**Industries emerge and perish – marketing view by a case**

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**ABSTRACT**

This paper explores a country that has lately loose its main industries due to on-going industrial revolution. The study aims to understand the laws behind in the perishing and emerging industries. The viewpoint in this study is on the technology development and the consequences of it to a country's industry and policies decisions. The discussion is mainly occupied by the industrial and classical national economist leaving limited space for marketing professionals. The question is how we can be prepared on-going and coming industrial changes. In this study, I am employing Deleuze's concepts to create a framework for understanding how the industrial changes occur. The framework can be employed to understand how various industries die and others start to flourish.

**Introduction and literature review**

Status of the Finnish economy

Finnish economy has suffered from the loss of the market in its major industrial areas. Newspapers' paper consumption has declined rapidly due to the online internet services offered by major newspaper houses. Finnish electronic industry, consisting mainly of Nokia, was not able to compete against its rival coming mainly from Far-East and USA. Among others, Apple, Samsung, and Huawei were providing Linux-based mobile phones while Nokia's plans to stick in Microsoft Windows-based systems failed. Nowadays, Nokia's mobiles surcease to exist. Lately, HMD started to sell mobile phones by the name of Nokia. In this situation, Finnish society and industry are searching means to maintain and develop its overall offering. It has been reported that also the export volume of Finnish machinery industry has declined remarkably since 2010. Figure 1 and Figure 2 shows how the Finnish Industrial Production has developed between 2005 and 2018. Lately Finnish economy has started to recover mainly due to the growth of the global economy.

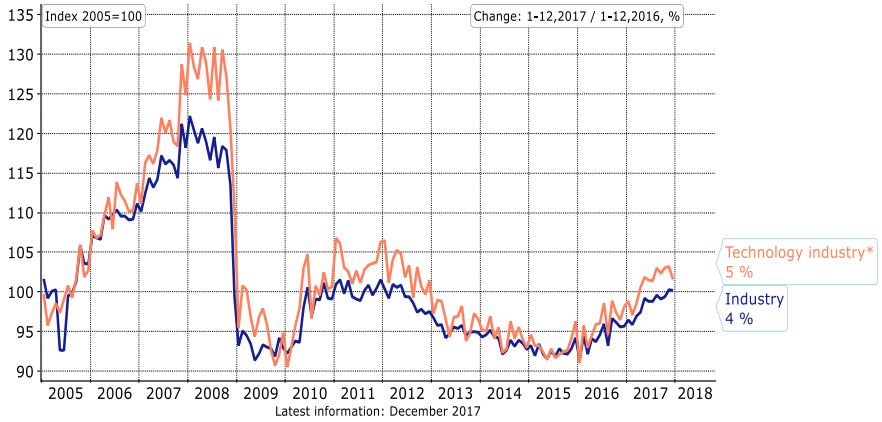



Figure 1: Volume of Industrial Production in Finland (Source: Finnish Technology Industry Federation)

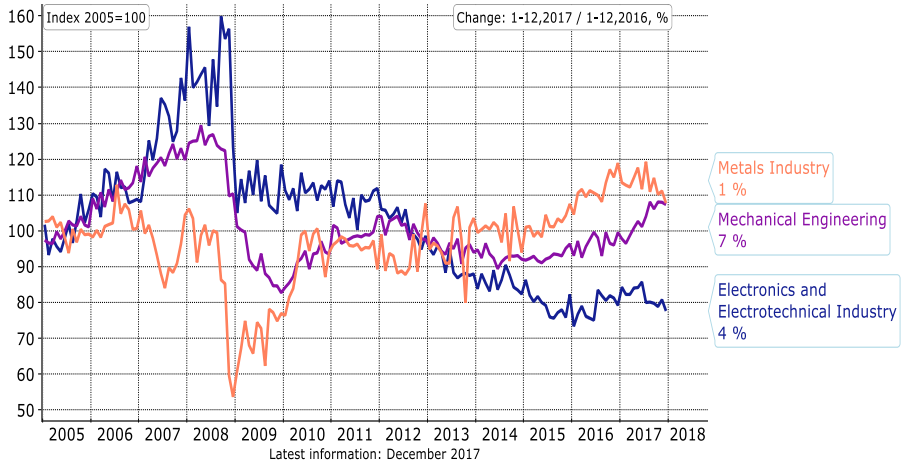



Figure 2: Production Volume of the Technology Industry in Finland (Source: Finnish Technology Industry Federation)

