

'Four-Closure': How Amazon, Apple, Facebook & Google are Driving Business Model Innovation.

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Abstract - This paper explores the rapid growth of four internet-based corporations and critiques the extent to which the Internet has developed from being simply a powerful tool and enabler of industry innovation to achieving status as a fully-fledged technology-based business ecosystem.

The need to develop new management theories, tools and techniques to compete with the "Gang of Four" (Amazon, Apple, Google and Facebook) are also discussed in some depth as well as providing a critique of traditional models/strategic approaches and more recent theories. This is considered to be an important area of research because as a new class of Internet company emerges incumbent firms in traditional industries will need to know how to prepare for the new challenges facing them.

Key Words: Business ecosystem; platforms; catalyst; infomediaries; white space; blue ocean strategy.

I. Introduction

It is the purpose of this paper to analyse the recent rise to prominence of four Internet-based companies, Amazon, Apple, Google and Facebook, and to explore the significance of their success in terms of their impact on traditional business models and paradigms relating to the strategic management of modern businesses. The paper will evaluate the rapid exponential growth of these four technology leaders and compare and contrast a range of management tools and approaches. The paper will also critique existing paradigms relating to the role of the Internet and the extent to which it has become a platform ecosystem in its own right.

II. THE FOUR HORSEMAN OF THE APOCALYPSE

Whilst attending the *All Things Digital Conference* (California) on the 31st May, 2011, Erich Schmidt, Executive Chairman of Google, made a widely-reported presentation in which he said that Amazon, Apple, Google and Facebook were leading an Internet-based consumer revolution. He named these companies the "Gang of Four" and said that they had replaced the previous four technology titans: namely Intel, Microsoft, Cisco and Dell. According to Schmidt, although the "Gang of Four's" predecessors were still highly successful they are no longer driving the consumer revolution. Schmidt went on to say that the new technology titans were platforms in their own right who competed and cooperated in various ways but each had their own unique strength. For example, Google

were strong in search; Facebook were strong in social networking; Amazon were strong in commerce and Apple were strong in devices. He also added that the benefits being appropriated by these large companies were equally impressive with a combined worth of half a trillion dollars. Schmidt's conference presentation raised a number of very important questions regarding how managers view the Internet and the strategic approaches and management techniques they should deploy in order to compete with these new digital technology leaders. These concerns are of particular relevance to information and data-intensive industries such as home-entertainment and publishing as well as computing, mobile telecommunications and advertising etc.

III. The Role and Importance of the Internet

For a number of years following the inception of Sir Tim Berners-Lee's World Wide Web in 1991, the Internet was viewed as an environmental technology driver of many industries which could have both a complementary or a disruptive affect. Wal-Mart used the Internet to enhance organisational performance in all areas of the company ranging from front office CRM to back-office logistics whereas other industries experienced a serious decline in revenues, particularly the home entertainment industry.

Michael Porter (2001) in his paper 'Strategy and the Internet' said:

'The Internet is no more than a tool – albeit a powerful one – that can support or damage your firm's strategic positioning' [p. 1]

'.....the Internet.....is an enabling technology – a powerful set of tools that can be used, wisely or unwisely, in almost any industry and as part of almost any strategy' [p. 2]

Gary Hamel, in his book, *The Future of Management* (2007), also commented as follows:

'The web has evolved faster than anything human beings have ever created – largely because it is not a hierarchy. The web is all periphery and no centre. In that sense, it is a direct affront to the organisational model that has predominated since the beginnings of human history'.

Moore (1996) and Iansiti and Levien (2004) in their respective work on business ecosystems also referred to the Internet as an enabler, facilitator or environmental driver. However, Moore's (1996) research on business ecosystems pre-dates the modern

development of the Internet whilst Porter (2001) and Iansiti and Levien's (2004) research was conducted in the "shadow" of the dot com collapse when the Internet was not considered to be fully mature or robust.

