Strategy Timing in Ecosystems

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Abstract

Many Managers today are leveraging value management as a major contributing tactic in strategic plans. More often than not this value is a direct output from the technology divisions of the company. Resource based technology strategy includes intellectual property whereas product based technology strategy is developing innovative products/processes within the organization. Firms interacting with each other within a set industry are commonly referred to as an ecosystem. In this context, strategy timing is capturing the greatest business advantage at the same time creating the most value within the ecosystem. Intangible resources of Intellectual property & trade secrets as well as tangible assets of innovative processes & product design must be timely leveraged to compliment the efforts of a healthy ecosystem as well as maximize a sustainable business advantage.

Introduction

Many of the historically accepted business strategies including the S.W.O.T. analysis of the 70's, product based models of the 80's, and the resource based models of the 90's fail to emphasize or even address the timing or timing of entry into an ecosystem. Porter admits that "Positioning—once the heart of strategy—is rejected as too static for today's dynamic markets and changing technologies" (Porter 1996) but does not address the rate of change or timing required to realize the full advantage of his model. It wasn't until the 2000's the health of individual companies began to be correlated to the health of their respective ecosystems (Iansiti & Levien 2004). The early concept was mainly focused on roles fulfilled within the ecosystem rather than when those roles were integrated. Obviously, if roles are so paramount

in complex ecosystems, timing of strategies between members of the ecosystem must be viewed as equally important.

There are many questions that need to be answered about the timing of strategies especially within technology ecosystems. The implosion of the Internet bubble made it obvious that members of a network share a common fate, meaning that they could rise *and* fall together (Iansiti & Levien 2004). This concept should suggest that strategies be aligned and accordingly <u>timed</u> within the ecosystem. The reason why a strategy should be implemented need also include the timing of the strategy execution.

Introduction of new technology into an ecosystem with off timing could potentially damage it. Key members of the ecosystem must have the ability to execute their respective strategy or new members must be considered for introduction? For example: If high capital expenditures are required, will everyone involved be able to invest?

I intend to highlight timing hits and misses in well known cases, study timing based strategy research, and relate timing with the effects on the industry ecosystem. Case studies and literature review will be used primarily to underline the importance of strategy timing within ecosystem networks. Research methods include:

- Literature Search

- Case study

- Novel Analysis

    o Discussion

    o Conclusions

Key Elements

We are not alone in our business communities. Ecosystems can be recognized in every culture and in every industry. The minimum elements required to implement a successful strategy within an ecosystem is the overall good health of the ecosystem, an opportunity to take advantage of, and a structure to utilize innovative resources and products with a timing that creates the most value. "Business ecosystems almost guarantee disruptive results, because by breaking up a previously integrated design they reduce barriers to entry to new players, and encourage new people with new ideas, new money, new tools and new technologies to participate and create." (Moore 2013)
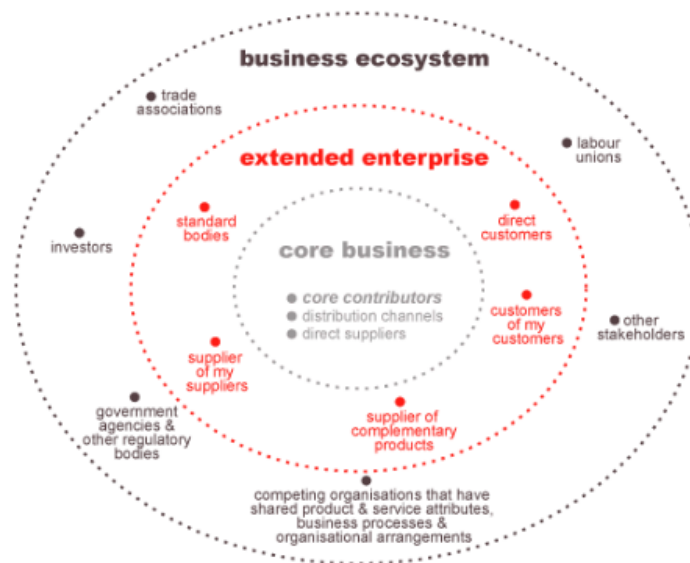

