

SHOCK LOADING – UNDERSTANDING THE IMPACT OF EXTREME MARKET FORCES

Koplyay T., Hurta H., Jazouli A., Malouin M. *

Abstract: In this article, the authors are going to examine shocks in the market and how they change along the market life cycle. Later on they describe the reaction of firms and alliances to specific shocks. Focus is on firms and alliances as the market evolves. Early firms withstand shocks better. The question is: why? And how do structural forms evolve to change characteristics of survival. Then the special case of social media delivered shocks has been developed. Additionally, how social media shocks are different from other shocks are discussed. Whether firms are prepared or not? After completion and comparison of few cases, the conclusion is that social media has a crucial role in some cases and globalization magnifies the effects of social media. To some extent all shock loads are about the speed at which they happen and our inability to forecast or to react to them.

Key words: shock loading, life cycle, alliances, social media and current problems

DOI: 10.17512/pjms.2018.18.1.12

Article history:

Received July 27 2018; Revised November 20, 2018; Accepted December 04, 2018

Introduction

Euroregions Value chains are the final expression of strategic alliances that accompany the firm during the market life cycle. They range from early stage ecosystems to tornado period platforms, and finally begin to morph into proto type value chains with the emergence of clusters. The first three types; ecosystems, platforms and clusters are basically nonlinear, complex and survive shock loadings with relative dexterity, whereas value chains are linear, rigid and fragile (Koplyay et al., 2011) therefore, could be easily ruptured (Figure 1).

Both complexity and nonlinearity of alliances progressively diminish as the market evolves (Koplyay and Mitchell, 2014). Nevertheless, these features are strongly correlated (as shown in Figure 1) with the life cycle and evolve from an early emphasis on effectiveness in positioning the firm in the right place at the right time to anchoring the firm to chosen position in late markets and executing an efficient implementation strategy against the market dictated signal of price taking, which leads to the singular strategic choice of cost leadership (Koplyay and Mitchell, 2014).

* **Tamas Koplyay**, Prof.; **Mario Malouin**, Université du Québec en Outaouais, Department of Administrative Sciences, Gatineau, Quebec, Canada; **Hilda Hurta**, PhD, National University of Public Service, Faculty of International and European Studies, Budapest, Hungary, **Abdelkader Jazouli**, Szent Istvan University, Hungary, Management and Business Administration Doctoral School

✉Corresponding author: TamasMichel.Koplyay@uqo.ca

✉Hurta.Hilda@uni-nke.hu; Jaza01@uqo.ca; Mario.Malouin@uqo.ca

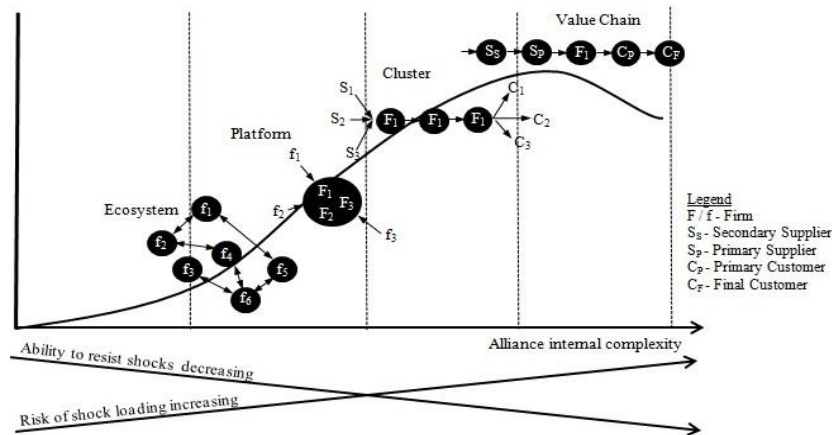


Figure 1. Risk of shock loading and the ability to resist shocks along the market life cycle of alliances

There appears to be a natural selection process in the market that allows structural shapes to emerge that best cope with existing dynamic conditions. In early market the choice tends towards structures that survive the uncertain and turbulent state and progressively these structures evolve towards simpler structures that are well adapted to delivering efficiency and productivity for a more stable market.

The process shifts from selection for effectiveness (survival) to selection for efficiency or productivity based competition. There are trade-offs in the sense that emphasis on early stage survival creates relatively inefficient firms but allows them to cope with frequent shock loading whereas the late stage focuses on cost efficiencies which nurture competitive firms that are vulnerable to infrequent but more damaging shock loadings. From survival through repositioning due to pressures from market forces, to survival through subduing the competition through enhanced efficiency of operations. The continuing cycles of focus on efficiency in late markets create a tight fit with the environment and achieve a high degree of fit or adaptation to given specific circumstances. But there is a price to pay in the sense that the ability to react to and absorb shock loadings diminishes to the point where major damage may result from extraordinary events.

In this paper, the firm behaviour at the various stages is explored. They associated in previous papers (Koplyay and Mitchell, 2014), market complexity is defined as the structural relations among all firms in the market and alliances as the connectivities among firms in a specific alliance; in early market phase, alliances assume nonlinear and redundant structural forms that help survival and allow for progressive adaptive modes as turbulence shakes the market; and later the forms flatten into linear shapes that promote efficiency of operation but present challenges when markets spring surprises through excessive perturbations known as shock loading.

