Strategy Bottlenecks

How TME Players can Shape and Win Control of their Industry Architecture

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1 Abstract

The competitive environment facing businesses is rapidly evolving. Companies in many different sectors increasingly face challenges arising from new technological developments. To draw an analogy with military services, companies need to move from “tactical combat”, undertaken in stable sectors with easily identified competitors, to a “guerrilla warfare” mentality, where they must rapidly switch tactics to fight non-traditional competitors. But with much of the existing strategy toolkit built around “tactical combat”, this is a challenging task. Successful, agile companies do not just compete within their own sectors; they seek to actively redefine and reshape those sectors. The most successful companies become the “bottleneck” in their sectors through a strategy of forging alliances, changing the rules of the game, establishing webs of dependencies, and knowing when and where to compete, or not. Identifying the core values that a company brings to its sector is key to this approach. Companies need to identify bottlenecks, use them to create architectural[1] advantages, and finally make architectural thinking a part of their organizational fabric if they are to achieve sustainable success in the new business dynamics.

1 Industry Architectures describe the rules and roles that pertain to the division of labor in a sector; they define the templates and standards through which companies cooperate and compete within a sector.

2 The role of bottlenecks in shaping industry architecture

Most fast moving companies do not just compete within the confines of their industry, they change the definition of their industry

Most fast-moving companies, whose value has increased substantially over time (e.g. Apple, Google, or IKEA), have something in common. They do not just compete within the confines of their industry, but they try to change its very definition. They understand that competition is no longer within a sector; it is primarily about shaping the structure of a sector.

For instance, Apple redefined the mobile music device sector by keeping a hold on the music format, selectively outsourcing hardware production, and carefully managing co-specialized companies such as Toshiba or Foxconn providing complementary products and services. Similarly, IKEA redefined furniture retail by reshaping roles in its sector: final assembly is done by consumers in their own houses; production by subcontractors; logistics by external providers; and retail by franchisors.

These companies encouraged competition by complementary parties in sectors where they did not have a presence, and changed the rules of the game. They understood that making money is about structuring a set of relationships around them to become the bottleneck within their industry (the most valuable part of a complex system, where the value accrues), i.e. *controlling* without *owning*.

Using traditional strategic analysis tools to analyze the way these companies build and capture value is challenging. Some of the familiar approaches such as Porter's five forces are increasingly redundant in a world where industries are now defined not only by technologies, IT, and globalization, but also by industry participants reshaping their own landscapes. Competition has shifted from identifying new value propositions and building new value curves, to industry redefinition and leveraging of the ecosystem.

If existing frameworks are not always useful, what is? The answer lies in building new concepts that are more attuned to a world driven by alliances and the aim to reshape sectors. Today, effective organizations leverage far more than their own actions in order to both create and capture value. They shape the rules and roles of their sector, aiming to become a bottleneck and "rule without owning" – that is, leveraging the skills and energy of others. Companies sticking to traditional sector definitions often fail to see how profits migrate from their own, narrow part of the industry to other parts of the sector as the result of changes in the "rules of the game" around them. Without a change in worldview, they might find that their position becomes untenable[2].

For instance, the snapshots of market capitalization in the computing sector (see Figure 1) show how value shifted in the sector from computer makers such as Apple and IBM to GUI/OS[3] manufacturers such as Microsoft and CPU[4] makers such as Intel. More recently, power has migrated again, to ISPs[5] and search engines such as Google. Computer makers didn't realize how the "industry architecture" around them had changed until it was too late. By looking only at their direct competitors they lost the opportunity to create more value and strengthen their own position, allowing previously marginal participants like Microsoft and Intel to occupy key positions in the industry and to change the nature of the sector to their advantage.