Fig 1. Moore's ecosystem definition

Many companies today even compete in multiple industries and hold roles in multiple ecosystems. The opportunity to participate in a healthy business ecosystem means access to sustainable source of resources, technology, and innovation. In a 2012 Harvard Magazine interview, Professor Rosabeth Moss Kanter states, "Ecosystem conveys the idea that all the

pieces of an economy come together in particular places, and that their strength and

interactions determine prosperity and economic growth. In Silicon Valley, there is a sense that

you prosper only because you're surrounded by lots of resources that make it possible to

succeed, beyond what your own entity controls."

The participants of an ecosystem must also be able to recognize when opportunities

arise with a common goal to grow and expand. "Critical mass can be reached by increasing scale and

scope – with partners – and by standardization in key market segments." (Moore). In a 2016 article on

the Internet of things market, the Business Insider reports that in the next five years $6 trillion will be

invested installing 24 billion devices in the IoT market with the biggest barriers to successful

implementation being: security, privacy, technology fragmentation, and general problems of

implementation. Companies within this industry should be able to recognize that creating ecosystems in

this market will certainly bolster standardization and at the very least help overcome the fragmentation

and implementation barriers associated with it.

The IoT's article also serves an excellent example of the importance of timing in

ecosystems. But what is the proper timing of implementing the IoT's? If the barriers of

implementation and standardization are solved before the privacy and security concerns, the

entire market would become heavily scrutinized with just a few major hackings. Likewise, if

privacy and security barriers are solved without standardization of implementation the entire

market may become undesirable due to complexity of consumer use. These answers will likely

be answered and solved within the IoT's ecosystem. Not only will the sequence of events be

timely coordinated, but these important decisions will be made in collaboration between

companies with common goals. Neilson, Martin, & Powers reinforce this with a study

interviewing thousands of employees and executives. They were asked if they agreed with the

statement "Important strategic and operational decisions are quickly translated into action,"

the majority answered no. Through ranking the interview questions, they identified the #2 trait

of successful strategic execution of a company is that information about the competitive

environment gets to headquarters' quickly (Neilson, Martin, & Powers 2008).

Development

The environment of a healthy ecosystem will be in constant development and

continuous growth. Even keystone companies that have already realized strategic milestones

such as system lock, best products, or economy of scale will admit that that a major key to

successful sustainability is the health of the respective ecosystem and make tremendous efforts

to bolster the system. From their earliest days, Wal-Mart and Microsoft, unlike companies that

focus primarily on their internal capabilities, have realized this and pursued strategies that not

only aggressively further their own interests but also promote their ecosystems' overall health

(Iansiti & Levien 2004).

Protection

While some traits are similar, an ecosystem is does not necessarily mean open source

and open communication does not imply free flowing intellectual property. Special

considerations need to be taken to protect company's unique knowledge, products, and

processes. The National Science Foundation estimates that corporations employ trade secrets

perhaps two times as often as patents (Resser & McIntyre 2017). Competitors can quickly

imitate management techniques, new technologies, input improvements, and superior ways of

meeting customers' needs (Porter 1996).

"Strong intellectual property protection, in itself, will only help you on the first round of innovation. During that time, you can rent other people's complementary capabilities. But sooner or later, you're going to get copied, so you've got to move quickly to build the capabilities you need for the second round, and to try and preserve as much of the proprietary aspect of the technology as you can." Teece 2013

A trade secret, to fit the federal definition, must include information and reasonable measures taken to protect the information, and it must derive independent economic value from not being publicly known as defied under 18 U.S.C. § 1839(3) (A), (B) (1996) (Resser & McIntyre 2017). The concept2016 spurred a new federal law called the Defend Trade Secrets Act of 2016 at a near unanimous decision. In April 2017, David Resser and Bob McIntyre find The American Bar Association estimates the market value of S&P 500 companies can include as much as 75% intangible assets (Resser & McIntyre 2017). They later go on to state this is up from a 1975 estimate of only 20%!