Market Players under Shock Load

In the early market stages, small companies struggle to gain footholds through innovative and breakthrough product designs (i.e. Ionalytics (Bonislawski, 2012)). The connections are weak and flexible, a supplier is easily replaced with another one and defecting customers substituted with the others coming into the market. This is a primary reason why a small, immature company can withstand a shock because there is inherent duplication, a capacity to switch assets in the supply chain and defeat the perturbation by market position displacement. The market forgives such inefficiencies because margins are rich and are accompanied by high growth. Basically, the market drags you along and forgives your mistakes, unless you fail to secure your operating funds or fail to target the proper customer demand profile. At this point any attempt to lock in customers is futile, early market customer is only retained by the cutting-edge product. Customer recruiting, and retention resides with superior product design and the loss of customers is usually not a major issue as the market growth always provides new ones. The only time market traction could be lost due to customer defection is if the particular customer is a lead one with strong market credibility that is the calling card for future sales of the firm. For example, milk producers, wine growers and other suppliers can get involved such situation with retailers like Tesco, Sainsbury or Wal-Mart. Other examples can be military or space equipment of which the government is a major customer (Colissoin, 2013). But a country also can be in this position like nations in Africa because they mainly supply China with mineral deposits (MacNamara, 2010). The tie becomes a lot more critical as the rise and fall of the young firm is now inherently linked to the success of this major client. In early markets, the intuition and experience carry the day with very little actual analysis or collection of information being done. The firm reacts to events and devises a quick response that seems to offer adequacy. The focus is entirely on the risk saturated and information rich market environment. So early market shocks occur due to lack of appropriate information processing and interpretation. The information challenge during this period becomes one of being able to simultaneously follow both external market conditions and internal organizational growth. As promising strategy for the firm, it will aim to replace the entrepreneur with a professional manager and establish a well-functioning, forward looking marketing department that is ready to properly profile the major change in customer demands (i.e. Cisco, Yahoo, eBay, Google; (Hoffman, 2013) or Twitter and BigCommerce (White, 2015)). The firm at this point should also introduce concurrent engineering that acts as a braking device on development of disruptive products. Concurrent engineering also focuses internal decision making on reliability and quality, both of which are now sought out by the customer. The future of the firm is embedded in the distribution channel. This embedding represents the first hardening of the ecosystem relationships. As markets evolve the individual firms naturally coalesce into groups – ecosystems – that offer advantages over competitors and a safe refuge from excessive competitive pressures. Furthermore, as the market

transitions into high growth mode once the early majority enters, the firm must choose particular sub-markets, as it cannot follow the hyper growth coming its way. The information challenge during this period is to react properly to market information (quality and reliability driven demand of the early majority customers) and many young firms cannot bear this loading because they lack a substantial expertise in the field of marketing (i.e. establishing the channels and adapting to the now fast-moving market). However, when the firms are confronting supply chain shocks they must monitor the newly developing multiple points of failure in both the supply chain, and in the distribution channels to customers. At this point the firm is reaching out to several customer groups and expanding its supplier base. This represents the initial transition point from vertical to horizontal marketing. On the other hand, this expansion leads to the hardening of ecosystem ties and to lack of flexibility to react to unexpected market developments and shocks. The firm cannot follow the explosive growth in the market, even with unlimited financing, and must select sub-groups within the broad spectrum of customers that comprise the early majority. It must carefully select and develop its distribution channels. For example, Boeing has launched multiple new models and services over the last decade because, Boeing needed to expand its market (by good marketing and better client service) in order to answer to the increased expectations. To cut cost, Boeing needed to find suitable human and financial resources and interactions with investors, partners, suppliers and clients (Boeing, 2016). The enterprises at this phase must choose partners and start to build a value chain with capacity to withstand shocks. Another excellent example is the Bombardier - Embraer - WTO challenge. The Canadian Bombardier wanted to develop its new C Series commercial jets and it requested support, in the form of subsidies, from the Canadian government (Silva, 2017). But, these subsidies could distort international competition in the sector, and violate multilateral trade rules like WTO. WTO consultations will ensure the required information and finally will improve the sector's current legal framework, and bring the aeronautical industry closer to establishing a truly competitive and level playing field. The ability to operate globally is fundamental to survival and it is also critical to have enforceable global rules (Silva, 2017). In the meanwhile, Airbus intervened and acquired the C series to be manufactured in the US and get around pending tariffs. This example also confirms that in the ecosystem the enterprises must find the appropriate partners to cooperate, to develop and to resist shocks. Strategy making (Figure 2), the most information critical function, has a dimension now called "enhancement" which requires the strategy choice to have beneficial consequences to value chain partners. For these reasons, there is a movement to lock in partners through devices such as exchange of key personnel, sharing of technologies and concurrent design of products, and even preferential contracting.

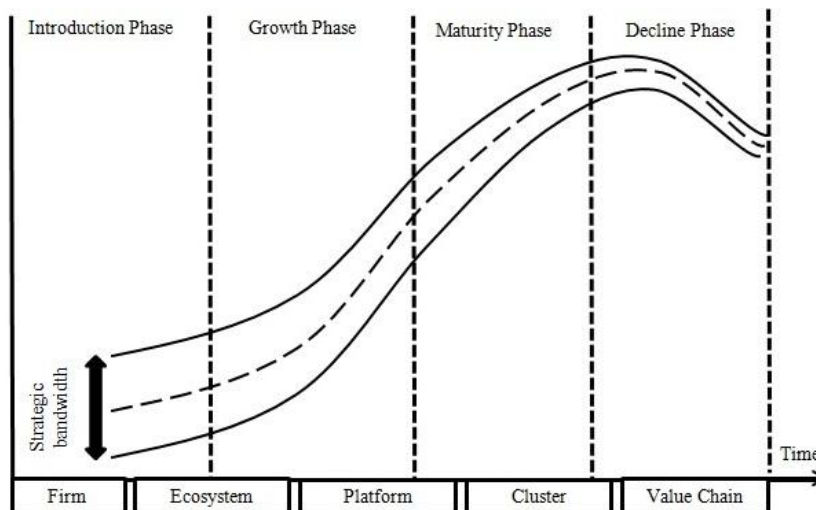


Figure 2. Strategic bandwidth along the market life cycle of alliances

Having invested in the creation of a relatively stable alliance that is a value chain prototype (platforms, clusters), the firm now must protect its investments. A major threat is the intrusion of disruptive technology that could displace the existing one in the market. For example, in the 150-year-old banking industry the digital technology (FinTech) is very much disruptive (Marous, 2017). While most consumers are using apps on their smart-phones (i.e. PayPal), banks are just lagging as they try to find new ways to serve their customers before the competition does it for them. Another example is the case of Uber's intrusion into the taxi industry (Berman, 2016). Here, for the lack of defensive barriers to entry, the Uber disruptive intrusion prevailed as it could overcome the local policies and rules protecting this industry. Only in New York did Uber encounter the first regulatory resistance to its freewheeling ways or the disruptive events in the rental and general housing sector by Airbnb. The governments want to regulate this activity and collect their share of profits, but can't seem to find the handle.

