.

Keywords: business model, innovation, green business models, green society.

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1 Introduction

In 2010 we are in the midst of 3G. Thanks to heavy research and big investments in mobile and wireless technology we are now heading quickly towards 4G and 5G. WWWW: World Wide Wireless Web will emerge soon; its evolution will be based on 4G and will result in a completely wireless and interconnected world. 5G will have an even more important impact on the industry and will add more services and benefits to the world.

Also, given the fact that the 5G will encompass a more intelligent technology system, it is expected that it will open the possibility for new, perhaps disruptive, green business models and will create more intelligent business models that will enhance the interconnection even more, as well as the interdependency between companies and people around the globe.

Yet, from a Business Model (BM) perspective companies are still facing tremendous challenges in understanding the processes of reshaping their existing BM into a new, green oriented one. Consequently, in many cases, and despite the fact that many managers can observe the enormous potential existed in innovating green BMs today, they still find those processes to be highly risky and also somewhat foreign to the existing innovation processes which they have been experimenting with in the past (e.g. product innovation process). Consequently, their existing business model is hardly being reviewed or changed dramatically into the direction of what we call the "green society".

2 Components of the Business Model

The term BM became popular in the mid-1990s during the "dot com era". As business ecosystems emerged, many companies started to rethink their business model and business structure by shifting to an ICT based business model or an "E-form" business [19]. Many authors (see e.g. [29]) have attempted to define the business model concept. It seems that most (if not all) authors agree that a business model is simply a combination of two terms: "business" and "model".

Accordingly, a company's "business model" serves as a building platform that represents the company's operational and physical manifestation. Thus, the challenge for business model "designers" is to first identify the key elements and the key relationships that describe the company's "AS-IS" business model before innovating it.

Building on various studies that have been carried out between the late 1990s and 2003, Morris [20] tried to build what is called "a unified perspect-

Table 1 Core components of the business model.

Core question	Core building block
Who do we serve?	*Target customer*/s, market segments and geographies.
What do we provide?	*Value proposition*/s (products, services and processes) that the company offers.
How do we provide it?	*Value chain configuration* (internal) *Core competences* (assets, processes and activities) that translate companies' inputs into value for customers (outputs). *Partner network*: both strategic partnerships and supply chain management. *Relationship*/s (e.g. physical, digital, virtual, personal, peers, mass awareness).
How do we make money?	*Profit formula* – both turnover and cost structure together with revenue flow.

ive of business models". The authors argued that a business model framework must be reasonably simple, logical, measurable, comprehensive, operational and meaningful. Although Morris et al., as well as other research groups (see e.g. [22]), have systematically analyzed relatively the same list of authors [2–5, 9, 11, 15, 17, 18, 23, 27, 28, 30] they reached different conclusions. Despite the large variation in opinions we could still identify a strong resemblance between the different components. Thus, based mostly on Osterwalder et al.'s [22] nine building blocks, Amit and Zott's [3] analysis, Chesbrough's [6] open business model innovation, Johnson et al. [14], and Hamel [11], we propose the following seven building blocks (Table 1) to best represent the core components of a business model.

3 When Is a BM New?

The next issue concerns the question when we can call a change in the model a business model innovation. Three approaches have been proposed. The first approach "defines" business model innovation as a radical change in the way a company does business [6, 12, 13, 15]. Linder and Cantrell, in particular, clearly attempt to draw a line between what can be defined as business model innovation and what cannot. The second approach regards any change in any of the [core] building blocks or the relationships between them as a form of business model innovation [3, 17, 22]. The third approach, in line with Abell [1] and Skarzynski and Gibson [26], involves considering the number of building blocks that are changed. Any change in one of the building blocks

Table 2 Incremental and radical orientation to each building block.

Building block	Incremental innovation "Do what we do but better"	Radical innovation "Do something different"
1. Value proposition	Offering "more of the same"	Offering something different (at least to the company)
2. Target customer	Existing market and customers	New market and new customers
3. Value chain architecture	Exploitation (e.g. internal, lean, continuous improvements)	Exploration (e.g. open, flexible, diversified)
4. Competences	Familiar competences (e.g. improvement of existing technology, HR, organizational systems, culture)	Disruptively new, unfamiliar, competences (e.g. new, different, emerging technology, HR, organizational systems, culture)
5. Partner network	Familiar (fixed) network	New (dynamic) networks (e.g. alliance, joint-venture)
6. Relationships	Continuous improvements of existed relationships	New relationships (e.g. physical, virtual, personal)
7. Profit formula	Existing processes to generate revenues followed-by/or incremental processes of retrenchments and cost cutting	New processes to generate revenues followed-by/or disruptive processes of retrenchments and cost cutting

would then constitute an incremental innovation. Changes in all the building blocks would be the most radical form of business model innovation.

