

**'CLOCK SPEED' THEORY OF STRATEGY MAKING
ALONG THE LIFE CYCLE****Koplyay T., Hurta H.***

Abstract: Regardless of sector, the long term viability of a firm is strongly tied to the quality and timeliness of its strategies. In hi-tech, events unfold much faster than in other value-creating business activities and hence the strategy changes its scope, its focus and implementation challenges often. This article will present a model that can be relied upon to gauge the need for different strategic engagements at four critical points of the market development: start-up, growth, leveling off/shakeout and maturity. The article also surfaces the importance of the elements of speed, horizon and focus to strategy making in hi-tech and comments on the evolution of market complexity.

Keywords: clock speed theory, strategic horizon, strategy making, market life cycle, hi-tech and retail sector

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Introduction

Speed is a critical success factor, in particular in fast-paced industries. In particular, hi-tech markets are characterized by faster speeds and sometimes by velocities, where the directionality of this speed matters. A market may have a speed of its own bearing down on some adjacent market thereby causing convergence, or in separating from an existing one to create a new market. Understanding time based competition is very important to the firm (Stalk, 1988). In our article we present a model based on on two hundred case studies that will explain the speed of the firm's reaction to market conditions. Managers should consider a firm's participation within any ecosystem as dynamic, with the boundaries of its scope potentially changing over time. *"For example, eBay's participation in the auction ecosystem has expanded through the acquisition of entities corresponding to multiple nodes, such as price comparison, online payment, classified advertising, price forecasting, rapid fulfilment, and voice over IP. And because these entities are tradable, eBay later spun off its voice over IP business, which was acquired by Microsoft"* (Kumar et al., 2015). So in our present paper we answer to the question what the strategic horizon is and we highlight the link between clock speed and strategic horizon. Our aim is to inform the scientific and managerial audience about how can the market complexity be handled with different strategies in different life cycle phase and how the knowledge about clock speed and strategic horizon can help high tech companies overcome the critical points during their operation.

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Clock Speed in High-Tech Sector

Within the market itself, different speeds dictate the behaviour of the value chain, the competition among principal firms and its final customer base. The interesting feature of market speed is its natural “visible spectrum” that more or less defines what can be perceived, analyzed and understood. There are of course forces beyond this visible spectrum but these are either too slow or too fast for the existing market dynamics.

Closely related to the concepts of clock speed and visible spectrum is the strategic horizon of the firm, namely how far out it needs to look to find competitive strategies that anchor the firm to market realities. In the case of young markets the firm’s horizon is short and action is required quickly to profit from the opportunity bounded by the limited horizon. A young firm will undertake several strategic moves either sequentially or in parallel and hopes for one big home run to fulfil its market promise. In its market youth when Apple transitioned from PC to personal communication devices, it found a treasure trove of product variants; iPhone, iPad etc.

On the other hand mature firms have to plan for long term as substantial assets are deployed and long term bets are made to create competitive advantage. These bets can include building of new chip factories (Intel), developing new oil fields (Shell) or making large acquisitions (Nokia).

The difference between the visible spectrum and strategic horizons is that visible spectrum includes the field of vision of the firm, including benchmarking of competitors. The first telltale sign of expanding visible spectrum is the development of a business intelligence (BI) unit. BI, in maturity, is intended to decipher the strategic intent of competitors (Hamel and Prahalad, 1989). So there is strong interplay among the strategic landscape factors; speed, horizon and visible spectrum.

Firms with higher speeds execute strategy faster within their horizons and with superior visible spectrum they can craft better strategies as they see more of the market dynamic than the competitors. Therefore the combination of need for speed given the market horizon and the ability to gauge the proper market conditions as in visible spectrum, sets the clock for the firm. But let us now return to clock speed and look at the repercussion of speed synchronization in a supply chain.

The need to better control the supply chain and to prevent stock-outs Tesco turned to data mining of its extensive point of sale and other information in its systems and mastered the art with such enthusiasm that it has turned the cost centre of data base management into a profit centre by selling this expertise. This example illustrating the infiltration of hi-tech into traditional sectors. Is not enough to the align with market expectation, but also with competition. So the retail market is starting to converge on the logistics and data mining consulting markets, sort of a backwash, where customers down the value chain move up and eventually compete with their own suppliers of certain management expertise. In the retail industry and elsewhere, penetration of hi-tech is increasing the natural clock speed of this

market and may be creating substantial overlaps, if not convergence, between retail sector and its management information supplier base. The major lesson for market strategies is to appreciate the power of new technology, import the concepts, modify and customize these to a firm's particular circumstances and be willing to adjust real time reaction speed to keep pace with technology and its evolution.