Internal Timing Based Strategies

Over the past 30 years' companies have been internally implementing concepts that not only help solve product and process control issues, but address timing issues as well. Old management tactics such as TQM and lean manufacturing have evolved into Design for Six Sigma, resourced based views have evolved into Dynamic capabilities, and product based views is being replaced with disruptive innovation. All these concepts rely heavily on triggers and sensing to determine when to implement a strategy.

Design for Six Sigma

Sig sigma was introduced in the mid 1980's as a framework individual companies to internally control and improve process but later evolved to include product development and innovation in the form of Design for Six Sigma. In addition to six sigma basics, the DFSS black belt of is highly attuned to the timing impact related to development. Würtemberg & Lilliesköld suggested through DFSS training programs that team leaders may not need to be an expert of any one subject as they will always have support of the Master Black Belt. Instead, it is offered that they simply need to be trained on when to use the training. They state, when it comes to the competence profile of a trained DFSS Black Belt the essential parts according to this study are:

• Understanding of "just-in-time training" for engineers

• Conversance of the methods within the concept

• Comprehension of the purpose with tools and techniques within the concept and when to use them

Dynamic Capabilities

Dynamic Capabilities gained attention in the 1990s as an idea that any of the firm's resources can be adjusted on the fly in reaction to changes in industry. It is highly debated as a viable model due to the breadth of specific capabilities and constant evolution. The dynamic capability perspective is ultimately about understanding a firm's survival and growth, it inevitably draws from a range of theoretical perspectives, not just evolutionary economics (Ambrosini, Véronique, 2009).

"Companies adapt, in a process much like evolutionary fitness. As the business niche changes, the capability changes accordingly. That doesn't just happen on its own. Three types of

managerial activities can make a capability dynamic: *sensing* (which means identifying and

assessing opportunities outside your company), *seizing* (mobilizing your resources to capture

value from those opportunities), and *transforming* (continuous renewal)." (Teece 2013)

Studies might infer the presence of dynamic capabilities by examining firm performance

outcomes. However, this approach compounds the problem of tautology in the literature. By

looking at the detail of how dynamic capabilities are deployed, we should be able to

understand better the dynamic capabilities in practice and whether and how they might differ

across firms, which could form the basis for developing managerial prescriptions (Ambrosini,
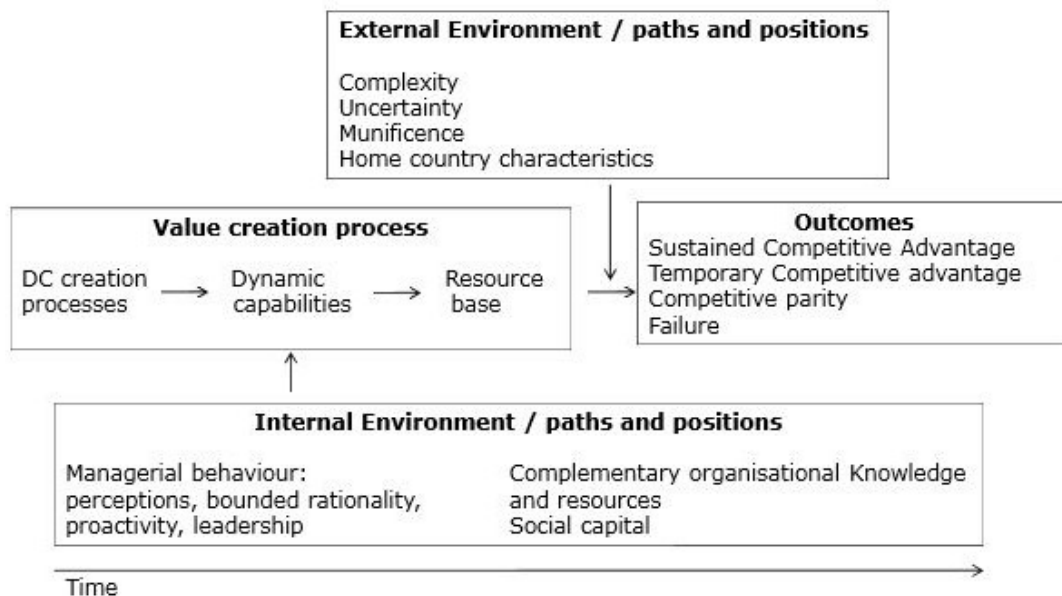
Véronique, 2009).

