

# Digitization Era– How the Manufacturing Sector Can Change Its Rationale

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**Abstract:** Nearly all uses connected devices, shares information, and builds a network according to specific expectations or desires. The automated cycle is evolving. Anything similar is happening in an industrial environment. For example, the IT and tech sectors in deeply connected economies are already coordinated. Within communities, an organization may play various strategic positions that affect the business strategy of an enterprise. If the company understands this, after evaluating its role in the current environment it can change its approach. A business model is used to execute the approach. This business model will effectively change the role of the enterprise in the environment and will enable digitization to be carried out. The traditional manufacturing industry will change as well. There is therefore a need to combine the transition in business dynamics into strategic decisions, so that they are competitive in the future. The article addresses an approach to handling these changes in the context of the enterprise. The environment concept is carried on to the manufacturing sector. A framework for a clear integration of an environment organization was suggested on the basis of this transition and review.

**Keywords:** Business model, Digitization, Ecosystems, Manufacturing industry, Strategy, Ecosystem.

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## INTRODUCTION

In the context of connected devices and wireless networks, digitalization has changed significantly the connection of B2C. This will impact B2B businesses in future as the number of connected devices will grow from 17 billion in 2014 to 28 billion in 2020, according to a report published by the MIT Technology Review. Most of the rise is made up of "people" connected, small devices communicating. This may lead to significant renewing of the manufacturing industry's traditional value chain as digitization provides entirely new ways of creating value, e.g. via data analysis or incorporation of the customer through technology platforms. Companies'

environments must grow and provide consumers with interest. As a result, businesses in the manufacturing industry will change their approach and business model to this development. That's what this article focuses on. Initially, we analyze the state of the art and propose—on this basis—an introduction to the relationship of digitalization, economy, and policy and business model [1]. The rationale is later applied and outstanding explanations are provided for how a strategic approach is to be implemented in an environment. Finally, a road map is created for production companies on how to address the role of an ecosystem and future research needs are outlined.

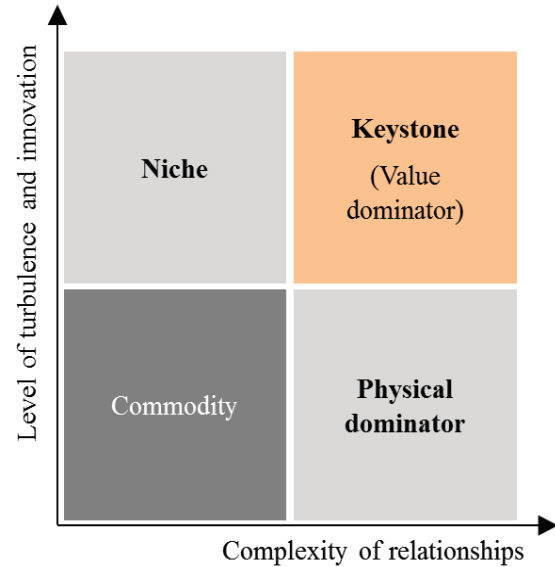
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*State of the art of ecosystem, business model and strategy:*

This segment explains the state of the art of habitats, business models and techniques.

- *Ecosystems:*

First of all, it is important to understand that digitalization reproaches businesses. The complexity and intensity of the relationships among these organizations this describes a market environment as "a complex network composed of an interconnected community of companies. "However, an ecosystem is at the core of a strategy for modularizing the input of the proposed system and for what kinds of companies it is supposed to provide." Can company contributing to consumer value creation in terms of products or services is included as participants. It is also important for habitats to converge because one organization can be in many ecosystems. also because the organization of the industry today is widely distributed among many firms, is becoming important [2][3]. According to the evolution of biological ecosystems can be viewed in the same way as they interact with humans, since they depend on one another. Even rivals, consumers, regulatory authorities and other stakeholder who indirectly control the systems are a part of an ecosystem. This suggests that an enterprise should consider not according to the value chain anymore but in environments and the place the corporation holds in an environment. Able to achieve a high level of innovation and the difficulty of the business interactions as shown in Fig. extracted from the IT Sector, has identified the four basic forms of environment strategies.