Earlier resolutions to Finnish export problems

The discussion of how Finnish industry should be developed has mainly been led so far by the political economist. In the past, the Finnish export problems have been solved by the devaluation of the Finnish earlier currency (FIM). However, since Finland started to be a part of the European Currency Union, Euro, the devaluation is not anymore an option. The plan in 2016 and 2017 has been to emulate the devaluation by lowering the unit labor cost by increasing amount of the working hours without increasing the salary. The critics that have been raised is that if there is no market then how the declined price can help the business as there is no demand for these Finnish products. It has been argued that the focus should be on creating new industries for Finnish society.

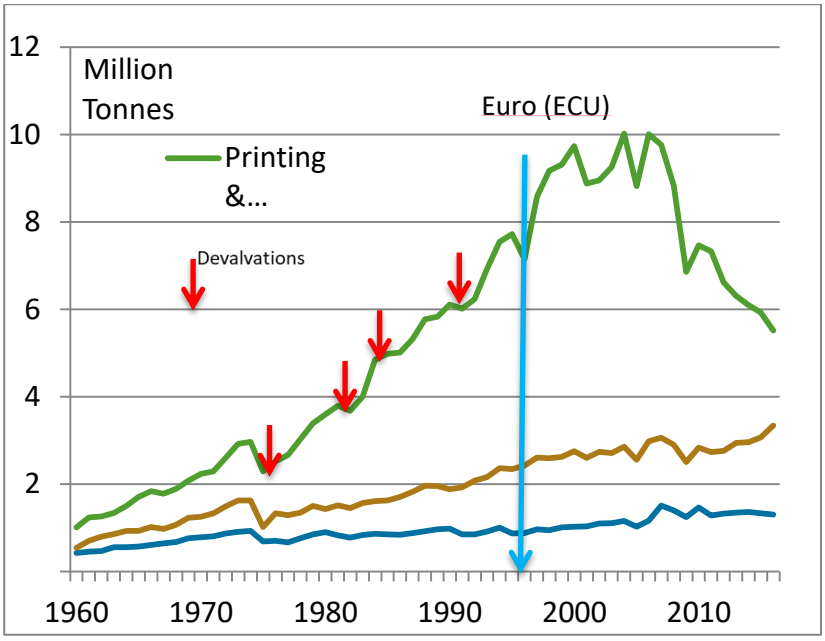



Figure 3: Paper and paperboard production in Finland (Source: Finnish Forest Industries Federations)

Earlier resolutions not applicable

The roots of the problems of the Finnish economy are in its industry that has not renewed away from the declining markets. If the market is declining, it is not effective to try to increase the volume by lowering the unit labor costs. The situation resembles Drucker's (2011) description of the changes in the industry that leaves much space for new players as the old ones are not willing to react or cannot react on the industry changes. Usually the expectation the business continues as it has occurred for a long time. Drucker's writes how the steel industry did not accept Mini Mills' recycle steel concept, and, therefore, these new players were able to develop their businesses for a long time without the interference of the traditional steel industries. Actually, it leads to that traditional steel industry diminished.

