

# **PICKING WINNERS, AVOIDING LOSERS:**

## **A Guide to Disruptive Innovation**

### **for Investors, Business Leaders And Policy Makers**

(Version 1.5)

A white paper by

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#### **EXECUTIVE SUMMARY**

Investors, business leaders, and policy makers can invest their time and resources into two types of innovations: (a) those that sustain the status quo or (b) those that change and disrupt the rules of the game. Sustaining innovations milk the cash cows - this is good business practice. However, there comes a time when someone, somewhere is investing resources into the very thing that will kill this revenue stream. Hence, investors, business leaders, and policy makers have a choice: invest into sustaining innovation or to look for new, less well understood disruptive innovations that will transform their markets and deliver breakthrough wealth creation. This paper attempts to address how and when to identify and exploit disruptive innovation.

The early supporters of businesses such as Microsoft, Amazon, Intel, Federal Express and Google are now seen as heroes – people with the amazing foresight to pick winners. Forgotten are those who got burnt by investing in losers. Our analysis, which is not presented here (but feel free to contact us to see it), shows that it is those with a natural or nurtured understanding of a phenomenon called Disruptive Innovation who are capable of picking the winners. Hence, this document has been written to answer the following question:

“What is DISRUPTIVE INNOVATION,  
what are the dynamics of DISRUPTIVE CHANGE and  
how can this knowledge help us to PICK WINNING INVESTMENTS?”

To answer this question, we have turned primarily to the work of Professor Clayton Christensen, Harvard University’s and one of the world’s leading authorities on Disruptive Innovation. We have attempted to condense his three books, numerous journal, magazine and classroom articles into this simple to understand document. We have also integrated the cutting edge work of other authors that have enhanced our understanding. The document is presented in four parts:

- first, we present how the dynamics of disruptive change at an industry, market and business level is driven by value network evolution,
- second, we broadly define the differing types of innovation that can be delivered,
- third, we illustrate the typical mistakes that people make when faced with potentially disruptive innovations, and
- finally, we propose questions that will allow you to explore the disruptive potential of a business or investment opportunity.

**About the Authors:**

**Peter Thomond** (p.thmond@qut.edu.au)

Pete's everyday job is to *unravel the secrets of Disruptive Innovation*. From 2001 to 2005, based at *Cranfield University* in the UK, he co-managed the "Disrupt-it" project, a **€3 million** European Commission co-sponsored programme of *research and business tool development*. During this time Pete also earned his *PhD in the field of innovation management*. In September of 2005, the Australian Centre for Business Research invited Pete to move 'down-under' to the *Brisbane Graduate School of Business* (at the Queensland University of Technology), from here he continues to develop his research and consulting *on discontinuous and disruptive innovation*.

**Jim Plamondon** (jim@thumtronics.com)

Jim worked as a software developer for a number of years before joining the *Microsoft Corporation*, where he worked from 1992 until 2000, in both *Silicon Valley* and Redmond. As a *'Technical Evangelist'* at Microsoft, Jim was *responsible for establishing Microsoft's proprietary technologies as de facto standards*. He designed and executed some of Microsoft's most successful technology-standardization campaigns and taught other Microsoft employees how to do so. *Since "retiring"* from Microsoft, Jim migrated to Australia, *founded a non-profit community-development organization* in Western Australia, called *The Busselton Challenge*, started a cutting edge computer training course at his local high school, funded academic research into the effects of rapid "Sea Change" population growth on small coastal communities and *founded Thumtronics Ltd*. As Thumtronics CEO, Jim is *now poised to disrupt the \$40 billion global musical instrument & lesson industries*.

## INTRODUCTION

Microsoft, Amazon, Intel, Federal Express and Google have a number of features in common:

- > from tiny start-ups they pioneered and revolutionised entire global industries;
- > they are likely to dominate their industries for at least the next few decades;
- > they have helped drive the USA's transition from a failing manufacturing based economy to global, high-tech, knowledge leadership, and
- > they have delivered 'heroic profits' to their early investors.