To prevent this occurrence, the firms form quasi-alliances to set standards which create technology platforms that allow only marginal and seamless technology improvements and lock out the disruptive ones. The Banking sector is trying to keep up with the new innovations by introducing its own applications (i.e. SmartFolio from Bank of Montreal or My Spend from TD Bank) (Berman, 2016). So, the Banks are imitating start-ups, their threatening competitors (similar to the taxi industry where established companies are announcing their apps as well), later on, they may try to buy them. These start-ups changed the clock speed (natural rhythm) of traditional banking, taxi industry and shock loaded it. The danger to the banks in this undertaking is that the entrepreneurial spin offs come back and put the competitive bite on them.

Clock speed refers to the speed at which strategy and other competitive moves must be executed to remain within the real-time changes in the market (Koplyay and Hurta, 2016). The more the market clock speed picks up the more likely that firms can't cope with sudden events. The clock speed of a firm lags the clock speed of the market, because they need to first notice, learn and then adapt. Two things determine whether a shock load does damage. (Shock is a relative term, what's acceptable to young firm maybe a disaster for the mature firm.) It's speed at which the blow happens the relative size of the perturbation and the preparedness of the firm to deal with it. If someone taps on a company all day, it may become annoyed, but not hurt. But if the same energy is delivered in one blow, the company may disintegrate. The example is VW, where emission fraud is now sanctioned by different countries at different times, mostly in sequence, but had these countries delivered their sanctions in parallel VW would go bankrupt (Hotten, 2015).

Platforms further solidify the market alliance structure, proceeding sometimes in unison to create cooperating competitor alliances that protect the established market players. This type of cooperation is referred to as cooptation. At this stage, it is not unusual to see breakthrough technology being bought and shelved to eliminate its threat to the market. The margins remain relatively high and market growth appears inexhaustible. This combination of factors tempts the entry of new competitors, and usually many of them with deep pockets will carve out a decent market space, unless the platforms have gained considerable traction already, which shuts the door to newcomers. In this phase, a true case of information shock may emerge, and although once in it the firm can do little, it can and should prepare for the eventuality by conserving resources at the first sign of market growth slow-down. There are huge concerns if the platform, which is an information management coordination exercise, is not properly handled, because standards slow down innovation at the product end, the technology becomes diffused, products converge, and competition shifts from product to production. A good example can be Intel. It missed the mobile revolution (e.g. smart phones), but now the company is trying to focus on the future and building a platform alliance for the 5G technology (Pressman, 2017). Ericsson acquired BelAir Networks in 2012 to expand its own portfolio and customer base (Ericson, 2016). Both are repositioning moves that begin as a market retreat then a new offensive. But market retreat can become market rout, as the market may not wait for the firm to carve out the new target niche. The information intensity and need to make the right market move decreases as the number of competitors' decrease. The possibility of a major shock diminishes with every consolidation of the number of players. Also, the flow of goods in the market becomes less complex with every transition from pure competition towards oligopoly, which can emerge as a result of intense mergers and acquisitions. The exit of competitors though failure or mergers and acquisitions need to be monitored. As the firm relies on spending its financial reserves to survive the storm, careful attention must be paid to the burn rate and all excess corporate baggage must be jettisoned or a partner with deep

financial pockets needs to be found. If financial reserves are deep, a strategic acquisition of weakened competitor(s) with great technology should be also pursued. And there is a special form of mergers and acquisitions, namely the leveraged buyout (LBO) that can be considered. It is quite a risky acquisition unless you know the target company well. Because in an LBO, there is usually a ratio of 90% debt to 10% equity, and very often it leads to time delayed shock loading, because they borrow money to buy the firm and later on, they force the firm to pay the loan back (Myers, 2016). Thus the LBO may limit the future strategic choices of the firm being acquired. When attention shifts to productivity and more linearity creeps into the platform that stretches the core platform to a cluster shape where only the input and distribution end remain nonlinear. The price competition, due to increasing price elasticity, begins to seriously flatten the alliance, but the strategic cost is the exposure to potentially terminating shock loading of the linear portion of the alliance. When the market unleashes the mergers and acquisitions activity in a drive for dominant market share and hence superior cost leadership execution, the ends of the cluster get flattened into linear shape as well and the final stage value chain emerges.

The key is to find the means to join the winning coalition if there is competition for standard setting. This can be achieved by stakeholder analysis of the industry and assessing the likelihood of success of the respective competing coalitions. If the eventuality of competition for standards setting is unlikely to occur, then the most important strategic move is to join the standard proposing coalition as early as possible to give the internal functional units of production, product development and marketing a chance to smoothen the ramp up to the new standards. An example could be the coalition of BMW and Toyota (Reed, 2017). They are sharing their expertise in order to create a hybrid sports car. Another automotive example is the R&D coalition between Renault and Nissan (Reeves, 2015). But if a unit wants to leave the parent company that could create shock loading. So a strategic tool could be a strategic weapon (Kościelniak et al., 2017).

EU can be considered as a form of alliance, a platform where one member leaving – Brexit – can endanger the future. Shock loadings induced by disruptive emerging technology will delay and rearrange the coalition formation, a good example is the recent new standard ISO 20022 in banking industry initiated by European Union countries which forced Canadian banks to undertake costly updates of their banking systems (PYMNTS, 2016).