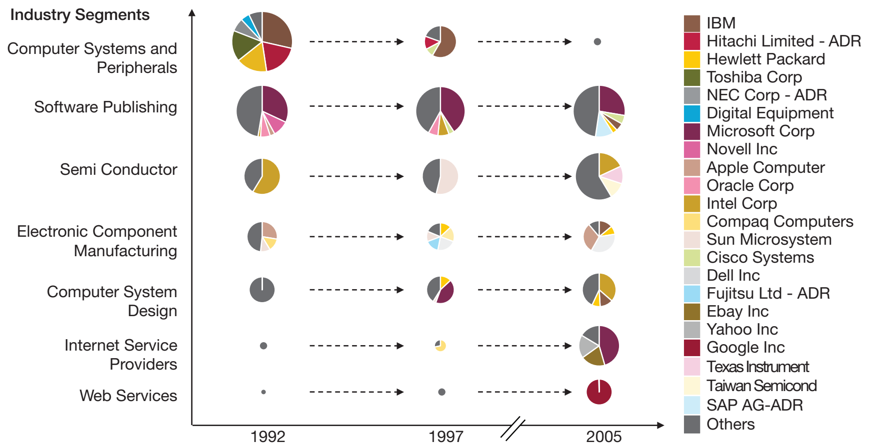
2 Michael G. Jacobides, Thorbjorn Knudsen and Mie Augier, *Benefiting from Innovation: Value Creation, Value Appropriation and the Role of Industry Architectures*, Research Policy, pp. 1200-21, Vol. 35, 2006 and ibid, *Who does What and Who takes What: Benefiting from Innovation*, AIM Management Briefing, December 2006.

3 Graphical User Interface/Operating System.

4 Central Processing Unit.

5 Internet Service Provider.

Figure 1: Market Capitalizations, Computing Sector, 1992–2005



The size of the pie charts represents the market capitalization of the industry segment

Source: *From the Structure of the Value Chain to the Strategic Dynamics of Industry Sectors,* Michael G. Jacobides, Carliss Y. Baldwin & Reza Dijaji, 2007

Companies sticking to traditional sector definitions often fail to see how profits migrate from their own, narrow part of the industry to other parts of the sector

Successful companies aim to impose their own vision on the architecture of their industry. Competition today is about whose "vision" will succeed, and who will create and hang onto the bottleneck. Google transformed Internet search, web advertising, and the means through which digital content can be monetized. Now, it is trying to do the same in mobile telephony. By providing research and development and a platform (Android), it aspires to obtain *de facto* control of browsing and search in mobile devices. While Google encourages competition in complementary segments like handsets or programming and applications, it maintains its grip on the Android browsing and search experience. Compared with the current model, where telecom providers control what happens in the handset, it's clear why Google is keen on this version of the brave new world.

Companies can add value by reorganizing existing products and ideas in a sector as long as they hold a powerful position in the value chain. Or they can unleash value by virtue of a new product or service-delivery model that integrates the value added by an array of participants. Crucially, companies do not need to own the key resources they rely on, as existing theory suggests. They need to ensure that the parts of the value chain they are not active in are "contestable", and that they control the relatively scarce or unique parts.

In the following sections, a guide on how to create or maintain an industry bottleneck is provided. A way to understand how and why the competitive environment is changing, why this matters, and how companies can respond is offered and in addition some specific steps that managers can take to be more effective in these increasingly competitive conditions are suggested.

2 The role of bottlenecks in shaping industry architecture

Research has identified three tactics that companies employ to dominate within an industry architecture.

Enhance mobility across the value chain
First, companies can enhance mobility in the parts of the sector where they do not compete – while collaborating closely with the firms involved. For example, Apple does not physically produce any components for the iPod. Instead, it retains a small, tightly controlled set of suppliers who are given substantial parts of the value-add, but also know they may be replaced at any time. Apple becomes dependent on its collaborators to an extent, but these dependencies are asymmetric; their partners always need them more.

Toyota has a similar approach with its suppliers, making sure that there is potential mobility in the sector. Its top-tier suppliers make more profit than those in lower tiers. But they know they must be extremely open with Toyota regarding their cost structures to stay in the top tier. Toyota actively encourages competition between suppliers to ensure its vehicles become better and cheaper: it works closely with its suppliers but its rules make sure suppliers never forget that they are replaceable[6].

Create the conditions to become a bottleneck
Companies can also change rules and institutions to become the bottleneck. The key is to become the least replaceable part of the sector (or a set of interconnected companies) so that it can be controlled without even owning it. This requires taking a view of the whole sector, identifying how to become less replaceable, then seeing how to change the nature of the relationships. Identifying and bringing the value-add to the other industry participants is vital.

Microsoft used alliances, standards, and industry conventions to become the bottleneck and achieve industry dominance. The industry made it easy to be a PC manufacturer, but harder and harder to compete with Microsoft. The same strategy was behind Apple's ability to create a dominant position for itself in digital music. Apple's control of iTunes locked customers in through its Digital Rights Management (DRM) strategy. Files that were compatible with iPod only played on iPods or PCs. Playability on computers induced users to stick with iTunes. Crucially, the incompatibility of iTunes with other portables creates dependencies on Apple, thus Apple can safely retreat from hardware production, knowing that it dominates the bottleneck in the digital music sector. While Apple has moved away from using DRM as a tool for building a dominant position, nevertheless, the role that it played in building Apple's dominance cannot be overstated. The skill of shaping the environment and of selling the vision is a key driver of success in companies such as Apple.