Another approach defines innovativeness in terms of, what might be called, the reach of the innovation (e.g. [8, 10, 21, 25]). A suitable scale to measure the "new to whom" of a company's innovations could be one ranging from new to the company, via new to the market and new to the industry, to new to the world. If we combine all approaches, a three-dimensional space emerges (Figure 1), which helps in qualifying the innovativeness of a new business model:

- *Radicality* – (how new?) incremental vs. radical of each building block (illustrated in Table 2).
- *Reach* – to whom the innovation is new?
- *Complexity* – number of building blocks changed simultaneously.

Consequently, we get around the eternal discussion of when a BM innovation is indeed radical or incremental, simple or complex, far reaching or not, and, instead, portray the space in which any business model innovation can be positioned in terms of its degree of innovativeness by means of its radically, reach and complexity (Figure 2).

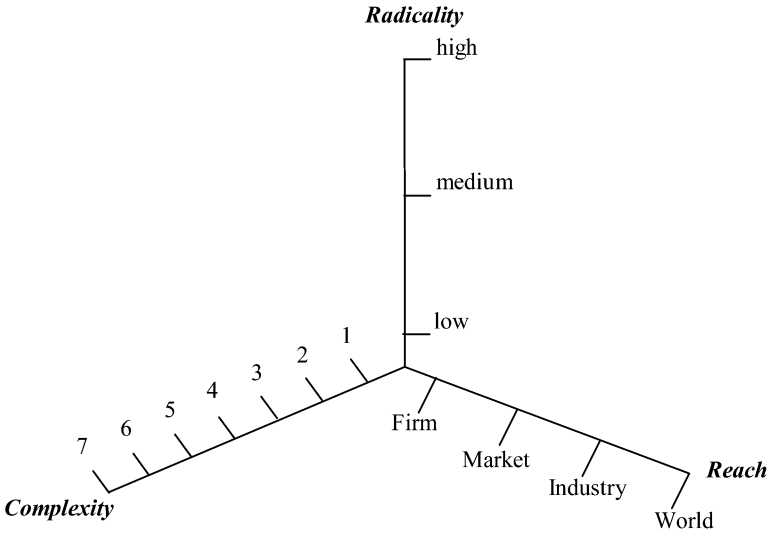

Figure 1 A three-dimensional business model innovation scale [29].

4 Towards an Open BM

Recent research has suggested that, given today's competition, it is highly unlikely that a single company would be able to possess all the necessary competencies needed in order to deliver successfully their unique solutions into the market place, particularly through breakthrough BM innovations (e.g. [6, 16]). Consequently, in order for companies to secure continuous innovation capabilities, it is recommended for companies to involve a bigger group of stakeholders through their innovation processes.

Chesbrough [5, 6], in particular, argued that businesses must adopt a model of innovation that looks both outside of its own four walls for ideas, as well as licenses its home-grown but unused intellectual property to others. That is, in order to truly exploit the true potential of the innovation capabilities of the firm, companies must open their business models by actively searching for and exploiting outside ideas and by equally allowing unused internal technologies to flow to the outside, where other firms can unlock their latent economic potential. For instance, one company develops a novel idea but does not bring it to market. Instead, the company decides to partner with or sell the idea to another party, which then commercializes it.

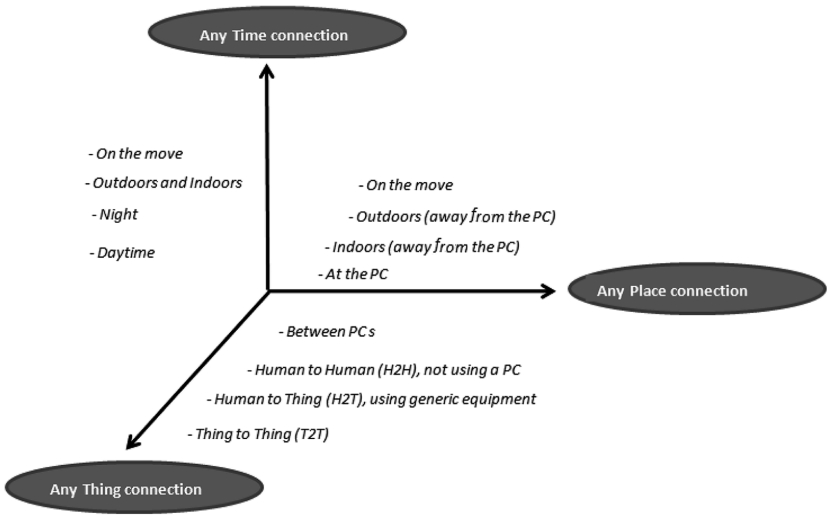

Figure 2 A three-dimensional model for future business model innovation (inspired by a TU Delft presentation ITU adapted from Nomura Research Institute [24]).

5 ICT as a Key Enabler in New BMs in the Green Society

Information and communication technologies appear to be of ever increasing importance to innovation, and will therefore provide the backbone of green business models in the future green society. Green based innovation will increasingly rely on, and will be enabled by, ICT. Innovation will be carried out via advanced ICT tools, and will facilitate the connectivity of:

- Anything – human to human; human to machine; machine back to human; machine to machine.
- Any time – day or night.
- Any place – around the globe.