Leaders are confronting global industry shifts. They must generate and implement organizational and managerial innovations, both internally and within their ecosystems, to capture opportunities, overcome challenges, mitigate risks and achieve and sustain competitiveness. Shuen et al. (2014) demonstrate how the Dynamic Capabilities Framework (that was developed to enhance strategic agility in high-tech firms operating in high-velocity markets) is relevant to today's upstream strategic context. The authors described how new opportunities and challenges within the upstream industry have created an inflection point that requires a transformative approach to strategy and strategic management, and complicate short term as well as long term decisions. They concluded that in order to survive and prosper in this totally transformed business environment, firms need to develop and employ strong dynamic capabilities, since that can sharpen strategic agility and they are the key to seizing and profiting from opportunities in the new business environment. It can be stated that at the beginning national decisions and macroeconomic policies and reforms made the globalization possible. Nowadays, economic globalization has its own mechanisms and engines, like global value chain of production and consumer's preferences for global brands (Marginean, 2015).

At some point, Tesco internal units working on data mining may have to seek independence from their parents if the clock speeds related to their activities differ substantially from the natural pace of the parent. This is likely to happen, as units can be construed as internally-incubated start-ups that will eventually outgrow and clash with the dominant culture and modus operandi of the parents. Alternately, units could become solely internal consultants to their respective host organizations and eventually lose their competitive edge vis-a-vis the data mining consulting markets, thereby losing their ability to act as external consultants. Tesco's visible spectrum is also influenced by the presence of this hi-tech type activity and that can create stress on the retail operations as these internal consulting functions will now seek out the parents' competitors as potential clients.

Normally, clock speed slows down and strategic horizon opens up as the firm progresses along the market life cycle and, in general, mature and established firms have much slower reaction times than young and entrepreneurial ones.

Complexity in Hi-Tech Sector

Technology based markets tend to be more complex and complicated than other sectors. The complexity refers to increased connectivity in the ecosystems of hi-tech companies that must have global reach both for suppliers and customer base, and domestic markets are the exception and not the rule. According to A.T.

Kearney's study (2009 in: Gorzen-Mitka and Okreglicka, 2015) complexity is a key cost driver for 84% of the companies and a key differentiating factor in the competitive landscape for 56% of all companies that participated in his study.

Moreover, "as the complexity of ecosystems increases, some nodal pairs may develop multiplexity and have more than one type of relationship between them. For example, Best Buy not only retails LG branded electronics and appliances, but also buys products from the firm to sell under its own private labels, Dynex and Insignia brands. Multiplexity in such cases would imply both stronger ties and greater complexity in the management of an inter-nodal relationship" (Kumar et al., 2015).

Stakeholder management can become a major challenge for the firms in sunrise markets (Koplyay et al., 2011b). Complexity is distinguished from complicatedness by the critical feature of predictability. Although complicated systems are hard to model, a certain directionality of forecasts can be maintained and cause/effect relationships accounted for. In complex systems, this is often not true and predictability is lost due to non linearity, butterfly effects and simply misdiagnosed black boxes, into which we would like to confine the least understood components of the system (Koplyay et al., 2011a; Sargut and McGrath, 2011).

Generally speaking, the complexity of early hi-tech markets is much higher due to the unsettled technology, coming and going of competitors, and the quick transitions of customers from innovators to early majority. As Geoffrey Moore examined in his seminal work "Inside the Tornado" - the complexity resides in the market itself in not being able to read the transition points, such as the occurrence of the chasm, building of the bowling alley, advent of the tornado and the sudden appearance of the yawning black hole called the shakeout (Moore, 1999 and 2005). But after the shakeout, when many competitors have left, things settle down; the complexity and unpredictability of the market is drastically reduced (see Figure 1). What is left of complexity migrates inside the mature firm or its value chain and becomes the challenge for strategy implementers. Some of this internal complexity arises due to the many more functional groups that are now present within the firm, the silo effects, the coordination problems, internally divergent cultures, and the general increase in the structural weight of the firm which cause major cultural rigidity, resistance to change and organizational inertia.