Redefine roles and responsibilities
With new expectations and a new vision proposed, companies can redefine roles, or "who does what". This means looking, not only at what they themselves need, but also what other players need. Companies need to take a strategic approach when it comes to choosing where they participate and what roles to play in the industry architecture. They need to be frugal with capital commitment and get

6 Michael G. Jacobides and David C. Croson, *Small Numbers Outsourcing: Efficient Procurement Mechanisms, Working Paper, London Business School*, November 2010.

the maximum amount of power to flow to them, even at the expense of some short-term benefits.

The final element in Apple's iPod success is its dominance of the multi-billion accessories market, where it has encouraged others to prosper but has not entered itself. Its restraint is calculated[7]. Even more calculated is its control of downstream pricing: Apple only gives 14% margin for iPods, while the margin on iPod accessories is 25%, so retailers dedicate more shelf space to them. This increases iPod presence in terms of retail and enhances the installed iPod accessory base (and dependencies on Apple), even though Apple is *absent* from the accessory segment. By finding intelligent ways of convincing retailers and business partners to invest in the iPod architecture, Apple ensures that the pie is large enough, and its allies strong enough, to beat the competition *in unison*. This contrasts with Apple's mistakes in the PC sector, where its insularity shunned collaboration and it focused too much on "the traditional PC sector".

Choosing where to focus should not just concern a company's strengths, or opportunities to make money; it should also be about how the firm can best support its position within the industry architecture: how its choices will shape the sector and help it become a bottleneck.

7 The Australian, *Gecko Gear Makes the Case for Quality iPhone Accessories,* October 2010.

3 A toolkit for building architectural advantage

Architectural advantage can be built through a three-step process of identifying bottlenecks, creating architectural advantages through bottlenecks, and finally making architectural thinking a part of the organization's fabric (see Figure 2).

Figure 2: Toolkit for Building Architectural Advantage

1 Identify Bottlenecks

- The bottleneck is the least replaceable part of the value chain or industry architecture

2 Create Architectural Advantages

- Create a map of current industry architecture, customers, and products
- Locate the bottleneck
- Identify how the industry architecture could change
- Identify the impact of change in industry architecture
- Identify how to change current role and become the bottleneck

3 Change Organization's Fabric

Encourage employees to:

- Have a vision of the company's role in the sector
- Be ready to change vision
- Recognize that positions don't last forever
- Have the courage to change routines
- Be outward looking
- Articulate vision outside the organization
- Be strategic, not just nice
- Keep larger picture in mind

Source: Professor Michael G. Jacobides

The most successful companies become the "bottleneck" in their sectors and "rule without owning

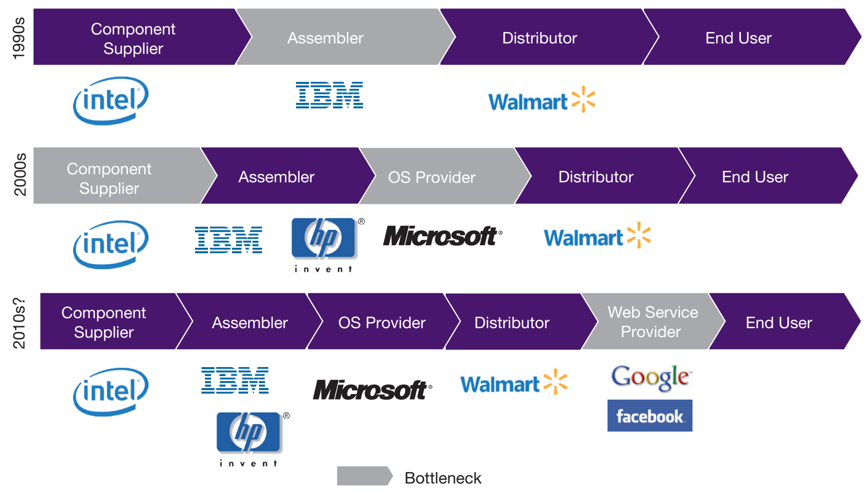
Identify bottlenecks

Bottlenecks are a key part of industry dynamics. But where do they sit in the value chain? The bottleneck is the least replaceable part of the value chain or industry architecture, where value accrues. The greater the mobility of adjacent segments, the more effective the bottleneck becomes. Mobility and dependencies change over time, as does the position of the bottleneck (see Figure 3).