Most people would have you believe that picking stocks, choosing which products and services to develop, which processes to change, or deciding where to make industry or infrastructure investments, is a game of chance. This point of view would lead you to believe that the USA's success story is riddled with luck and happenstance but this is simply not true.

American investors and business leaders were not born lucky - vast and growing numbers of them have acquired, developed and paid for knowledge to open the 'black box' of innovation. One of the specific factors that seems to have delivered their edge over the rest of the world is their insight into the subject of Disruptive Innovation.

It is the purpose of this document to take the knowledge of the Disruptive Innovation's most famous and successful proponent, Harvard University's best selling author - Professor Clayton Christensen - plus some other sharp insights and to distil them into these short pages. Our aim is that our readers can begin to improve their odds of picking winners and avoiding losers.

This document is presented in four parts:

- > In part one, we outline the dynamics of disruptive change at an industry, market and firm level by discussing value network evolution. Specifically we address the movements between integrated and modularized organisations and the perpetual habit of businesses to over-supply their customers with product and service performance that they simply do not need.
- > In part two, we show that innovation can be categorised into two differing types – sustaining or disruptive - and we explain both.
- > In part three we describe the typical mistakes that business leaders make when faced with potentially disruptive innovations.
- > In part four, we propose questions that we hope will help you to explore the disruptive potential of a firm or investment opportunity.

## VALUE NETWORK EVOLUTION

Every organisation, market and industry has a ‘value network’<sup>1</sup>, a complex set of social and technical resources and relationships that when combined create value in the form of knowledge, products and services. The elements of an organisation’s value network can be divided into internal and external networks. The interactions of people within these networks generate research, development, design, production, marketing, sales, and distribution to create the overall value of products and services. The goal of analysing a value network is to identify the drivers of costs and value at each activity, and then maximize value creation while minimizing costs. In doing so managers must decide whether to execute the activity in-house; to outsource that activity to a specialist; or to specialize in just that one activity. It is these decisions and how and when they are taken that drives the evolution of a value network.

## INTEGRATION, MODULARITY AND SPECIALIZATION

Executing an activity in-house gives the firm complete control over that activity. Those activities which are not outsourced are said to be *integrated* into the firm. A firm that executes all activities in-house is said to be *vertically integrated*. The advantage of integration is that it allows a core competency in an activity to be developed within a business that is not available to its competitors (Prahalad and Hamel, 1990; **REF**).

Outsourcing an activity to a specialist allows the firm to take advantage of the specialist’s core competency in that activity. A firm that outsources most of its activities is said to be *modular*. The advantage of modularity is that it reduces the number of core competencies that a business has to develop and maintain, allowing it to focus on those competencies that add the most value.

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<sup>1</sup> Michael Porter (1985) used the term ‘value chain’ to help categorise the generic value-adding activities of an organization. He divided these activities into “primary activities” and “support activities”. Primary activities include an organisation’s logistics, operations, marketing, sales, and customer service - these are supported by activities such as administrative infrastructure management, human resources management, R&D, and procurement. The concept of the value chain offers managers an invaluable analytical framework, yet as it was developed following the analysis of 1980’s industrial manufacturers, it has been critiqued for lacking the complexity to deal with modern businesses. Consequently, the term ‘value network’ has emerged as an extension and enhancement of the value chain concept.

## PICKING WINNERS, AVOIDING LOSERS

A specialist business can perform an activity for many clients; as such, specialists are integrated by definition.

Business leaders must act to maximise the economic value that they can capture from their organisations' products and inventions. Hence, the concepts of integration and modularity also apply to product architectures. For example, most laptop computers have an integrated monitor, whereas desktop computers usually have modular monitors. A management teams decisions regarding their product architecture often become reflected in their corporate architecture, and *vice versa*. For example, the decision to use a modular product architecture makes it easier for a business to outsource the product's components (modules), whereas using a integrated product architecture tends to require vertical integration.