**Fig. 1 Types of ecosystem strategies**

The keystone is a node in the environment as one of its main tasks is to enhance environmental quality. Only a small part of the ecosystem is a keystone and the environment can also thrive under heavy disturbance and creativity with devices and instruments. In other words, a keystone defends the environment from destruction in order to ensure its survival. Niches constitute the majority of an ecosystem, but they are identical to the ecosystem's material and are a key factor in the enterprise. The niche player is attempting to specialize himself and differentiate himself from the other industry business companies from a strategic standpoint. Unlike the main pillar, the actual dominator takes over much of the landscape and performs other functions including habitat niches. The value is created primarily by the physical dominator, but because joint value creation fails, it leads to a lower innovation level [4][5].

Commodities are the final position, but this reflects companies competing exclusively across price and volume. Under this is not a long-term strategy for a

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company. In fact, the direct connection between the various companies at network level must be addressed, apart from the strategic position in an ecosystem [6]. To order to create competitive advantages, the location between upstream-and downstream operations play a vital role. The competitive benefits of the focal enterprise are improved if they are able to manage problems within upstream operations—both businesses supplying focal enterprise components. On the other hand, downstream operations, often known to provide the focal firm with complements, do not provide a competitive advantage in the event of challenges. This can be seen as the logic between niche players, while keystones try to combine the complements to create the customer's value. By comparison, the approach of a physical dominator will aim to combine vendors internally to prevent economic disadvantaging conditions [7]. The context of market environments the business model plays a very significant role.

*Business Models:*

For a business ' growth and productivity, creativity has always been a big lever. Until a few years ago, innovation was considered appropriate for competitively competing on the market in research and development practices aimed at creating and developing new technologies and products. Nevertheless, in many industries at present there is no focus on purely product and process creativity. It's here that business models play a part. While literature explored the business model term for several years, there is still no commonly-accepted definition. Relevant background implementations for this paper can be grouped approximately in two areas of research: technology and invention and policy.

While literature explored the business model term for several years, there is still no commonly-accepted definition. Relevant background implementations for

this paper can be grouped approximately in two areas of research: technology and invention and policy. As a representation of technology and innovation in the science field, use the business model to illustrate how technical interest can be obtained. Therefore, they describe a business model as "the heuristic logic that connects technological ability with economic value realization". In addition, the business model "has two important functions: creating value and collecting value". The benefits of open business modeling that leads to value generation through the use of a growing number of internal and external principles [8].

Therefore, the concept of an open business model allows businesses to benefit from intellectual property transactions that have not yet been matured. The open business model may also provide the incentive to provide long term competition in comparison to shorter product life cycles and related high investment costs in innovation. Innovative technology promotion efforts and technical limitations can also be assisted by a well-designed business model. Technology with mediocre maturity pursued through a great business model might be more valuable than technology with an average business model reaching maximum maturity. Inspired by the study suggests that "a business model articulates rationale, provides data and other evidence to support a consumer value proposition, a sustainable sales and cost structure for the company providing this value". The review also includes the following version:

As already mentioned, business models and technological innovation intersect together. The business model framework, however, is clearly distinguishable from technology. Path-breaking technological development, of course, makes for new business models but innovative business models, like the just-in-time production mechanism, can also exist

without technological development. It is a challenge to build an appropriate business model and suitable solutions for industries that are affected by digitalization. The goal is to establish an integrated connection between the impact of technological developments on changes in business models and the organization of technological development. To solve these problems, managers may use existing methods or experiments to explore the possibilities of technology for forward-looking business models, alternatively they may take a view of the ecosystem [9].