Late market changes

The change in the market is more profound than just the loss of the market of the industry. The industrial development is going in the direction of the power of crowd that is also enabled by various new platforms based on the virtualializtion and the development of the manufacturing, especially 3D printing. These developments revolutionize the design of the products and the distributions of them. The example of these are the latest DevOps models speed-up the development and distribution to occur in seconds in a virtual computing environment. The crowd power means in practice that closed, firms specific, cannot beat against the solutions from open source or open innovation representing crowd power communities. For example, Tesla has not revealed its patents to be used by the third parties. These ecosystems, ecosystems platforms, and open innovations will change postindustrial mantras such as cost-conscious, effectiveness,

productiveness and customer-centric values to be more capability and community-centric (Letaifa, 2014; Pitelis, 2009). The overall development of the technologies that revolutionize the distribution and design will change the industry. Figure 4 shows the rapid development of the new industrial sectors that are related to Information Technology and Consulting Engineering. These two industrial sectors describe the strong development of the service sectors that rely on consulting and IT services.

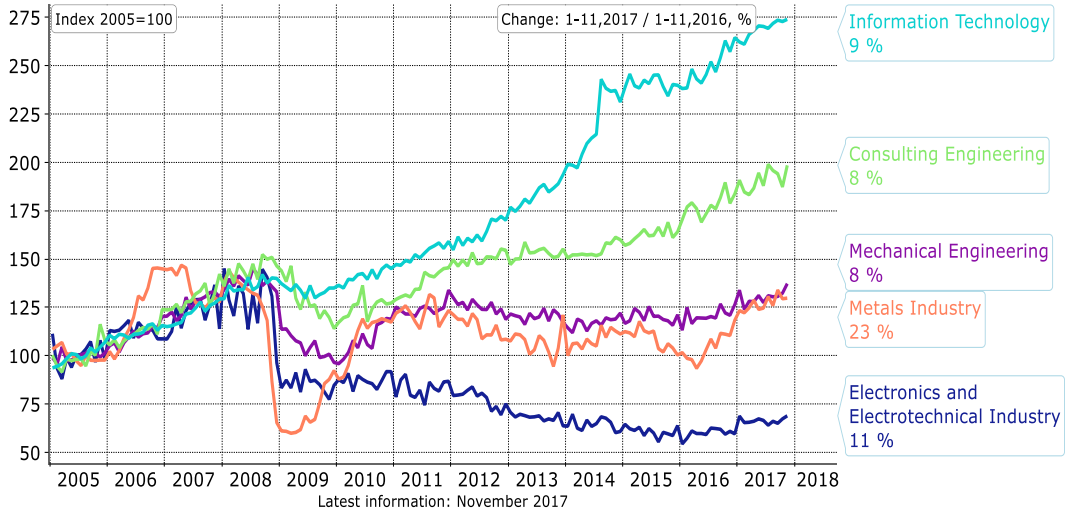



Figure 4: Turnover of the Technology Industry in Finland (source: Finnish Technology Industry Federation)

Discussion on the competition based on the IMP literature

According to Turnbul et al. (1996), extant studies in the field of competitiveness and competitive forces have been dominated by the contributions of Porters (1981) and Peters and Waterman (1982). The topics that have been discussed on market forces are related to productivity, market share, research and development, economies of scale and concentration on knowledge-intensive and high value-added products. Classic Economic Policy focuses on the searching balance between costs, usually labor cost, and the price of the demand, e.g., if demands decline then labor unit cost is declined in order to maintain or achieve bigger market share. According to Eilon (1999), Porter criticises the Classic Ecomic's view to compete with unit labor cost and manipulation of the currency courses. He continues also stating that Porter did not see the competition as a zero-sum game between the nations.

The viewpoint on the marketing has been on the companies capability to maintain and develop business networks (Easton and Araujo, 1985). According to them, the competitive position is based on competitive advantage, co-existence, cooperation, conflict or collusion. Their methodology is based on the mapping, comparing and contrasting the perceptions and behavior of suppliers and customers in terms of identifying and characterizing competitors, examining competitive strategies and analyzing inter-competitor communications through technical and marketing networks. These thoughs of Easton and Araujo (1985) lead to a view of competitiveness as a dynamic process over time. The active rivalry between firms within a product market occurs simultaneously with competition coming from other product markets. This "competitive field" transcends the narrowly defined industry or product market. Hence, the industrial economist's paradigm of the market structure-conduct-performance relationship is an inadequate representation of the competitive forces - and real determinants of competitiveness (Easton and Araujo, 1985).