In the late market stage, in the value chains, the upstream suppliers have higher volume break events than their downstream clients because their products are more commoditized, hence there is pressure for them to sell outside of the value chain to the client's horizontal competitors, good example of Takata corporation selling airbags to different Japanese auto makers. That comes with high risk and huge impact on several value chains when a shock loading happens (defective airbags) (Berfield et al., 2016). In the very beginning of 2017 Takata agreed to plead guilty and paid US\$1 billion in fines and restitution related to its ongoing air bag recall.

The airbag defect has caused at least 16 deaths and 180 injuries worldwide. And the recall affects 42 million vehicles just in the U.S., with 69 million air bags (AP, 2017). But we can also mention Volkswagen and the emission controls disaster creating a huge financial shock to VW that could endanger its future (Brunsden and Oliver, 2016). Especially now, because VW also agreed to plead guilty in January 2017, and they agreed to pay US\$4.3 billion in penalties (Schoenberg et al., 2017). This reaction put the scandal momentarily to rest, but in less than a day, the clouds darkened again as Renault SA and Fiat Chrysler Automobiles NV were hit with similar allegations of violating clean-air regulations (Nussbaum and Sebag, 2017). And in another two weeks Wells Fargo reached an even a bigger and worse scandal than VW. In this case bank employees opened accounts without customers' authorization, more over with a tricky process they made the customers pay late fees what meant millions of dollars to the bank between 2011 and 2015 (Colvin, 2017). It is worth noting that Volkswagen was not the first car manufacturer to have been caught using defeat devices. There were among others Ford, Honda and General Motors also (see Liwanag, 2015). And there were truck makers which were colluding on prices and the implementation of emissions technologies between 1997 and 2011 and the European Union hit them (mainly Daimler, DAF, Volvo and Iveco) with its highest-ever cartel fine of about US\$3.32 billion (Drozdiak, 2016). The Fiat CEO claims that regulations are murky and that do not mean the manufacturers are cheats (Nussbaum and Sebag, 2017).

This is a real control issue for all chains including Wal-Mart and Giant Tiger for example in trucking. The trucks that run constantly to resupply Wal-Mart shelves do so half empty as smaller and JIT inventories mean higher turns leading to more profits at downstream (Lu, 2016; Nguyen, 2016). So the half empty trucks need to be subsidized by the downstream components. Giant Tiger, a mini Wal-Mart, solves this problem by allowing the truck fleet to carry any products on the backhaul. As alliances evolve they must remain nimble and read the evolving market signs appropriately (see also Bailetti 2012). But on the way certain rigidity has crept into the culture of the firm. Figure 3 sums up the differences between decision making profile in early and late markets.

A value chain option illustrated by the supply chain strategy, is to secure a mechanism to achieve economy of scale, however it comes with challenges such as lack of coordination, inventory management and so on that require effective traceability system. The singular focus of this alliance is cost reduction through scale and scope and tight relations with as few chain members as possible guarantees delivery on this premise. Fewer chain members lead to better control, smoother interfaces and stronger exercise of partnership influence. But even a very successful value chain, such as Wintel, can pose threats to its internal components. In the Wintel chain Intel and MS captured almost 70% of the profits, thereby forcing Compaq into a volume strategy that it could not successfully execute, so it left the chain, acquired DEC and migrated to service provider status from a product focus.

Early Market	Late Market
- Most decisions makers inside company	- Most stakeholders outside company
- Few decision makers	- Many decision makers
- Faster decision process	- Slow decision process
- Higher frequency of decisions	- Low frequency of decisions
- High risk tolerance	- Low risk tolerance
- Low information intensity and content	- High information intensity and content
- Immediate payoffs	- Delayed payoffs
- Low information reliability	- Higher information reliability
- No standard decision making procedures	- Well established standards of analysis
- Customer / Product focus	- Production / Competitor focus
- Parallel / overlapping decisions	- Sequential decisions
- Leadership focus more external oriented	- Leadership focus more internal oriented

Figure 3. Decision making features along the market life cycle

It is worth noting that any member of the value chain becomes critical eventually and is hard to substitute. So when one firm in the value chain is targeted by an external force the whole structure runs to the rescue and tries to absorb the shock loading. There is external and internal shocks. An external shock can be illustrated by what happened with Merrill Lynch or Bear Stearns during 2008 financial crisis (to see how a society responds to a crisis: Kentikelenis, 2018). And due to this financial shock from external sources that threatened their survival they were acquired. And the latest example could be the shock loading of the energy industry by a U-turn in government policy. In July 2017 Siemens Wind Power Ltd. has announced the closure of a factory manufacturing wind turbine blades in Tillsonburg Ontario, Canada. Among obvious reasons for the closure are the sudden changes in government programs and uncertainty in American political priorities (O'Kane, 2017).

Business can always live with risk but it cannot tolerate high uncertainty. Internal shocks can emerge for example from data fraud like inflated booking of revenues at Fiat Chrysler (Schoenberg and Welch, 2016) and earlier at Nortel as well. The problem is when can we claim something is a sale, the realization issue? When a customer orders it, when supplier books it; when product is delivered; when the payment is made; or when a customer doesn't return the product? The timing and material effect differences could be huge. (And in this regard the US accounting standards based on GAAP are far more investor friendly than international standards accepted by other countries, among them Canada).

Another big question relates to making sales to poor customers who don't know how to use product or are in poor financial shape. Cisco discovered this during the hi-tech implosion of 2001. They sold new generation products to customers

who were not sophisticated enough to use product and who were likely to go bankrupt (Berinato, 2001). When hi-tech downturn occurred in 2001 Cisco had all these products on bankrupt customer premises and they couldn't recall them because they did not finance the sale. Hence trustees were selling brand new products on internet with 90% discounts. So, for a year or so the biggest competitor to Cisco was...Cisco. Among internal shocks we can also mention the Samsung battery crisis when Galaxies exploded or caught fire (Lee and Lee, 2016) or the Apple touch disease with the screen freeze up and ignore touch commands (Harris, 2016). The above are also examples of inadvertently creating your own future shock loading through internal inadequacies. Taking a closer look at the VW emission scandal we can see how an internal shock starts. In 2005 VW started to use software that was used to cheat on emissions tests after realizing they could not meet United States clean-air standards technically. Signs of irregularities were first discovered in the beginning 2014, but the scandal remained undiscovered till it has reached the top echelon of Volkswagen's management in the middle 2016 (Gates et al., 2017).