Strategic problems business models. Aspects including consumer, customer interest and the market logic will be explored with the reference to the Peter Drucker principle. In comparison, the term business model is used interchangeably with the term strategy, however, these are two terms that have an influence on various levels. The business model typically forms the mediator between the strategic and the operational stage. The definition of the dream and mission of a company takes place at the higher standard. There is an especially extensive study of the difference and relation between the business models, Strategy and Tactics. The organization model according to its description is a collection of ' unique

management choices' and the implications that this has to be done. Each organization makes decisions that have consequences. Consequently, each organization has a business model [10]. Unlike the policy, it seems noticed and partially imitated by the business concept for external parties. The strategy matches the business model of the company and only appears fully visible in trivial situations.

**Fig. 2 Relation between strategy, business model and tactics**

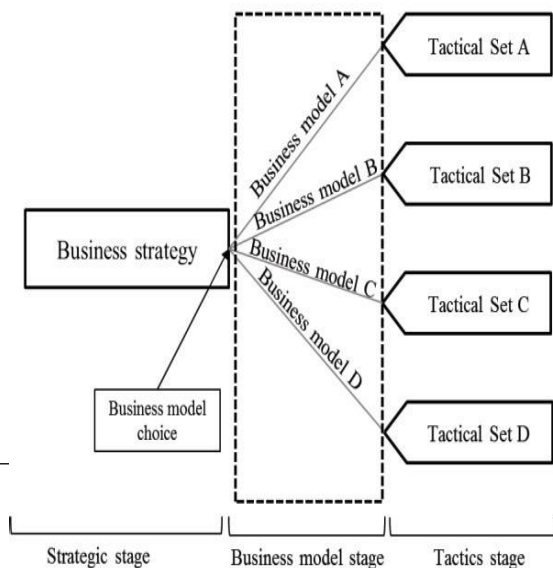
*Strategy:*

The approach determines the purpose of an organization, but its meaning and context are interpreted differently. From a different viewpoint: policy is not organizational perfection. Benchmarking amongst rivals would result in market consolidation and the various businesses would sooner or later become indistinguishable.

In addition, maintaining the distinctions in an organization—the results, in various ways, of "different activities from rivals or similar activities." The competitive position is defined by three concepts.

- Creating a unique and valuable position
- Focus on core competencies consistent with the position
- Find synergies between activities to prevent imitation

In order to make that more clear, "a genuinely strategic decision is only taken in the context of three operational aspects— where meaning is applied, how replication is treated and used and how perimeter is defined". These options have a competitive advantage over the long term and short-term challenges such as organizational management are not considered strategic. The aim of any strategy is to create sustainable value. This needs to be protected by increasing the complexity of copying to avoid the



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interest generated from imitating. The scale of the organization, the degree of vertical and horizontal integration and diversification, have to be specified in order to link these two elements [11]. There are also different concepts, approaches and business models, but closely related. Strategy decisions provide the basis for the business system or, in other words, the organization's operating model.

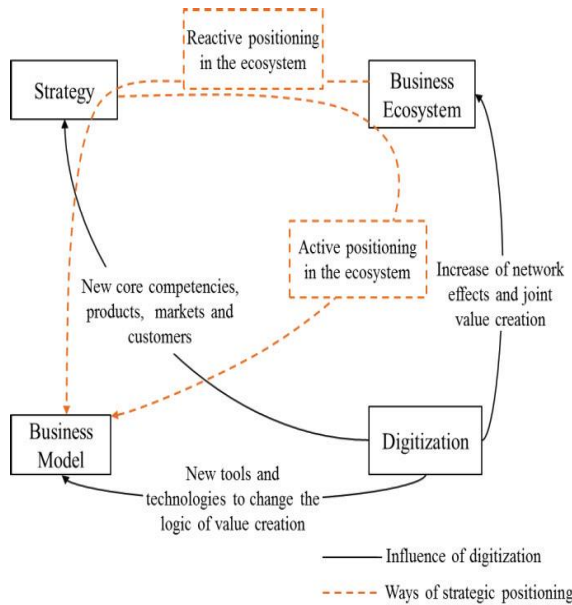
The business model needs to be evaluated and applied using isolation strategies to protect the competitive advantage generated by a policy against imitation. There is a limited operational collection when a business model is applied. It ensures that particular elements of a business model can be modified—for example, the option of a product or the price setting. Such choices are based on a business model's tactical stage and are illustrated in figure 2. There are specific considerations to be addressed when adapting the previous approach principle to the keystone or shaper role in the environment. First of all, a plan for formation needs to be effective with a critical mass of participants. This can be achieved by telling the future partners transparently the possibilities of the community, by setting standards for simple participation and by making investments in the shaping plan. Participants should also be conscious that the shaper has no involvement in competition but in collaboration with the environment participants. If they do this, they share risks and learn from each other.