In sum, decisions regarding integration, modularity and specialization should be made to capture economic value, yet, as we will show, managers often fail to consistently maximise value by failing to take into account the maturity of their products and industries.

## OVER-SUPPLYING CUSTOMERS' NEEDS: THE TYRANNY OF SUCCESS

The performance of a product and the rate at which performance improves will change over time - such changes can be graphically represented as an S-curve (Foster, 1985). S-curves can be plotted for all industries although their shape and size is influenced by scientific knowledge, market demand, and levels of investment and commercialisation (Tushman and O'Reilly, 1997).

Analyses of s-curves illustrate that when an industry is new, the performance of its products will often not match the demands of its customers – customers are in effect under-supplied. However, because a fledgling industry helps its customers to complete tasks that they could not do before, its customers are not only willing to buy its produce but also willing to pay an extra margin for the industry's latest technological advances. Hence, the managers of an industry's leading businesses, those that Christensen calls the industry's incumbents, have well developed systems to elicit and use their most demanding customers' feedback. Feedback guides the development of the incumbents' new products, which in turn helps their customers to complete their important tasks better and better, year after year. S-curve analysis also shows that as an industry matures, inevitable technological maturity will result in managers facing the diminishing ability to offer substantial improvements in performance.

Christensen's breakthrough analysis revealed an overlooked feature of the s-curve pattern. As an industry matures, its incumbents' managers remain focused on what has delivered success in their recent past: the improvement of the key product features that have become the basis of competition. Eventually, the incumbents' products begin to supply their *least*-demanding customers with performance that they simply do not require. As over-supplied customers do not need the latest features they soon refuse to pay extra for them. As even more features are added, more customers' needs are over-supplied. Once the incumbents are over-supplying the industry's *most*-demanding customers with unwanted performance there is no one left willing to pay a premium for new features. Tapped by the tyranny of success, with customers who are over-supplied with performance and infrastructure aligned to continue this supply, the incumbents' margins can teeter on the brink of collapse.

## MODULARITY: A RESPONSE TO PERFORMANCE OVERSUPPLY

Technologies that reach the maturity phase of their S-curves, whether at a component or architectural level, can become vulnerable to radically different classes of products (Christensen, 1992a; 1992b). Christensen's analysis reveals that when a given link in the industry's value

network is about to over-supply a significant portion of its customers' needs, it is economically efficient for one or more firms to develop a modular interface around the over-supplied link and to outsource it to a specialist. This works best if the whole industry can agree on the module's specifications.

Modularisation allows managers to capture more economic value by shifting their resources to those aspects of their products which have not yet over-supplied customers' needs, and can therefore still benefit from integration. The modular component or activity can then be supplied by anyone, and becomes a commodity as far as the incumbents are concerned. Every industry uses modularity to a greater or lesser extent (Table 1).

Industry	Personal Computing	Music Products
Examples of modularity	<ul style="list-style-type: none"> <li>&gt; The CD rom</li> <li>&gt; The __ inch hard drive.</li> <li>&gt; etc</li> </ul>	<ul style="list-style-type: none"> <li>&gt; The standard ¼-inch (6.5 mm) audio jack, at either end of a cable connecting an electric guitar to its amplifier</li> <li>&gt; The MIDI specification, which defines the interface between electronic music controllers and sound-generating electronics</li> <li>&gt; MusicXML, which defines the interface between electronic music notation data and computer programs designed to display or manipulate that data.</li> <li>&gt; The software “plug-in” interfaces that allow new music notations to be supported by existing music editing programs such as ‘Finale!’ and Sibelius (the biggest selling music software in the USA and Europe respectively).</li> </ul>

#### WHEN TO INTEGRATE, OUTSOURCE OR SPECIALIZE

Managers can capture economic value by deciding which activities and components to integrate, outsource or specialize. However, identifying the activities and components and the most appropriate moment when to take such decisions has proved to be an illusive task. Christensen's analysis provides a simple solution:

- At any given time, to maximize profits, business leaders should (a) outsource those activities and components that *over*-supply the needs of potential customers, while (b) integrating those activities and components that *under*-supply the needs of potential customers, *i.e.*, those which have significant scope for sustaining innovations for which customers will be willing to pay a premium.