New industry creation

These trends lead to the question following question: how the Finnish industry should be developed and how to meet these requirements of being a dynamic process over time? The industry creation is based on the technology and market development. The steam machine creates a new set of the industries starting of the machine construction of the steam engine. The new era in the travel industry was the consequence of able to make steel based vehicle combined with the steams engine. The next era of the industry was created by combustion engine together oil industry. The third industrial revolution was a consequence of the silicon chips. The importance of the silicon ship was seen in telecommunication, development of the computing power and lately on the creation of the webscale industry. Later these technologies change the way how companies interact with each other, e.g., silicon ships based communication enable the outsourcing of the companies hierarchies. The question is what the next technology trend is that creates a new set of industries.

**Framework: A method to create methods for analyzing industrial changes**

In this study, this researcher employs Deleuze's concepts for studying the industry and change in the industry. Previously Deleuze's concepts have been employed, for example, in architecture and anthropology. This study aims to create a toolset to describe the changes in the industry that can be further analyzed with the other toolset such as IMP's relationship models.

Concept of assemblage

An assemblage refers to territory, its signs' regime, and pragmatic system including forces, desires, i.e., processes that deterritorialize and reterritorialize the underlying structure of an assemblage. Apple iPhone's and Google Android's ecosystems caused the Nokia Symbian and its ecosystem's elimination from the market. In practice, these new ecosystems that were employed and developed by many information technology companies deterritorialize and then reterritorialize Nokia's Symbian that had its roots in telecommunication. Global assemblages emerge over time and may involve new forms, reformations or shifting forms (Collier & Ong, 2005; Deleuze & Guattari, 1987).

Concepts of repetition and difference

The two other concepts that are useful to explain the changes in the industry are related to Deleuze's repetition and difference. According to Deleuze, the repetition is a difference without concept, i.e., it has no direction to point. It is transgressive with not be confined by the norms and expectations, but with the aim to break free of those. Example of this that, any of the inventions are employed outside of the original purposes such as the steam machine that was developed originally for emptying mines from the water. In order to employ the repetition, there is a need to amplify the difference. Example of the repetition and difference is that the first vibrator was steam engine based. The repetition and difference cause the new ideas, innovations, and industries to grow rhizomely searching new way to expand, deterritorialize and then reterritorialize existing solutions. The technologies have a line of flight, a span of their lifetime, that the repetition and difference can extend. An example of this the nuclear power stations that are still steam engine based solutions.

Analysis of Deleuze's concepts

In order to study the changes in the society, the new potential and extant assemblage are needed to be analyzed in terms of if new extensions can be created for the rhizome or not. Lack of the repetition and minimal difference can be a sign of apathy of the assemblage in the question. If there is no repetition and no difference, then it can be proposed that this assemblage can be at the end of its lines of flight and it might be needed to be replaced by other technologies sooner than later.

Newspapers' paper is replaced by the internet technology that employs mobile phones, computers, easy to edit and publish IT system. Internet web pages can be accessed nearly and increasingly by most of the people globally. However, internet technology applies to Moore's law and has its own limitations. There are

already signs that the impact limitations of the law cause the scaling down of the development and innovation speed of that technology. The limit of the light speed cannot be exceeded, and the laws of the quantum mechanics start to affect negatively making difficult to keep the phase of Moore's law. The 3D transistors extend the lines of lights of the silicon chips, but ultimately the laws of the nature are not easy to break.