Another internally generated shock is the Deutsche Bank's downfall also in 2016. Bankers made three mistakes that would ultimately damage the business: focusing on the fixed-income market, going after the transactions business and the third was linked to an outrageous bonus-payment structure. Deutsche Bank was one of the world's biggest banks and in only a week its shares tumbled to lows not seen in more than 30 years. Probably they have to find merger partners to survive the aftermath. But DB downfall could easily send shock waves across the world's financial markets (Reguly 2016). In other words, one chain's shock loading potentially spreading into other alliances like it happened in the case of VW, Samsung and Takata airbags. And in the case of Takara it infected not just one but several value chains at the same time. Why? In late stage strategic alliances such as value chains, as the authors pointed out, the upstream suppliers have higher volume break evens than their downstream clients because their products are more commoditized. Hence there is pressure for them to sell outside the value chain to the client's horizontal competitors. And Takata did just that. To sum up all these actors misdiagnosed the internal threats, failed to monitor the risks and that is why the internally generated shock loading disrupted their host and other chains. It also demonstrates that the whole value chain can end up paying the price for the miscalculation of one big partner in the chain, and so can compete chains who are supplied by the errant partner.

The cases above illustrate real control issues for all chains. The Wal-Mart trucking case shows a good example to be followed in mitigating risks. The trucks that run constantly to resupply Wal-Mart shelves do so half empty. But Wal-Mart executives recognized this deficiency and cross compensated the trucking component for lost businesses.

The Risks are Contained

Along the life cycle there is steady progression of reduction in structural complexity and nonlinearity of alliances due to market pressures, among many reasons is the reduction in the number of suppliers to each firm. However, the trade off again is riskier exposure to shocks, when you have just two suppliers and one goes bankrupt your days may also be numbered. An up-to-date example is Toyota. After a 2011 earthquake and tsunami in 2016 (two global supply chain disruptions) laid bare the vulnerability of this Japanese company (Fortune, 2016a) But the same thing happened with Kodak in the late 1990s as a result of the introduction of digital photography; photo paper disappeared in three years and the company suffered a huge decline. The suppliers to Kodak realized the decline dangers before Kodak did. Moreover, according to Gollub (2016) software introductions will disrupt some traditional industries in a decade like health or electric cars. And artificial intelligence will be there to support this disruption along with big data analytics. Kodak failed in repositioning (Dan, 2012), but the authors are going to introduce some positive examples.

Of course, being late stage firm repositioning was an enormous challenge but it can be done. IBM managed to switch from hardware to software. General Electric is transiting from manufacturing to software. (However GE still demonstrates how a repositioning in late stages can turn into a disaster). Walt Disney from children to leisure entertainment. GoPro from camera maker into a media company (Fortune, 2016b). And one more example is Amazon.com from book selling to on-line and product line up selling (Amazon, 2016; Wingfield and Scott, 2016). To sum up repurposing and repositioning a company can save it. Although the challenge becomes more formidable as the market matures. Today, a special form of chain based shock loading can even grow into global catastrophic shock loading. Just think about the Hanjin-case. At the very end of August 2016 Hanjin Shipping's creditors withdrew their support after deeming a funding plan by parent company Hanjin inadequate and the company-declared bankruptcy and it caused a global logistics collapse (Guardian, 2016). For example, Hong Kong-based manufacturer, like Nike, Hugo Boss and Ralph Lauren, and others like Samsung, had serious problem to ensure their products reach buyers in time for the year-end holiday season (Nguyen et al., 2016).

Moreover, we should not forget about the latest form of shock loadings: the internet shocks (see also Kare-Silver, 2011). The industry most at risk is the banking industry. Just a click and the computers are infected with malicious software, which then spreads to other computers in the network., then they track down the accounts and make unauthorized money transfers (Shecter ,2016). But all the other companies are vulnerable to the increasing risk of cyber-attacks. (And once the quantum computer comes on line all of our present cybersecurity concepts based on public key will be compromised as quantum computers will function a hundred million time faster than today's versions.)

And there is another meaningful example, the Yahoo hacking and information theft in 2014 from at least 500 million accounts that emerged in September 2016 (Reuters, 2016). One day after Yahoo disclosed the hacking a user sued Yahoo for gross negligence. And this is an excellent example of an external shock loading to an even bigger internal after shock.

The Role of Social Media

Van Dijck (2013) stated that in an online world everything is bound to become “social”. He studied the rise of social media in the context of a changing ecosystem. He found that connective media sites have turned into large corporations that do not just facilitate user connectedness, but have become global information and data mining companies extracting and exploiting user connectivity and has role on communities and commerce. In fact, it is interesting to observe that social media are addressing social needs (Dron and Anderson, 2014) that no one would have expected when they were initially launched. Facebook addresses social needs today that have significant impacts for families. If you type ‘Coffin-Siris syndrome’ in Facebook, you will find a community of parents supporting each other to deal with this challenging children disability.

Social media is an online tool exploited now by most of companies throughout their life cycles to interact with its stakeholders including clients; and plays catalyzer role to shape the ecosystem. Firms are compelled to engage in a continuous two-way conversation with their customers, for instance brand consumers count on a brand to “talk with” them, to surpass the functional benefits of a product and reach a level of the transcendental benefits of being associated with that brand (Canadian Business, 2016).

Social media provides a variety of opportunities for companies (Erdoğan and Çiçek, 2012). It is used in promotion of new products and it is very influential in viral marketing (about the evaluation of the return of social media activities see Skulme and Praude, 2016). Customers share their enthusiasm about their favourite brand via Twitter, YouTube, and FaceBook. In some case, they even help other consumers solve product-related problems for free, which contribute in reducing service costs and increases quality performance (Mathwick et al., 2008).