Figure 2. Ambrosini's Dynamic Capabilities Definition

Disruptive Innovation

Also in the Mid 1990's another timing based concept was introduced as Disruptive

Innovation. Clayton, Raynor, and McDonald summarize: "Disruption" describes a process

whereby a smaller company with fewer resources is able to successfully challenge established

incumbent businesses. Specifically, as incumbents focus on improving their products and services for their most demanding (and usually most profitable) customers, they exceed the needs of some segments and ignore the needs of others. Entrants that prove disruptive begin by successfully targeting those overlooked segments, gaining a foothold by delivering more-suitable functionality.

Mike Nolan of Forbes Magazine hints at how an ecosystem might bolster a disruptive innovation strategy: Once you've figured out what is truly disruptive, you have to decide how the company is going to respond. Inevitably, there are three choices: Build the capability, technology or business model yourself; buy it to enable market speed; or create alliances with others and do it together. (Nolan 2016)

Creating New Ecosystems

The Internet of Things

It can be debated that the world has never seen such a huge undertaking of technology shift as it currently is with the Internet of Things. The entire idea of the IoT's is everything is connected, from shoes to appliances; your belongings will be able to communicate with you from anywhere. One aspect of the IoT's that is less debatable must be recognized is no single company has the capability to make the revolution happen without collaborating in ecosystems. One thing that should be certainly agreed upon is the time to form the IoT's ecosystems is right now.

The Internet of Things (IoT) has the potential to offer business value that goes beyond operational cost savings. Providers in the IoT ecosystem have a largely unexplored opportunity

to develop compelling IoT solutions that explore how the ability to collect and analyze disparate

data, in real-time and across time, might transform the business.

(Deloitte Touche Tohmatsu Limited 2014)

IBM's ecosystem of independent partners

During the 70's, 80's, and 90's IBM experienced a roller-coaster of success and failures.

Many experts had given up one the once hugely vertical integrate giant even referring to them

as a dinosaur. But, after finally finding sustained growth again near the turn of the century, they

have a completely redefined their strategy and structure. In 2007 Harreld, O'Reilly III, and

Tushman, offer some insight into how IBM could come back from a low that many thought

would end the company forever.

"In the past decade, IBM has undergone a remarkable transformation. While there are

many reasons for this success, at least part of it has been in their ability to both sense and seize

opportunities and to reconfigure the company's structure and competencies to address them.

In strategic terms, these dynamic capabilities have been made real through an ongoing process

of disciplined, fact based conversations; a common language and problem-solving methodology

as manifest in the IBM Business Leadership Model; and a clear commitment by leaders to

compete in mature as well as emerging markets."

(Harreld, O'Reilly III, and Tushman, 2007)

As an example, today IBM has recognized the need for integrated solutions into the

IoT's and is proactively making efforts to form supporting ecosystems. Their newest massive

cloud based data base known as Watson has gained considerable attention within the artificial

intelligence community and as a platform to the IoT's ecosystem. After being highly successful

on the game show Jeopardy, the earned celebrity status of Watson gives it a major lead into the

AI market. There are several instances of IBM participating in new ecosystems to leverage the

Watson platform as well as older IBM cloud platforms effectively creating two levels of

disruption. Madsen and Cruikshank consider this disruption to be a specific dynamic capability.