When IBM outsourced the design and development of CPUs and OSs, it believed that the bottleneck rested with "owning the customer base" through branding and support services. But with PCs, this wasn't good enough. PCs were standardized, serviceable by anyone, and customers were not limited to large companies. So, making and selling computers waned as a bottleneck. The bottleneck then shifted to how the computer was used. It turned out that, once accustomed to particular software and a particular operating system, customers would not want to change – and this meant that capturing this segment became critical. Microsoft and Intel increased their interdependencies, making the OS, the GUI, and the software even "stickier" and the CPU more important – even as other parts of the sector became more and more replaceable. As a result, Apple and IBM lost out to Microsoft and Intel. With growing popularity of web services, companies such as Facebook (and their optimistic investors) appear to be betting on them becoming the new bottlenecks (see Figure 3).

It is essential to track shifts in the bottleneck. A bottleneck will not stay still; sometimes it will move upstream, and sometimes downstream. Challengers will try to change it, and will sometimes succeed. Automotive manufacturers, for instance, have been better able to keep their share of value than businesses in

Figure 3: Evolving Bottlenecks in the Computing industry, 1990s–Present



Source: Professor Michael G. Jacobides

other sectors. Even as they increased outsourcing, OEMs[8] defended their industry architecture and didn't render themselves replaceable. Despite hard times for the sector, companies such as Toyota that carefully manages its supply architecture have been successful. It comes down to relative mobility and how it changes over time.

Create architectural advantages through bottlenecks

Clearly, companies need to look beyond the traditional definition of their sector: they should shape it as opposed to just competing in it. But how, in practice, can managers map their sector, design their architecture, and decide how to change their strategy? Companies should take a five-step approach to gain an understanding of where the bottleneck is heading and how to build architectural advantage.

Create a map of current industry architecture, customers, and products

Companies should map different roles in the sector ("who does what"), identify rules connecting players, and the industry architectures that is, the set of players, rules and roles that pertain to the division of labour. With these architectures mapped out, executives should strive to understand whether there is competition between different architectures, and where that can potentially lead to. Finally, they must figure out how different participants make money ("who takes what").

Locate the bottleneck

Companies should focus on identifying who calls the shots in the industry, and why. They should understand what drives value creation in the sector, and who captures value. What is the logic with which the sector is structured? What business models, *within* the context of their architecture, appear to be making more, and why? Executives should also explore whether there is a bottleneck and, if there is, how it can be maintained.

Identify how the industry architecture could change

Companies should figure out whether the current division of labor in the industry could change – and if it can, how? They will need to understand what new technologies or regulations could change the sector, and, consequently, who would gain the most as a result. They should also keep an eye out for potential new entrants as the industry evolves, and how that might affect the sector's dynamics.

8 Original Equipment Manufacturer.

A company becomes a “bottleneck” in a sector by forging alliances, changing the rules of the game and establishing webs of dependencies

Identify the impact of change in industry architecture
Companies need to identify how the bottleneck and the value of current players might change as a result of industry architecture changes. Key questions to consider include the direction in which the bottleneck could potentially move and the subsequent impact on existing companies.

Identify how to change current role and become the bottleneck
Companies need to consider what sector conventions they could change to become more effective. They will need to identify their “desired architecture” and how to achieve it. They should consider forming alliances depending on the objectives of other participants in the sector.

This five-pronged analysis will deliver a vision of how a specific sector is changing, where a company currently stands, and what its future role should be. It also provides a game plan of short-term objectives to satisfy both customers and employees, as well as medium-term objectives in changing the rules of the game.

The next step involves convincing people, inside and outside the organization, to accept the company’s vision.

Make architectural thinking part of the organization’s fabric
As well as creating and sharing a sense of the sector’s rules and roles, organizations must also be able to update their plans as the sector evolves, by instilling in management the skill to be proactive in seeking new opportunities. To do so, the right behaviors, skills, and attitudes must be promoted at manager and employee level.

Have a vision of the company’s role in the sector
Employees and managers may lack a vision of how they can add value to, and connect with, others in the ecosystem. This leads to missed opportunities, sending the wrong signals or eroding the company’s relative position, and being dissonant with the narrative and image the company may want to propose.