If we investigate Moore's (1996) theory of business ecosystems further using the following definition this helps to create more insight into the true role of the Internet today. Moore (1996) defined a business ecosystem as:

'An economic community supported by a foundation of interacting organizations and individuals—the organisms of the business world. This economic community produces goods and services of value to customers, who are themselves members of the ecosystem. The member organizations also include suppliers, lead producers, competitors, and other stakeholders. Over time, they co-evolve their capabilities and roles, and tend to align themselves with the directions set by one or more central companies. Those companies holding leadership roles may change over time, but the function of ecosystem leader is valued by the community because it enables members to move toward shared visions to align their investments and to find mutually supportive roles.'

Analysing Moore's definition it would appear that the "Gang of Four" have developed their own ecosystems along the lines prescribed by Moore. However, in addition to Moore's (1996) theory, the importance of the technology platform and gaining a leadership position has become increasingly important. In his conference speech Schmidt refers to each member of the "Gang of Four" as having their own platform. This also applies to the four technological predecessors, Intel, Microsoft, Cisco and Dell. One could therefore view a modern ecosystem as comprising a combination of smaller ecosystems platforms linked to a central technology platform upon which it is dependent for growth. Since information is the life blood of all organisations and the Internet provides a global digital platform for its utilisation and dissemination this raises the question "is it just a tool and environmental driver or is it an ecosystem in its own right?". The very fact that four major corporations are vying to gain a leadership position on the Internet and are having such a massive financial and consumer impact seriously undermines the paradigm of the web as simply a peripheral enabling technology.

According to Moore's (1993) Evolutionary Stages of a Business Ecosystem Model, a business ecosystem passes through four stages, namely: Stage 1: Pioneer/Birth; Stage 2: Expansion; Stage 3: Leadership; Stage 4: Renewal. Looking at Table 1 below we can see that the Internet has also undergone a similar evolutionary path. During the Foundation Stage and Growth 1 Stage the preliminary "Gang of Four", Intel, Microsoft, Cisco and Dell all played a major role in establishing the Internet infrastructure based on a common industry standard for PCs and through the widespread diffusion of personal computers. This was followed in Growth Stage 2 by the arrival of the new "Gang of Four", Amazon, Apple, Facebook and Google who became the drivers of consumer demand. This also equates to Moore's (1993) Stages

1-3. Table 1: The New Internet-Based Technology Ecosystem (Walton et al. 2011)

Foundation Stage (1976 -1991)	Growth Stage 1 (1992-2000)	Growth Stage 2 (2000-2011)
Key Technologies	Key Technologies	Key Technologies
-Microprocessor -MS Dos/Killer Apps -Intel 486 & Pentium chips	-World Wide Web -Digitisation -Fibre optic cable -Encryption	-Linux -3GSmartphones; iPods, iPads; e-readers -Phone Apps
Key Developments	Key Developments	Key Developments
-Birth of the PC industry -1977: Apple 1-2 -IBM: Open architecture (the 'clones') -Industry standard (WINTEL)	- 'Global Village' -E-commerce -Dot Com boom -Early search engines	-Web 2.0 -Digital downloads and streaming -Open source software -Cloud computing

The significant revenue declines experienced in the information and data-intensive industries following the rise of the "Gang of Four" would therefore imply that many of the incumbent firms failed to see the Internet as a fully-fledged business ecosystem capable of 'creative destruction' (Schumpeter: 1942) but viewed it largely as a peripheral tool and environmental driver. This blind-sightedness and failure to respond has therefore been highly damaging.

IV. MANAGEMENT TOOLS & APPROACHES

This brings us very appropriately to the important question of how to respond to the threats and challenges created by the "Gang of Four" and the extent to which contemporary management tools, theories and techniques are suitable. In his book 'The Future of Management' (2007), Gary Hamel said that management was essentially a 'product' and it should therefore be reinvented in the same way as equivalent tangible offerings in the marketplace:

'Management innovation is anything that substantially alters the way in which the work of management is carried out or significantly modifies customary organisational forms and by doing so advances organisational goals.'