"By provisioning both supply- and demand-side resources with partial control, a

platform-leader develops an ecosystem-specific dynamic capability that shapes and promotes

ongoing innovation and in turn, the value of the ecosystem. This approach takes us one step

closer to understanding what explains heterogeneity in the development and evolution of

platform-based ecosystems" (Madsen, Cruickshank 2015)

Watson has the potential to benefit all types all industries but initially seems to be

having the largest impact in the health care industry with an already dedicated platform called

Watson Health. In 2015 IBM announced new partnerships with Apple, Johnson & Johnson, and

Medtronic to optimize consumer and medical devices, effectively reaching nearly 1/3 of the US

population almost instantly.

"Their data sets represent 90 million lives, primarily in this country,"

Mike Rhodin, senior VP of IBM's Watson Business Group.

IN a recent NY Times article Steve Lohr writes, For IBM, the collaboration with H&R

Block underlines its strategy in the emerging market for artificial intelligence technology.

Watson will touch consumers, but through IBM's corporate clients (LOHR 2017). The technology

partnership with H&R block is expected to reach additional 11 million consumers this year.

"The quick pace of technological change in the networked economy necessitates that

strategies and relationships evolve over time, changing with the dynamic business

environment. Companies should challenge themselves to look "outside of the box" to develop

their business by initiating, leveraging and redefining relationships with other players to create

and capture value." (Julie Bowser, IBM)

Discussion

Timing or Triggers

As the concept of dynamic ecosystems continue to be studied, it is imperative to give

mechanisms of timing and triggers equal attention. This will become even more paramount as

the IoT's gains momentum in today's connected society. It is still unclear how rapid input of the

masses of people will affect modern industries. We will need to know for certain if the trends

being recorded by big data companies can be referred to as accurate and reliable. Take the

2017 US presidential election as an example of how the trends were unreliable. For months

leading up to the election social media, press media, and even Gallup Polls predicted one

winner but in the final hours the people chose the other candidate. Firms using trending

information should be very cautiously in making business decisions based on them. The IoT's

will need to be heavily studied and the trending data proven.

The concept of IoT's looks to promises us an opportunity to also record the timing of

trends, for literally everything. It could become apparent that only certain portions of trends

offer a reliable metric to be considered valid. Strategy should be timely executed within these

periods of validity to create the most value at the most efficient moment. Ambrosini suggests

what we need are fine-grained case studies of firms who have sustained advantage over time in

dynamic environments. If we could accumulate enough case-based data, it might be possible to

identify the more common dynamic capabilities, and generally to explore the model in Figure 2. (Ambrosini, Véronique, 2009).

Conclusion

The concept of strategy timing has been somewhat dodged around in modern strategy research but in today's IoT's connected world it appears that timing will be need to be addressed completely. Mass amounts of trend tracking will offer more information than ever before but at the same time the trends themselves will be changing faster than ever as well. Several layers of uncertainty will be added to an already complex timing concept. It should be easily agreed that a strong strategy is paramount for sustainability and most should realize that when we implement a strategy in todays connected world is becoming just as equally important.

An attest to this complexity is the rate that ecosystems are forming within the IoT's. Nearly every keystone firm is building and nurturing ecosystems in some form or another and with old and new platforms. Even goliaths like Nike and Apple are partnering to successfully navigate the new marketplace. The IoT's is testing every participating company and all their systems with a rapid pace that only seems to be increasing. The only logical approach is to share the work load, the wins, and the losses associated with the IoT's.

With so much attention being focused on the IoT's by companies using timing based resources like dynamic capabilities, and disruptive innovation, firms might consider adding some resource structure to improve communication performance within their ecosystems. The same benefit seen by individual firms through the adoption of Design for Sig Sigma methodology might also be realized in the ecosystem as a whole. A keystone company could be

considered a master black belt, the next level of supporting companies could be the black belts, and a third level of peripheral companies could be considered the green belts.

Much of the research on performance of individual firms through the use of timing based strategies can and should be replicated within ecosystems. The IoT's is a prime platform for this research due the number of new ecosystems, the rapid development of the industry, and because many of the participating companies have used some sort timing based structure to implement their individual strategies with excellent results.

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