This rule poses three challenges. First, firms must be able to restructure flexibly to change their focus of integration as their value network evolves. Second, firms must understand how this

## PICKING WINNERS, AVOIDING LOSERS

evolution changes the pool of potential customers. Third, firms must look beyond the needs of their *current* customers to embrace the needs of their *potential* customers, too.

Christensen's most recent advances in the science of innovation is *The Law of Conservation of Attractive Profits*, or more simply the *Conservation of Integration*. The idea is that whenever over-supplying turns a given link in the value network into a profitless, commoditized module, the opportunity to earn attractive profits from a proprietary *integrated* product will emerge at an adjacent link. Hence the total amount of integration (and profit-potential) is constant; it just moves around the value network.

How context of value network evolution drives disruptive innovation will be discussed in the next section.

## TYPES OF INNOVATIONS

Sustaining innovations maintain the trajectory of improvement that a market's leaders are currently following. They can be minor or major, conservative or radical, to products or to processes, but by definition they sustain the current trajectory. Alternatively non-sustaining innovations disrupt an industry's established trajectory of improvement by establishing a completely different trajectory. In doing so, they re-shape the exiting terms of economic engagement in established industries and provide business leaders with an opportunity to create significant new wealth and substantial long-term value for their organisations. In this section we consider these two distinctions further.

### SUSTAINING INNOVATIONS

Incumbents excel at commercializing innovations that:

- > leverage the *resources* the incumbent has available,
- > fit into the incumbent's existing organization and commercialization *processes*, and
- > can be prioritized by the incumbent's *values*.

For example, in the music industry Marshall would find it easy to commercialize innovations that make guitar amps louder, likewise for Roland to commercialize innovations that allow keyboard synthesizers to produce new sounds. Over time, those firms have developed the resources, processes, and values to do exactly those things very efficiently. Innovations that sustain the product-improvement trajectories of *the incumbents* are called *sustaining* innovations.

It is very difficult for a small start-up company to build a profitable business around a sustaining innovation, because the incumbent's extensive resources, processes, and values can be brought to bear directly on its smaller competitor. Such start-ups are often acquired inexpensively by incumbents, returning little value to the start-up's investors. This would indicate *that investments into small companies that only offer only sustaining innovations to industry incumbent are unlikely to offer significant dividends*.

### DISRUPTIVE INNOVATIONS

With the exclusion of turbulence caused by regulatory changes or natural and man made disasters, markets and industries can be disrupted by innovations that are not sustaining to an industry's

incumbents. Such non-sustaining innovations appear to deliver their disruptive potential in three dominant forms, each of which emerge from the circumstances of the market and the strategies employed innovators.

*a. Low-End Disruption:*

A *low-end* disruptive innovation offers over-supplied customers an inferior solution at much lower cost. Casio's *Casiotone* electronic keyboards come to mind.

*b. New Market Disruption:*

A *new-market* disruptive innovation attracts new customers to an industry by making it easier for customers to do something that previously required too much skill, knowledge, or inconvenience. Apple's *GarageBand*, for example, makes it so easy to assemble loops that anyone can do it.

*c. Displacing Disruption:*

A *displacing* disruptive innovation replaces a well-defined module with a specialist's product. For example, the *MIDI* (Musical Instrument Digital Interface) standard allowed *software-based synthesizers* to replace the *hardware-based synthesizers* offered by the incumbents who originally defined MIDI. Displacing disruptive innovations can start low-end and/or new market disruptions. Starting out as specialist provider of a unique module allows a start-up firm to focus its limited resources on its one greatest point of differentiation. Later, it can expand outward to integrate adjacent links in the industry's value network.