Bearing this in mind it would therefore be a good idea to look at some traditional approaches to strategic analysis and the extent to which these might be modified to suit the changing environment that is being imposed by the "Gang of Four". One of the most respected and well established approaches to strategy is Michael Porter's 'Industry Structure View' based on the Five Forces Framework (1979) and Generic Strategy Model (1985). One of the main drawbacks of Porter's Five Forces framework is its static and linear nature. In dynamic, hyper competitive (D'Aveni:1994) technology markets the model has to be redrawn and updated on a regular basis as competitive positions change. The rigid industry boundaries are also irrelevant since the "Gang of Four" (despite their specialisms) cannot be tied to a single industry. For example, Apple is a computer company operating in the telecoms, music

and film industries; Amazon is an online retailer which also distributes media content via hardware devices; Google is involved in books, software and mobile phones and Facebook now has online retailing capability. Moreover, all of these companies have a “cloud” computing capability. This illustrates what Moore (1996) defined as a business ecosystem:

‘What we are seeing is the end of industry.....The traditional industry boundaries that we’ve all taken for granted are blurring – and in many cases crumbling.....In place of “industry”, I suggest an alternative, more, appropriate term: business ecosystem.....Business ecosystems span a variety of industries. The companies within them co-evolve capabilities around the innovation and competitively to support new products, satisfy customer needs and incorporate the next round of innovation’ [p. 15]

This is in sharp contrast to Porter’s monopolistic competition and barriers to entry. An alternative approach is provided by Brandenburger and Nalebuff’s (1997) Value Net Model. This removes ‘Substitutes’ and replaces them with ‘Complements’. Instead of competing for market share in a zero sum game businesses use complementary relationships to increase demand which sometimes results in co-operation with competitors i.e. Google, Apple and Amazon all developing content agreements with publishers, movie studios and record companies. Finally, Grant (2008) also proposes a sixth force in Porter’s Model which he also refers to as ‘Complements’. Instead of establishing a monopolistic competitive position in an industry each member of the “Gang of Four” has developed their own eco system platforms. Maintaining a leadership position of these platforms and adding value to their ecosystem by encouraging a broad range of suppliers and complementors to contribute resources therefore becomes critical. This includes access to media content, computing hardware, Applications and third party vendors etc. The overall health of the ecosystem is subsequently more important than outright profitability:

‘Becoming a platform leader is like winning the Holy Grail.....platform leaders who succeed can exert a strong influence over the direction of innovation in their industries and thus over the network of firms and customers – the “ecosystem” – that produces and uses complements’ (Gawer and Cusumano: 2002 p. 245).

‘Each member of the Gang of Four has done an excellent job of building and managing its platform. And this is the main reason that each has enjoyed so much success over the last five years’ (Simon: 2011)

When competing for platform leadership in a business ecosystem Porter’s Generic Strategies (1985) of cost and differentiation also become redundant. Porter (2001) re-affirmed that the Internet by its very nature reduced costs and also removed any proprietary differentiation advantage. This is clearly illustrated in the digital download services being provided by three of the major players in the “Gang of Four”. However, instead of establishing a cost or differentiation

advantage Iansiti and Levien (2004) proposed three types of ecosystem strategy which were keystone, dominator and niche’.

A keystone strategy is normally adopted by the platform leader:

‘.....keystones provide a platform on which much of the rest of the ecosystem is built’ (Iansiti and Levien: 2004, p. 71). An effective keystone is therefore responsible for creating and sharing value and ensuring a healthy business ecosystem is maintained providing good financial returns all round. A dominator strategy is not dissimilar to monopolistic competition where a firm seeks to maximise value and returns and the expense of other players. This can be very destructive since it can dissuade suppliers and complementors from wanting to join the network or eco system. Finally, most firms in a business eco system pursue a niche’ strategy. These firms usually comprise the vast network of suppliers and complementors that are essential to the success of the platform leader. If an overly-aggressive dominator strategy is pursued by the platform leader this can reduce the number of niche’ firms thereby reducing the overall health of the business eco system.

Due to the sheer scale of the modern internet-based business ecosystem (Walton et al. 2011) and the large network of niche’ suppliers and complementors; the traditional Helicopter View (Ohmae: 1982) has been rendered inappropriate. This now requires the adoption of a Satellite View (Walton et al. 2011) of the ecosystem network to understand its full potential impact.

Porter’s Value Chain (1998) is another model that has become of limited use when analysing the competitive strategies of internet-based platform companies such as the “Gang of Four”. The move towards modular architectures has led to the disaggregation of value chains making the concept very difficult to apply to a broad disparate network of companies.