As the market evolves, the ties become stronger until roles are reversed, where components influence the emerging chain until the value chain, in turn, begins dictating component behaviour in late stages of the market; so much so, that individual firm needs are submerged into the chain's logic and only those strategic choices survive which favour the survival and competitive edge of the chain.

The perfect example of this situation is the Wal-Mart value chain where even national brands, with huge market power and presence, have to build dedicated factories to supply Wal-Mart stores, which may represent over 60% of their US sales.

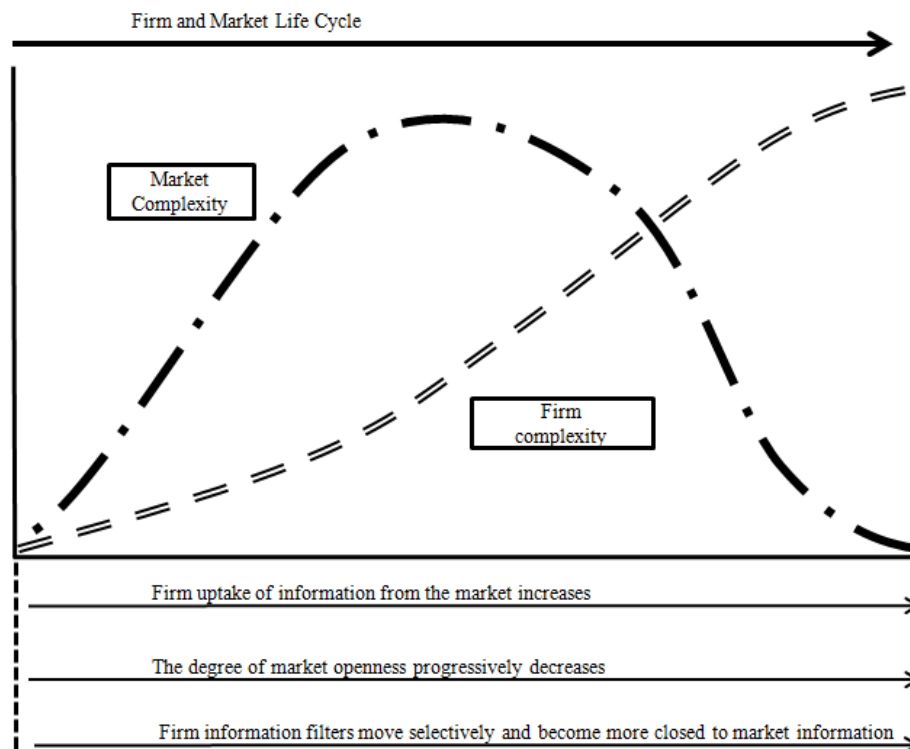


Figure 1. Complexity profile of market and constituent firms during the life cycle
(Source: Own compilation)

Every value chain eventually develops a dominant component or partner that seems to dictate the strategic direction. There may be a need for this dominance to simplify the decision making and adjust clock speed to market realities, otherwise the value chain may risk missing the market natural beat, or clock speed. The dominant partner setting the pace for strategic decisions finds the right pulse for the value chain clock speed that matches the market speed. Examples abound with Wal-Mart, Apple, Google and Boeing being good illustrations of this principle.

Strategy Making in Hi-Tech Sector

In the early phase of the hi-tech market the emphasis on product development that can catch the market mood and bring the technology enthusiasts and visionaries into the firm's realm. Once discovered, the product sells itself by word of mouth or technology enthusiasts' promotion, and the early customers rush to embrace the fragile, incomplete and technologically challenging product (see Figure 2).

of distribution that can be filled with other products the customer needs, and this represents the entry point for marketing and right behind it, finance. The visible spectrum now is the channels of distribution that represent investments and need to generate returns, so finance watches over the productivity for these investments. So the clock speed for the whole organization slows down.