Be ready to change vision
Executives sometimes lack the ability and openness to change their own views of their sector. Clinging to simple depictions of reality can prove disastrous in the long-term.

Recognize that positions don’t last forever
A new strategy will only last while conditions allow. Even with success, the objective is still to seek the new bottleneck. It’s important to convey the sense that advantage is temporary, making executives think more creatively about how to add value continuously.

Have the courage to change routines
Adapting to sector changes requires courage; employees will need to revisit old habits. Executives should be able to revisit practices and priorities as business models change.

Be outward-looking
Within an organization, discussions can become introspective. Companies can combat this tendency by redefining rules and roles of the firm, revisiting how they connect with others. To do so, they need to link internal responsibilities and accountability with outward-looking objectives.

Companies should strive to make architectural thinking part of the organization's fabric

Articulate vision outside the organization
With alliances forming in record numbers, it is crucial to foster employee skills that permit seeking new sources of collaborative value and support the company's vision. Selection and promotion criteria must recognize these skills.

Be strategic, not just nice
Managers might believe that the company's external orientation means creating many relationships with outside partners, increasing alliances and so on. But it's important to be strategic and establish a clear sense of why a relationship exists, how it is managed, and the benefits that are expected of it.

Keep a larger picture in mind
Managers often focus on generating volume. This must be tempered by a more strategic sense of how this can actually improve the company's position. This won't happen automatically: it requires reinforcement, monitoring, incentives, training, and effort.

These priorities must be woven into the organization's fabric. The real challenge is integrating these outward-looking insights into daily operations. Changing a company's culture is no mean feat, but doing so can give these ideas real traction. One way to make companies more externally focused is to redesign, opening up the "pores" along the value chain to energize the firm and make it more aware of different opportunities. This might redress the problem of introspection, inherent in traditional vertically integrated companies. This same principle underpins many of the benefits of several "open" structures emerging of late: it allows companies to be more adaptable. If we add "architectural cunning" to this more extrovert orientation, companies can thrive even in challenging settings. Such architectural thinking is an integral part of organizations' re-think of their own "playscript"— of the ways in which they can add and capture value in a rapidly shifting environment[9].

9 Michael G. Jacobides, *Strategy Tools for a Shifting Landscape,* Harvard Business Review, pp. 76-85, Vol. 88, No. 1, January-February 2010 or ibid,*The Play's the Thing*, Business Strategy Review, pp. 58-63, Vol. 21, Issue 2, 2010.

It is essential to track shifts in the bottleneck since the position rarely stays still; sometimes, it will move upstream, sometimes downstream

4 Conclusion

Shaping the sector in which a company operates and seizing new opportunities to win control of the industry's architecture is increasingly becoming a priority. In a shifting landscape a "guerrilla" mentality is key to success. Companies need to be proactive in shaping their sector and ensure that their preferred vision and architecture can be accepted and become dominant. Alternatively, they can seek to improve their position within an existing architecture. As globalization, IT, and deregulation facilitate disintegration and "re-combinations", as options and trading partners grow exponentially and alliances hit all-time high levels, companies need to take a strategic approach. With new options come new challenges and, with opportunities appearing constantly, companies need to be strategic in the way they shape their environment. This is especially so in a time of crisis, such as the one facing firms from telecommunications to healthcare to financial services, the possibilities to re-think and re-shape the architecture have never been better[10].

10 Michael G. Jacobides, *Don't Let this Crisis go to Waste*, Business Strategy Review, pp. 71-75, Vol 20, No 3, August, 2009 and ibid, *New ways of thinking about Business*, Financial Times Mastering Management Series, February, 23, 2009 (available online).

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Michael Jacobides holds the Sir Donald Gordon Chair for Entrepreneurship & Innovation at the London Business School, where he is Associate Professor of Strategic and International Management. A Ghoshal Fellow at the Advanced Institute for Management Research, he studied in Athens, Cambridge, Stanford and Wharton. His research looks at how technology, competition and de-regulation re-shape sectors, changing "who does what" and, as a result, "who takes what" and he studies strategic design, looking at how to restructure and reconfigure value propositions and value chains to cope with domestic and global forces. He works with organizations to help them re-think how companies navigate in shifting landscapes and re-writing their "playscripts". He writes for The Financial Times and HBR in addition to major academic journals. He is based in London.

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