Digitization becomes more important in terms of policy as it evolves and needs to be taken into account in formulating strategy. The Digital Strategy should be a "organizational strategy, conceived and executed by digital tools, not just a practical plan but also a value-based approach."

*Approach for the relationship between ecosystem, strategy and business model:*

That has to be addressed is how the relationship and impact of digitalisation, environments, policies and business models is. The video. 3 provides an overview of the relations between the components in the context of factors influencing and strategic growth styles. Digitalisation is first and foremost the main driver for market reform and the management of the various sectors. Digital networks will interconnect businesses, customers and goods massively. This leads to increased network effects and a joint ecosystem value creation that offers end customer solutions. Digitalization also has a major strategic effect. When openness increases, competitive advantages are difficult to establish and entrance obstacles for new companies are reduced. Because the risks of switching are minimized, the negotiation power is transferred from supplier to end-customer. There are new markets, on the other hand, which can be solved through digitalization. Of fact, the main competences can also be changed if, as opposed to the current situation, the service given to the consumer varies.

Digitalisation often offers new strategies, such as big data or networks, to develop new business models to achieve the strategy's goals. The turn of fixed cost into variable costs by digitalisation is a critical element in the cost structure of a business model. There are two ways to change a role in an environment via a strategy in the described scenario. The first step is to look at the complexities of the environment in the formulation of policy. This ensures that an organization's approach is no longer limited to the company's internal dream, but applied to the company's environment: ecosystem. Through the implementation of one of the general environment approaches described earlier the company actively places itself in the industry.



**Fig. 3 Simplified interaction between ecosystem, strategy and business model influenced by digitization**

Secondly, the reactive positioning of an ecosystem is described. It occurs if an organization has the potential to become a key element, for example, and the underlying environment includes the organisation. In that case, the approach of the company must be tailored to the "required" position of the organization. All strategies lead to new business models, as new strategic choices often lead to new opportunities for business models. The maturity level of the business model of an organization is another important factor. To implement a strategy, the company ought to integrate or already see its business model as a platform in the innovative process.

*Applying the approach to the manufacturing industry:*

The development of long-lasting and industrial-intensive capital materials characterizes the

manufacturing industry. For turn, these products are sold to other firms in a corporation and as manufacturers of tools, appliances and parts in the value chain manufacturing company. Product and technical advancement have traditionally been the priority of manufacturing companies and cost reduction whenever possible. We also provide resources to complement and raise margins for their goods. Digitalisation is approaching and affecting this sector in the form of the industrial Internet or Industry 4.0. New options exist and the evolution of habitats is evolving as mentioned in the previous chapter. Various companies already have the market and the physical leading approach, and examples for commodities-based enterprises are also available. Schunk or Pepperl & Fuchs are mainstream niche companies, one specializing in the manufacture of grippers and the other in the sensors and actuators market.

You can use new business models to change your approach and boost the experience of your customers such as data-based services or platforms. Several insourcing awards were won by Stihl, a company selling chain saws and garden equipment. We seek to map the entire value chain on their own and can thus be viewed as a follower of the physical dominator approach. Digitalization provides the means for creating smarter goods and for instance for linking them to protective clothing. The manufacturing of solar panels is one field in which it is obvious that materials are not an attractive policy. Originally a market where the source of competitive advantage was product and technical advances, it soon became a commodity based on prices. Several companies have disappeared due to cheaper workforce production being outsourced to China. The development of key elements is a new development in the manufacturing industry. The need for standards and tools in the different industries is taken advantage of, but also

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environment security against the entry of third parties, such as IT companies. The companies Firmnet 365 and Siemens serve as practical examples that explain our previous assertion of two ways in which a business should position itself within an ecosystem.