‘.....modularity facilitates the development of complements. Modular designs can reduce the costs of innovation for outside firms and encourage the emergence of specialised companies that may invest heavily and creatively in complements. This phenomenon operates in the case of the highly modular PC, for example, with both hardware complementors and software complementors’. (Gawer and Cusumano: 2002 p. 252)

The traditional approaches to marketing have also become irrelevant. Particularly McCarthy’s (1960) Marketing Mix. In terms of the 4Ps, only one of the four companies actually produces a product whilst the others deliver services. The Place factor does not apply due to supply chain disintermediation. Only Apple sell hardware through retailers and Amazon ships physical goods but the move towards digital downloads and streaming of digital content has gathered enormous momentum impacting on the profits and survival of many traditional bricks and mortar businesses. Promotion is aimed at attracting “traffic” onto websites in the case of three out of four of the companies concerned so conventional

promotional mixes are not relevant particularly since all four companies are data rich in terms of customer and market intelligence. This removes the need to carry out traditional market research since customer data is captured through online purchasing and “cloud” applications. Pricing has also become more complex. Prices have to be set so as to encourage “traffic” onto websites and to stimulate buy-in from suppliers and complementors. This can sometimes mean providing free services or subsidised products. For example, search and social networking is free but Google and Amazon make money from the advertising revenues generated by high levels of “traffic”. Meanwhile, Amazon is selling its new tablet at cost price based on a strategy to gain revenues from media content rather than hardware sales.

Moreover, the “Gang of Four” cannot be analysed using a traditional one-sided business model. Although all four companies are consumer –oriented they interact with several groups of customers. Figure 1 below is an illustration of a traditional one sided business:

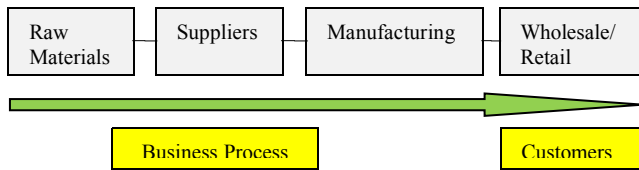


Figure 1: The Traditional One-Sided Business

The “Gang of Four” are therefore classed as two-sided businesses or businesses that compete in multi-sided markets (Evans and SchmaLensee: 2007). This is illustrated in Figures 2 and 3 below:

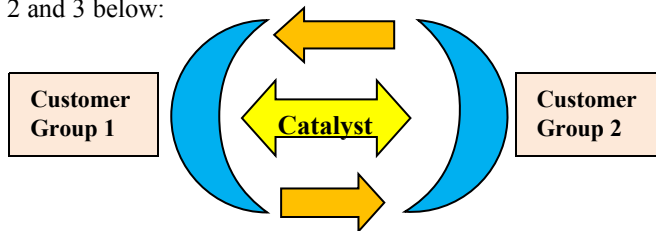


Figure 2: A Two-Sided Catalyst Business

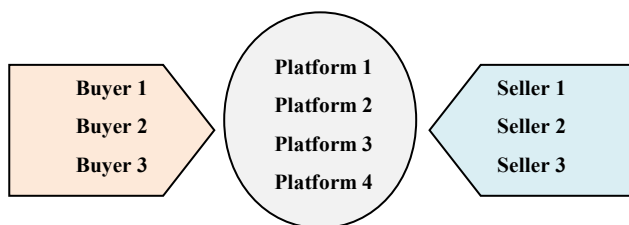


Figure 3: The Gang of Four as ‘Infomediaries’ between Multiple Buyers and Multiple Sellers

According to Evans and SchmaLensee (2007) a catalyst is an entity that has two or more groups of customers who need each other in some way but who can’t capture value from their mutual attraction on their own and rely on the catalyst to facilitate value-creating reactions between them.

The “Gang of Four” can also be viewed as infomediaries who facilitate commercial relationships between buyers and sellers such as “traffic” and advertisers and customers and third party complementors etc.