Social media proactive discussions with consumers could easily diffuse and spread any type of information (Feick and Price, 1987). Moreover, viral marketing became a valid alternative to many traditional forms of advertising. For example, Quattro Titanium relied on a viral marketing by using an animated video and an interactive computer game, to support the launch of its newly-developed disposable razor; it resulted in a five-percentage point market share increase within the target group. And Pepsi made the decision in 2010, to invest on the interactive online platform where consumers, businesses, and non-profit organizations can submit and vote on ideas that have a positive impact and make the world a better place (Kaplan and Haenlein, 2010; 2011).

Conversely, social media can easily damage the firm reputation and its operations (for driving reasons see Altakhaineh and Alnamer, 2018): example of brand spoofs watched by millions via YouTube challenge the building of brands (Elberse, 2009). And outraged by JetBlue's flight delays from New York to Cancun due to a brutal ice storm, in addition to the fact that the company was unable to reschedule flight crews because of internal IT systems problems, JetBlue's customers vented their anger in a wave of negative comments on media social networking sites, almost causing a breakdown of JetBlue's operations as thousands of flights were cancelled and hundreds of others delayed (McGregor, 2007).

The growing development of social media threatens established business models such as the printed newspapers and magazines (Edgecliffe-Johnson, 2009); on the other hand, piracy and digital channels have severely hurt the music industry (Financial Times, 2009). Additionally, media analysts noticed a decline of TV advertising effectiveness (Maddox, 2009). It is worth noting that social life cycle assessment (S-LCA) is the method that can be used to assess the social aspects of products (UNEP 2009). This method contains indicators linked to impact categories which are related to five main stakeholder groups (worker, consumer, local community, society and value chain actors). These factors cannot be eliminated because there is causal relationship between productions and social impacts that are outside of market models (See Norris, 2006).

The existing social structures are under continuous transformation and new fields are added into social networks with the integration of social media elements into platforms. Pressures are applied to Customer Relationship Management (CRM) and Enterprise Resource Planning (ERP), where variety of deals and offers for customers are produced based on combination of data from social networks and businesses. News, comments, bulletins or shares about products or companies in social networks, blogs, and news sites are monitored closely through developed software to collect information which helps businesses to store and manage the unstructured information (Kietzman et al., 2011).

However, researchers argued that it is a complex task to study the effects of information technologies on business performance due to large number of external variables (Bakos, 1987). The extraction of meaning from this avalanche of data will be left to artificial intelligence (AI) and big data analytics. Big data for example can uncover the key elements of a business like customers, products, campaigns, operations. Doing nothing with these information is the biggest pitfall to an organization (Schmarzo, 2013).

Conclusions

The answer to the question why early firms better withstand shocks is that loose fit with their environment allowing quick moves and market repositioning. Moreover, ecosystems have non-linear and complex structures that help them survive shocks, whereas value chains have linear and simple structure make them fragile.

A value chain can be easier ruined than an ecosystem. But, on the other end of the scale, being a value chain and being closely matched with their environment allows organic growth and economies of scale. Value chains happen to be the most stable but also the most vulnerable alliance forms subject to shock loadings, be it external (e.g. from social media) or internal.

Shocks have both a negative and positive role. They test and condition the firms and their alliances and sometime eliminate the weak ones. And there appears to be a natural selection mechanism in the market whose selection process is delivered through shocks. However, frequent shocks disorient the firm and will never allow productivity to triumph over effectiveness. Effectiveness is the best survival and coping mechanism in early markets but must yield to efficiency in late stable markets.

References

- Altakhaineh A.R.M., Alnamer S.A.S., 2018, *The Impact of Facebookers' Posts on Other Users' Attitudes According to Their Age and Gender: Evidence from Al Ain University of Science and Technology*, "Social Science", 7.
- Amazon, 2016, Amazon Prime Air, <https://www.amazon.com/Amazon-Prime-Air/b?ie=UTF8&node=8037720011>, December 7.
- AP (Associated Press) 2017, *What drivers should know about the Takata air bag recall*, The Associated Press, <https://apnews.com/f0dadc860ff0478db4c1adadc79b7db1>, January 13.
- Bakos J.Y., 1987, *Dependent variables for the study of firm and industry-level impacts of information technology*, [In:] Proceedings of the Eighth International Conference on Information Systems, pp. 10-23.
- Bailetti T., 2012, *What Technology Start-ups Must Get Right to Globalize Early and Rapidly*, "Technology Innovation Management Review", October.
- Berfield S., Trudell C., Fisk M.C., Plungis J., 2016, *Sixty Million Car Bombs: Inside Takata's Air Bag Crisis*, Bloomberg online news, <http://www.bloomberg.com/news/features/2016-06-02/sixty-million-car-bombs-inside-takata-s-air-bag-crisis>. August 02.
- Berman D., 2016, *Tech vs. the titans, The banking battle over the way we pay*, "The Globe and Mail", Monday, April 25.
- Berinato S., 2001, *What Went Wrong at Cisco in 2001*, "CIO.com", August 1.
- Boeing, 2016, *The Boeing Company*, www.boeing.com, May 4.
- Bonislawski A., 2012, *FAIMS Gaining Ground as Proteomics Separations Tool as Vendors, Researchers Push Development*, <https://www.genomeweb.com/proteomics/faims-gaining-ground-proteomics-separations-tool-vendors-researchers-push-develo>, December, 12, 2017.
- Brunsdon J., Oliver C., 2016, *Volkswagen emissions scandal: Noxious omissions*, "Financial Times on-line", January 17.
- Canadian Business, 2016, *The new rules of social media influencer Marketing*, <http://www.canadianbusiness.com/blogs-and-comment/the-new-rules-of-social-media-influencer-marketing/>, October 6.
- Colissoin P., 2013, *Supermarket wine sales: wine rack or wine racket?* "The Guardian", from <https://www.theguardian.com/money/2013/nov/01/supermarket-wine-tesco-sainsburys-asda>, December, 12, 2017.