Farmnet 365—a division of the Class machinery manufacturer—has chosen to take an important role in the agricultural machinery sector as the backbone or shaper of the ecosystem. The idea of providing services to farmers through a website that has access to data on the used equipment was actively promoted. The utility applications of the company members use the knowledge to provide value deals, for example, to demonstrate how a field should better be cultivated depending on weather and climate or to measure fertilizer rates based on historical yield. Unlike this case, Siemens is an enormous company that includes electricity, manufacturing, logistics and healthcare. Siemens has the necessary requirements to become the keystone for what consumers and the market is planning. In collaboration with SAP, they provide an integrated cloud platform for industrial customers that can handle data-based services, for example.

*Roadmap for manufacturing firms:*

Figure 4 describes a competitive market positioning strategy, which takes account of the effects of emerging developments and takes into account the introduction of an appropriate business model. The effect can be an alteration of a current environment and business model status or a new eco-system state, together with the establishment of a new business model. The basis for this method is digitization and in the long term, income can be gained above normal. The combination of hardware to computer applications, modularization, personalization and networking with other products and services are

strategically relevant. Network of human, machine or manufacture systems, like cyber physical systems, enable them. The software and hardware modules can be accessed from platforms, such as marketplaces or development platforms, through a life-cycle environment and communication tool.

Technology networks boost the capacity to collaborate with buyers, vendors and partners, over and above a pure buyer-seller partnership. The consumer can also engage in the technical growth of the product dimensions of the marketplace. This means that an organization's approach is not limited to the company's internal point of view but applied to the company's environment: the world. It allows the company to take an active role in the sector through the modification of one of its former general environment policies.





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introduction of a service-based differentiation approach, Trump thus wins a groundbreaking position as central. The third step is to attain the strategic position, which can be accomplished only through an appropriate and suitable business model. Strategy involves creating business models and if necessary redesigning them. In innovative workshops, or encouraging by existing business model trends, ideas of business models should be created, in Spanish. The further phases are the development of business models and alternative designs. A viability analysis shows the tools for future business models that are available and required. Instead, bad concepts and designs of business models can be dismissed. Business cases must later be developed, evaluated and taken into account the entire business case regarding their economic efficiency.

On the basis of the study, simulations are built for the remaining principles after further defining unacceptable business models. In the manufacturing sector, Trump also uses software as a service to tap into new value systems. Trump recently implemented Axoom, a global open company network, which links devices, machines and workplaces, for the preparation of production processes. The partnership and interconnection of products from various manufacturers (product as a service) is an important advantage of this network. The fourth step is to implement a new or revised business model. The future corporate culture and improvements should be discussed and shared during the planning phase. The business model is applied through the reporting and control procedures. If there are any incoherence's during the analysis process, iteration loops must be applied and potentially involve strategy adjustment.

**CONCLUSION**

Strategy is the foundation for business models, but because ecosystems inevitably emerge, the

development of a strategy for the company itself is not enough. The world around it and its concentrate company's role must be changed. The manufacturing sector in particular must face serious future developments—the main or shapers are expected to allow the business to grow in a planned and sustainable way. Their mission is to conserve their habitats and provide the resources and means for the production of a shared good.

A blueprint is presented, how businesses should change their approaches and adopt business models in order to implement their policies. Work in this area is early, and a variety of fields of science need to be better understood. Firstly, it is important to define the clear requirements for the role of manufacturing companies in an environment. A comprehensive study must therefore be built on the strategic aspects associated with the environment approach and a company's internal strategy. In fact, a formal evaluation is important for the viability of the plan. The question of which business model is suitable for the specific situation in an organization when it comes to the implementation of the plan and why does this require investigation.

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