The bowling pins (Moore, 2005) are sometimes referred to as the vertical market segments which are swept up by the tornado into horizontal markets, which will eventually either end up as part of the mass market in maturity or a deliberate niche market. (The niche market choice is a conscious effort to build the firm future on innovation and not mass production.) The difference between the two is that mass markets are price takers with limited scope for customization, whereas niche markets are full customizers with higher margins. At the same time the mass customized markets are associated with higher managerial complexity because of the expanded variety of products and that complexity has negative impacts on business indicators (Soltysova and Bednar, 2015). Niche markets are ruled by innovation and mass markets by production/distribution efficiencies. Again it is worth noting that niche market players' clock speeds are faster as their visible spectrum are narrower (as the customer base is smaller and more homogeneous) and they rely on constant innovation. According to Tabor (2006) and Pachura (2015) the innovation potential can be enriched for example by the intensification and use of the flows of knowledge and skills at the level of external networks. Moreover, the development of intelligent markets and pro-consumer behaviour also enriches the innovation process.

The tornado represents the high growth of the market that sweeps the various niche players from their bowling alley strategies, across the second sink hole called the shakeout, into the mainstream market which is maturity. As the tornado sweeps in, the market clock speed increases, the strategic horizon decreases to a point where it may become unmanageable; technology platform a coalition of dominant partners, then pushes serious innovation to the margins of the platform and protects the incumbents from surprise attacks. The standards platform seriously slows clock speeds and also focuses the visible spectrum only on the platform and whatever is happening around it.

The time-related benefits have no significant impact on the market-based performance. Although R&D and marketing speed as well as flexibility aspects are frequent motives to form alliances. Siripitakchai et al. (2015), however said, that firms and their strategic alliances in the business ecosystem will co-evolve if they can provide strategic value to their partners and customers.

So far in the market the visible spectrum was shifting rapidly from bowling alley strategies to within the alleys on various pins, but now as the platform drifts into market maturity pushed by the tornado, the visible spectrum remains the same. This means that breakthrough technologies not in conformance with the platform can be ignored, and innovation within the market itself can be relied upon to create niche markets and not affect the platform which will become the backbone of the

“main street” phase. There are three areas of innovations according to Pachura these are the structuralist-organizational (with approaches such evolutionary economics, californian school, MIT school); social-institutional (with collective learning process approach, innovative milieus or neo Marshalian nodes) and cognitive approach (with knowledge communities theory, buzz and pipelines concept).

Afterwards the first signs of a rudimentary value chain take shape. The developing ties also slow down the clock speed as decisions need to be cycled among partners for approvals (Koplyay et al., 2011a). The visible spectrum is concerned with the platform, the members of the value chain and the competition. The customer base is becoming stable and well known, requiring minimal analysis. It means that the strategic horizon unfolds due to having stable stakeholders and long-term investments and plans.

As the market relentlessly moves towards maturity, the strategic options get limited (see Figure 3), the complexity of competition is reduced, within small windows of mass customization, to one of a price taker. Hence the only way to generate a profit is to bring down costs and thereby increase margins and profits.

As shown on Figure 3 the generic strategy choice distills down to just one: cost leadership, or niche market product innovation leadership. This has been a long voyage for strategy choice; from the vast array of product strategies during the early phase to more limited focus strategies during the bowling alley to the simple choice of niche or mass market player. But the important aspect of this singular choice of cost leadership is that if everyone is forced to run with the same strategy, then the advantage is derived not from strategy choice but from its implementation.

Conclusions

In tracing the evolution of the hi-tech and retail market, a critical fact emerges; clock speeds slow down and strategic horizon widens progressively as the market matures, complexity migrates from the market to within the firm but the residual complicatedness that remains is far easier to model and manage. The visible spectrum generally narrows as the unpredictability of the market decreases across the life cycle. Niche markets move faster but have narrower focus and closer horizon than mass markets; slower clock speed, smaller visible spectrum and distanter horizon.

The intrusion into adjacent client markets increases the clock speed for the hitherto slowly reacting neighbours. Financial measures often align with different clock speeds and visible spectra for hi-tech and retail sector compared to traditional sectors. Every value chain eventually develops a dominant component or partner that seems to dictate the strategic direction. There may be a need for this dominance to simplify the decision making and adjust chain clock speed and strategic horizon to market realities, otherwise the value chain may risk missing the market natural clock speed and make critical decisions too late.