- Colvin G., 2017, *The Wells Fargo Scandal Is Now Reaching VW Proportions*, "Fortune on-line", January 26.
- Dan A., 2012, *Kodak Failed by Asking the Wrong Marketing Question*, "Forbes", from <https://www.forbes.com/sites/avidan/2012/01/23/kodak-failed-by-asking-the-wrong-marketing-question/#2601f4143d47>, December 12, 2017.
- Dron J., Anderson T., 2014, *On the design of social media for learning*, "Social Sciences", 3(3).
- Drozdiak N., 2016, *EU Fines Truck Makers Over \$3 Billion for Participation in Cartel*, "The Wall Street Journal on-line", July 19.
- Edgecliffe-Johnson A., 2009, *Ad Revenue Slump Rips through Newspapers*, "Financial Times", http://www.ft.com/cms/s/0/ab79ee8a-c65c-11dd-a741-000077b07658.html?ncklick_check¼1, November 27, 2009.
- Elberse A., 2009, *The Reach of Online Movie Trailers, paper presented at the Workshop in Motion Picture Industry Studies*, UCLA Anderson School of Management, Los Angeles, California, November 2009.
- Erdoğan I., Çiçek M., 2012, *The impact of social media marketing on brand loyalty*, "Procedia - Social and Behavioral Sciences", 58.
- Ericson, 2016, *BelAir Networks is now part of Ericsson*, http://www.ericsson.com/thecompany/company_facts/businesses/acquisitions/belair_networks, May 4.
- Feick L.F. and Price L.L., 1987, *The market maven: A diffuser of marketplace information*, "Journal of Marketing", 51(1).
- Financial Times, 2009, *Music Industry Must Learn to Play New Tune*, January 9.
- Fortune, 2016a, *Other Major Japanese Firms Hit by Quake Damage, Supply Disruptions*, <http://fortune.com/2016/04/17/toyota-earthquake-disruptions/> May 4.
- Fortune, 2016b, *GoPro Wants to Transform From a Camera Maker Into a Media Company*, <http://fortune.com/2016/08/31/gopro-media-company/>, August 31.
- Gates G., Ewing J., Russel K., Watkins D., 2017, *How Volkswagen Is Grappling With Its Diesel Scandal*, "New York Times on-line", January 9.
- Gollub U., 2016, *The future is here!* Facebook post, <https://www.facebook.com/udo.gollub/posts/10207978845381135>, April 22, 2016.
- Guardian, 2016, *Hanjin Shipping bankruptcy causes turmoil in global sea freight*, <https://www.theguardian.com/business/2016/sep/02/hanjin-shipping-bankruptcy-causes-turmoil-in-global-sea-freight>, September 2.
- Harris S., 2016, *They should fess up: 'Customers demand Apple find cure for iPhone 'touch disease'*, "CBC News", October 23.
- Hoffman R., 2013, *If, Why, and How Founders Should Hire a "Professional" CEO*, reidhoffman.org, January 21.
- Hotten R., 2015, *Volkswagen: The scandal explained, 2015*, "BBC News", <http://www.bbc.com/news/business-34324772>, December 12.
- Kaplan A.M., Haenlein M., 2010, *Users of the world, unite the challenges and opportunities of social media*, "Business Horizons", 53(1).
- Kaplan A.M., Haenlein M., 2011, *Two hearts in three-quarter time: How to waltz the social media/viral marketing dance*, "Business Horizons", 54.
- Kare-Silver M., 2011, *E-shock 2020: How the digital technology revolution is changing business and all our lives*, Palgrave Macmillan, New York.
- Kentikelenis A.E., 2018, *The social aftermath of economic disaster: Karl Polanyi, counter movements in action, and the Greek crisis*, "Socio-Economic Review", 16(1).

- Kietzman J.H., Hermkens K., McCarthy I.P., Silvestre B.S., 2011, *Social media? get serious! Understanding the functional building blocks of social media*, "Business Horizons", 54(3).
- Koplyay T., Hurta H., 2016, *Clock speed theory of strategy making along the life cycle*, "Polish Journal of Management Studies", 13(1).
- Koplyay T., Lloyd D., Sanchez L., 2011, *Value chains under shock loading: An analysis of the Hi-tech sector*, "Proceedings of the American Society of Engineering Management".
- Koplyay T., Mitchell B., 2014, *The dynamics of alliances formation in high-tech markets; from ecosystems to value chains*, IIE Annual Conference, Proceedings.
- Kościelniak H., Łęgowik-Świącik S., Jančíková E., 2017, *Business analytics of enterprises in terms of strategy*, "Polish Journal of Management Studies", 16(1).
- Lee Y., Lee M.J., 2016, *Samsung's exploding battery crisis began with the rush to beat an iPhone's rumoured down year*, "Financial Post on-line", September 19.
- Liwanag R., 2015, *Volkswagen isn't the first car manufacturer to have been caught using defeat devices*, "Financial Post on-line", September 25.
- Lu C., 2016, *Walmart's successful supply chain management*, <https://www.tradegecko.com/blog/incredibly-successful-supply-chain-management-walmart>, June 10.
- MacNamara W., 2010, *African Minerals in \$1.5bn China pact*, "Financial Time", <https://www.ft.com/content/8e2c6de6-8e54-11df-964e-00144feab49a>, December, 12.
- Maddox K., 2009, *Forrester Study Finds Marketers Believe TV Advertising Has Become less Effective*, <http://www.tbtonline.com/apps/pbcs.dll/article?AID%2F20080220/FREE/671387518/1078/newsletter01>, November 27.
- Mathwick C., Wiertz C., De Ruyter K., 2008, *Social Capital Production in a Virtual P3 Community*, "Journal of Consumer Research", 34(6).
- Marous J., 2017, *Financial Institutions in the U.S. Are Falling Behind In The Innovation Arms Race*, "The Financial Brand", <https://thefinancialbrand.com/65069/america-us-banking-digital-innovation-trends/>, December 12.
- Myers A., 2016, *How a 500-year-old legal doctrine can ensnare investors*, "The Globe and Mail on-line", September 7.
- McGregor J., 2007, *Customer service champs*, "Business Week", 4024.
- Nguyen D.T.U., Kyunghiee P., Mai N.C., 2016, *Nike, Polo's Marooned Suppliers Race for Thanksgiving Rush*, "Bloomberg.com", September 7.
- Nguyen L., 2016, *Giant Tiger undergoes major revamp amid stiffening retail competition*, "The Canadian Press on-line", August 10.
- Norris G., 2006, *Social Impacts in Product Life Cycles - Towards Life Cycle Attribute Assessment*, "International Journal of Life Cycle Assessment", 11(1).
- Nussbaum A., Sebag G., 2017, *Renault, Fiat Darken Auto Industry Outlook After VW Settles*, "The Washington Post on-line", January 13.
- O'Kane J., 2017, *How a green-energy boom went bust in Tillsonburg*, "The Globe and Mail", <https://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/tillsonburg-siemens-wind-power/article35829302/>, 28 July.
- Pressman A., 2017, *Intel CEO Touts New Strategy for Next Wireless Wave*, "Forune.com", February 20.
- PYMNTS, 2016, *The Canadian Case for ISO 20022*, <http://www.pymnts.com/news/b2b-payments/2016/the-canadian-case-for-iso-20022/>, March 16.
- Reed M., 2017, *BMW and Toyota expand partnership*, "Financial Time", <https://www.ft.com/content/1ca4578c-c1de-11e1-8e7c-00144feabdc0>, December 12.