V. FUTURE STRATEGIC APPROACHES

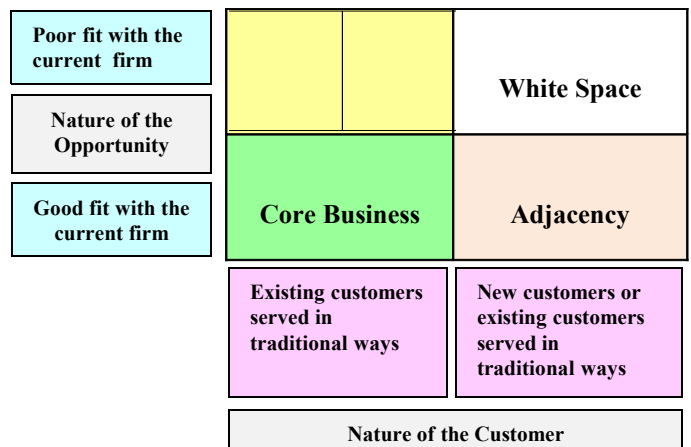
Kim and Mauborgne (2005) recommended the pursuit of blue ocean strategies to escape the highly contested red oceans that typify Western consumer markets. This is exactly what the “Gang of Four” has done by reconstructing market boundaries using the Internet as a core technology platform. Simon (2011) goes a stage further by saying:

‘.....they are winning because they are following an entirely new blueprint and business model. They have spent a great deal of time and money building extremely powerful and valuable ecosystems, partnerships and communities. This new model hinges on powerful ecosystems that, in turn, fuel astounding levels of innovation, profits and growth. Without question, the Gang of Four has built the world’s most valuable and powerful business platforms. In so doing, these companies have done nothing short of redefining business. Collectively, they have introduced the platform as the most important business model of the 21st century. And they have spawned a litany of imitators. Thousands of companies are:

- Building their own platforms
- Creating valuable planks that complement existing platforms
- Modifying their business models to incorporate platforms
- Becoming platform partners

Creating a robust platform does not just hinge on consistently developing great products or services. Rather, it requires a completely different mind-set. It must be at the core of a company’s business model (Simon: 2011).

Finally, this approach is reaffirmed by Johnson (2010) who said that the most successful companies are those which create breakthrough business models through forays into “white space”: uncharted territory well beyond a company’s core business. This strategic approach is illustrated in **Figure 4 Defining the White Space** [below]:



All four companies have adopted blue ocean strategies and undergone breakthrough business model innovation by exploiting “white space” on an ongoing basis. Apple was close to bankruptcy when Steve Jobs launched the iPod followed by iTunes, the iPhone and the iPad. Amazon moved swiftly from being just an online book store to being a place where consumers could find anything on the web before moving media content into digital downloadable format and then introducing of the Kindle e-reader and tablet computer. Google has developed a broad range of products to attract “traffic” including books, software, browsers, Google Earth/Street View, Google Docs, G-mail and now Google+. Finally, Facebook has continued to add functions and features to now include an online store.

VI. CONCLUSION

This paper has analysed the significant growth of the Internet from its early beginnings as a peripheral driver of innovation to being a fully-fledged ecosystem in its own right. This ecosystem is currently dominated by four major technology titans worth approximately one trillion dollars and rising. Both Apple and Google have been ranked number 1 and 2 respectively in the Bloomberg-Business Week league table of ‘The 50 Most Innovative Companies’ in the world with Amazon in sixth place and Facebook also in the top 50. These companies are having a highly disruptive impact on the business models of information and data- industries such as home entertainment and publishing as well as computing, advertising and telecommunications. This has created a need to reinvent management theories and approaches in the light of new technology platforms and ecosystems which are now blurring or redrawing traditional market boundaries as firms compete across industries. Although recent strategic approaches such as ‘blue ocean strategies’ (Kim and Mauborgne: 2005) and ‘exploiting white space’ (Johnson: 2010) have emerged very few companies have adopted these methods. It is therefore imperative for the incumbent firms in industries that are threatened by the “Gang of Four” to adopt a Satellite View (Walton et al. 2011) of their own ecosystem and reinvent their own business models to meet the challenges of the twenty first century (Hamel and Prahalad: 1994). If they fail to do this then two existing business concepts may suddenly take on renewed relevance, namely Joseph Schumpeter’s ‘gale of creative destruction’ (1942) and Katherine Harrigan’s ‘End game Strategies’ (1983).

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