These new business models will be based on networks, and will encompass different ICT platforms, competences and innovation participants. All of which, will be able to open new possibilities for the development of green-based technologies developments, and BM innovations.

Digital BM types, which include: computers digital networks, network of computers and cloud of computers and people, will all integrate. Virtual business models will include both single company business model, and multi business models working from different locations simultaneously (e.g. [7, 16, 31]). In this context, we believe that the green profile will indeed be

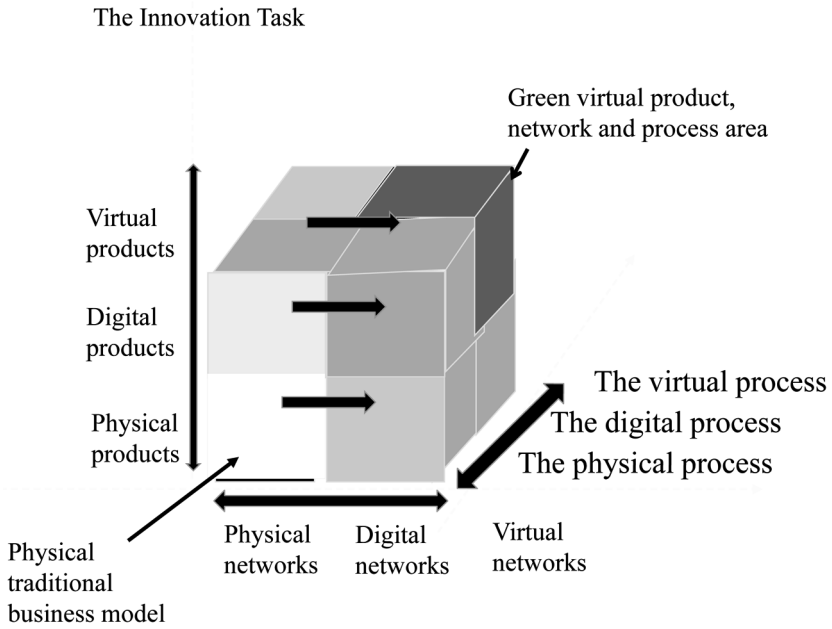

Figure 3 From physical to digital to green virtual business model based on networks (Lindgren [16] inspired by Whinston et al. [31]).

important, by adding more value to the customer and thereby give a better competitive positioning to companies.

The green business models of the future will not have a (purely) physical, digital or virtual character, but rather a combination of these, in a continuous integrated and connected process, wherever and whenever the customer demands it. Also, the integration of all three characteristics, followed by the advance ICT green-based innovations, will provide the ability to manage the mega information flow on the net more adequately, in an agile, flexible and secure way. This will provide a better platform for companies and networks to remain competitive, and to keep the business models lively.

6 Conclusion

The green business model concept continues to evolve and embrace new perceptions, challenges and opportunities. As part of the authors' preliminary research, some important trends and characteristics were found, as shown in Table 3.

Table 3 Future trends to green BMs and BM innovation.

Context for innovation	Past trends	Trends for the Future Green BM
Market	National Stable Common Mainly physical customer relation	Global Fragmented, Dynamic, Customized New markets (Blue Ocean) More digital and virtual customer relations Green Society
Technology	Single technology Expensive Data power low Stable On and off	Mix of technology or multi-technology Cheap Data power over capacity Unstable – Rapid new technology changes Green technology Secure technology Continuously on
Network	Closed networks, local networks Fixed networks	Open networks, dynamic networks, agile network, virtual networks, global networks
Companies' Competences	Stable competences developed inside the company or in a narrow networks	Dynamic – flexible competences Competences continuously developed under pressure Competences developed with many network partners – sharing core competences and skills in the innovation process (to reduce the risk of disruptive technological changes within the industry)
Products	Mostly physical products to some extent immaterial products Stable product – long life cycle Limited distribution and marketing channels	A mixture of physical, immaterial, digital and virtual products, service and process that are green Continuous development of product, service and processes – short life cycles
Business model Innovation process	Stable models Slow, linear innovation process	Many business model innovation models (flexible models, dynamic, agile models, learning by doing, using, interacting). Rapid prototyping and simulation of business models Lean and green business model innovation process
Success criteria	Individual success, innovation speed, time to market, cost and performance, local market Emphasis on short term success criteria More emphasis on continuous improvements and managing tangible assets efficiently.	Network-based success, right-speed innovation, time to market, cost and performance, global markets Emphasis on sustainability – short and long term success criteria. More emphasis on radical innovation More emphasis on managing intangible assets efficiently Scalable Business models Business models being green Society based success

This tendency, if continued, will have tremendous consequences on the way that companies will compete in the future. Consequently, open, multi and green business model innovation initiatives are expected to grow significantly in volume. In addition, the development towards network-based innovation may result in a radical change of our customer focus and understanding, since it (potentially) involves new technologies, new value propositions, new value chains, new network formations, and new markets and new customers. Furthermore, the new network formation ties will not necessarily be characterized by its industrial homogeneity, but rather by the large diversification of its network partners' identity for the purpose of pursuing radical innovation possibilities.

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