- Reguly E., 2016, *Deutsche's downfall. The story of the worlds most dangerous bank*, "The Globe and Mail on-line", October 01.
- Reuters, 2016, *Yahoo Is Sued for Gross Negligence over Huge Hacking*, "Fortune on-line", September 23.
- Reeves R., 2015, *Companies in coalition: When enemies become (temporary) friends*, "Management Today", 22 April.
- Schmarzo B., 2013, *Big Data: Understanding how data powers big business*, Indianapolis, IN: John Wiley & Sons.
- Schoenberg T., Rauwald C., McLaughlin D., 2017, *VW fined \$4.3 billion, more executives charged in settlement that reveals depths of emissions deception*, "Financial Post on-line", January 11.
- Schoenberg T., Welch D., 2016, *Suspect Sales at Fiat Chrysler Could Be Bad News for Its Rising Star*, "Bloomberg.com", September 8.
- Shecter B., 2016, *They're not safe: Smaller firms, financial institutions becoming more vulnerable to cyber-attacks*, "Financial Post on-line", September 9.
- Skulme R., Praude V., 2016, *Social media evaluation metrics*, "Oeconomia Copernicana", 7(1).
- Silva S.E., 2017, *Brazil's WTO challenge over aid to Bombardier is good for the aviation market*, "The Globe and Mail on-line", Feb 13.
- UNEP, 2009, *Guidelines for Social Life Cycle Assessment of Products, Social and socio-economic LCA guidelines complementing environmental LCA and Life Cycle Costing, contributing to the full assessment of goods and services within the context of sustainable development*, United Nations Environment Programme, Belgium.
- Van Dijck J., 2013, *The Culture of Connectivity: A critical history of social media*, Oxford: Oxford University Press.
- White K., 2015, *When to hire a new CEO: Learning from the examples of Twitter and Bigcommerce*, "smartcompany.com.au", Wednesday, June 17.
- Wingfield N., Scott M., 2016, *In Major Step for Drone Delivery, Amazon Flies Package to Customer in England*, "New York Times on-line", December 15.

OBCIĄŻENIE UDERZENIOWE - ZROZUMIENIE WPŁYWU SIŁ RYNKU EKSTREMALNEGO

Streszczenie: W artykule autorzy poddadzą badaniom wstrząsy na rynku oraz to, w jaki sposób wpływają one na zmiany w cyklu życia rynku. Opisano reakcję firm i sojuszy na określone wstrząsy. Nacisk położono na firmy i sojusze, gdy rynek ewoluuje. Młode firmy lepiej znoszą wstrząsy. Pytanie brzmi: dlaczego? I jak ewoluują formy strukturalne, aby zmienić charakterystykę przetrwania na rynku. Następnie opracowano specjalny przypadek wstrząsów w mediach społecznościowych. Omówiono także, w jaki sposób wstrząsy w mediach społecznościowych różnią się od innych. Czy firmy są przygotowane na nie, czy nie? Po zakończeniu i porównaniu kilku przypadków, konkluzja jest taka, że media społecznościowe odgrywają w niektórych przypadkach kluczową rolę, a globalizacja powiększa efekty mediów społecznościowych. Do pewnego stopnia wszystkie obciążenia uderzeniowe dotyczą prędkości, z jaką się one odbywają i naszej niemożności przewidywania lub reagowania na nie.

Słowa kluczowe: obciążenie uderzeniowe, cykl życia, sojusze, media społecznościowe, aktualne problemy

冲击负荷 - 了解极端市场力量的影响

摘要:在本文中,作者将研究市场中的冲击以及它们如何随着市场生命周期而变化。后来他们描述了企业和联盟对特定冲击的反应。随着市场的发展,重点是企业和联盟。早期公司更好地抵御冲击。问题是:为什么?结构形式如何演变以改变生存的特征。然后,社交媒体的特殊情况发生了冲击。此外,还讨论了社交媒体冲击与其他冲击的不同之处。公司是否准备好了?在完成和比较少数案例后,结论是社交媒体在某些情况下起着至关重要的作用,全球化扩大了社交媒体的影响。在某种程度上,所有冲击载荷都与它们发生的速度以及我们无法预测或对它作出反应有关

关键词:冲击载荷,生命周期,联盟,社交媒体和当前问题。