One of the propositions is that the greater the difference, the longer is the lines of the flight due to repetition. Rhizome describes that the new connection, new thinking, emerges like roots without clear path but navigating through the soil expanding in various directions. It can be discussed if that this is how the technologies also create industries. Although the technology employed previously is replaced by other new technologies, many time new technologies continues its line of flight. Table 1 gives an example of the technology that caused the industrial revolution and has mainly perished. Table 2 gives an example of the technology changes that are on-going.

Table 1: Lines of flight of steam engine industrial revolution

| Assemblage | Deterrotirolize | Reterrotialize | Repeat and differentiate | Rhizome | Lines of flight |
|---|---|---|---|---|---|
| Steam engine | The use of horses and wind and related knowledge areas and skills | New power source with new knowledge areas: materials, material strengths, machine construction and industries | Aeolipile, pumping, piston, high-pressure, horizontal stationary, road vehicles and marine engines, steam locomotives, steam turbines | New industry players in transportation, materials, power production with coal, new waves of migrations, the industrial revolution, the cause of the change of the industrial structures | Still in use in some of the areas: e.g., steam turbines |

Table 2: Virtualization technology

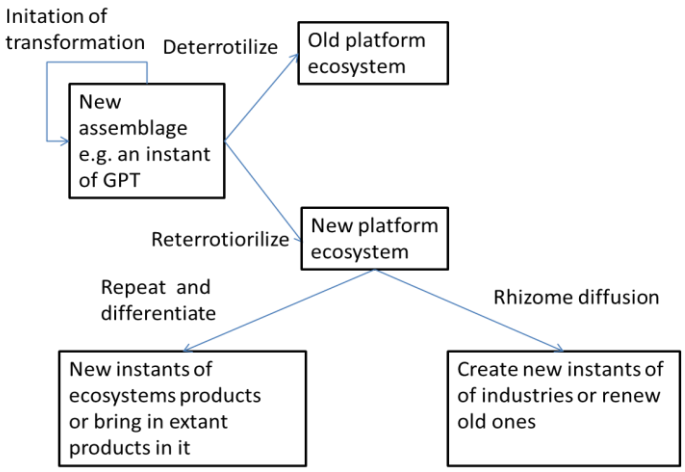
| Assemblage | Deterrotirolize | Reterrotialize | Repeat and differentiate | Rhizome | Lines of flight |
|---|---|---|---|---|---|
| Virtualization of computing power | Extant computing devices such as switches, servers, computers, other microprocessors based devices. The way of the distributing these devices, maintain them, etc. | New IT base approach, running in standards HWs, distributions in seconds from computing centers, thinking of reliability | Grid Computing, IaaS, SaaS, PaaS, Virtualization of Traditional IT, Telecommunication, Healthcare devices, Use of virtual computing in global delivery models | Creation of webscale industry, platform, enables global social media, global cooperation | New business areas use the virtualization. |

**Conclusion**

The inspiration for this paper came from the changes that happened in the Finnish industry since 2008. This radical economy transformation was not the first time as the Finnish industry change radically at the beginning of the 1990s. In this paper, this researcher tries to seek some of the ideas about how and why industries based on technologies emerge and perish. Some of the technologies were studied with the help of Deleuze's concepts. Based on this study, it can be proposed that new ideas and technologies to be evaluated with the help of the selected Deleuzian concepts can bring new ideas and thoughts about the changes in the market. Extant technologies are needed to look critical to see if these technologies have still capabilities to repeat and differentiate.

The Deleuze's concepts and the example given above can be summarized in the following figure (see Figure 5). Figure 5 describes the relationship between the Deleuze's concepts in the context of the industries creation and perish. New assemblage, for example, new General Purpose Technology (GPT) (e.g., Bresnahan, 1995) such steam engine or virtualization starts the renewal of the industry with deterrotiolizing old ecosystems and reterrotiolizing them with a new ecosystem's structures. The success of ecosystem depends on its capability repeat and differentiate itself and diffuse its rhizomes into the new industries or renew the old ones.

Figure 5: Deleuze's concepts in the context of industries transformation

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