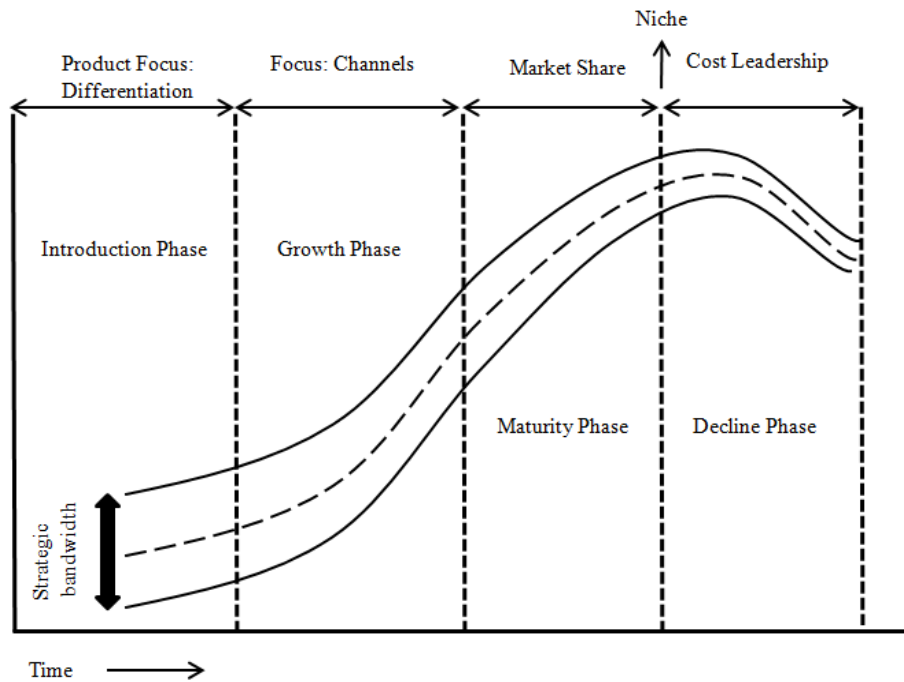


Figure 3. The strategic funnel along the life cycle (Source: Own compilation)

The use of this model when configuring the development of strategies for firms provides a new tool, a new way of examining the firm, a common language with the executives managing the firm, a new set of mechanisms to confirm strategies, and a way to ensure its strategies correctly align with the firm's or value chain's position in its market life cycle.

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TEORIA TWORZENIA STRATEGII "CLOCK SPEED" PODCZAS CYKLU ŻYCIA

Streszczenie: Niezależnie od branży, długoterminowa rentowność firmy jest ściśle związana z jakością i aktualnością jej strategii. W nowoczesnych technologiach wydarzenia rozwijają się znacznie szybciej niż w przypadku innych tworzących wartość działalności, stąd strategia zmienia ich zakres, ostrość i często wyzwania implementacyjne. Niniejszy artykuł przedstawi model, na którym można polegać, aby ocenić potrzebę różnych zobowiązań strategicznych z czterech punktów krytycznych rozwoju rynku: uruchomienia, rozwoju, wyrównywania/restrukturyzacji i dojrzałości. Artykuł również podkreśla znaczenie elementów prędkości, horyzontu i koncentruje się na tworzeniu strategii w nowoczesnych technologiach i spostrzeżeniach na temat ewolucji złożoności rynku.

Słowa kluczowe: teoria „clock speed”, horyzont strategiczny, tworzenie strategii, cykl życia na rynku, sektor detaliczny i sektor nowoczesnych technologii

戰略制定的“時鐘速度”理論沿線生命週期

摘要：無論行業，一個企業的長期生存能力緊密聯繫，其戰略的質量和時效。在高科技，事態的發展比其他創造價值的經營活動要快得多，因此該戰略經常變動的範圍，其重點和實施方面的挑戰。本文將介紹一些可以依靠，以了解不同的戰略聘用的需要在市場發展的四個關鍵點的模型：初創，成長，趨於平緩/洗牌和成熟。文章還面速度，視野，專注於高科技對市場複雜演變的元素，戰略制定和意見的重要性

關鍵詞：時鐘速度理論，戰略視野，戰略制定，市場生命週期，高科技和零售行業