Time and again the business press reports on incumbents who have excelled at commercializing *sustaining* innovations, but get sidelined by start-ups armed with *disruptive* innovations. Like wise, there are stories of start-ups with disruptive potential that get killed with incumbents. How and why this happens can be explained by differences in Innovation Strategy, which is the subject of the next section.

## **INNOVATION STRATEGY**

Generally speaking, incumbent firms are managed by people who are as smart, educated, experienced, and forward-looking as their disruptive challengers, if not more so. Yet, in example after example throughout business history, incumbents have lost their leadership to scrappy young start-ups with disruptive innovations. An explanation of this phenomenon can be found in an analysis of innovation strategy; in particular the efforts made to create asymmetries between businesses, the temptation to cram potentially disruptive innovations into existing structures and the pursuit of new markets.

### **ASYMMETRY: THE DRIVER OF LOW-END DISRUPTION**

Successfully disruptive challengers take advantage of the *asymmetries* that can emerge between themselves and their industry's incumbents. These asymmetries can lead the incumbent to retreat from the challenger for *sound business reasons*, which smart, educated, experienced, and forward-looking managers at the incumbents rationally decide to follow. Christensen's analysis of disruptive innovations revealed a pattern that has occurred repeatedly throughout the history of business. The 'story' commonly drawn from his work is summarised in Box 1 below, it is driven by the inevitable business push for margin-seeking, which leads to oversupplying customers with performance they do not need.

**Box 1: Christensen's common pattern of disruptive innovation.**

Imagine an industry which has three tiers of customers: A, B, and C. Tier A customers buy in low volume, at high margins of 20%. Tier B customers buy in higher volume, but at only 10%. Tier C has the highest volume, but serving them earns the incumbent only 5%.

Now, imagine that a challenger emerges the industry with a simple, cheap, crude, low-end disruption that can profitably meet the needs of the industry's most over-supplied customers – those in Tier C – with a product that's not as good as the incumbent's, but which is much cheaper.

The managers at the industry's incumbent firm have a choice to make: they can either spend a high proportion of its limited resources defending its Tier C customers from the disruptor's attack, or they can spend that same money expanding the incumbent's share of the higher-margin Tier A and B customers.

Running the numbers clearly shows that the latter choice – focusing the incumbent's resources on the higher-margin customers – is the best choice. So its managers make the *rational business decision* to retreat from the disruptor's attack, abandoning its Tier C customers. Investing in its highest-margin tiers allow the incumbent to streamline its expenses. Its margins go up, its share price goes up, its managers get bonuses, and the disruptor takes over Tier C.

But the disruptor wants to move up-margin, too. With the profit it earns from serving Tier C, the disruptor's R&D improves its product so it meets the needs of the next tier up (Tier B), while remaining simpler and cheaper than the incumbents' products. With this improved product, the disruptor attacks Tier B.

Once again, the incumbent's managers have to decide how to invest its limited resources, and once again the numbers clearly show that retreating from Tier B is the right business choice. Once again, the incumbent abandons its lowest-margin customers and invest in growing its share of the next tier (Tier A). Once again, the incumbent's costs are streamlined. Once again, its margins go up, its share price goes up, its managers get bonuses, and the disruptor takes over Tier B.

With the profits the disruptor is now earning from Tier B and Tier C, its R&D again improves its simple, cheap products until they meet the refined needs of Tier A customers. The incumbents suddenly realize that they can't retreat any further; they have to stand and fight for their Tier A customers...but it's too late. The low-end challenger's products are simple, cheap, and good enough for all but the most demanding Tier A customers. The incumbent firm, once the dominant player in its industry, finds that it has only a tiny high-end niche left. Eventually, it sells out to the disruptor, which uses the former-incumbent's name to brand its highest-end products.

All firms are motivated by the same rational desire to earn ever-higher margins. In the above example, however, the incumbents and low-end challenger perceive the contested tier differently. To the low-end disruptor, the contested tier is high-margin; to the incumbent, it's low margin. This is an *asymmetry of perception*.

In the context of disruptive innovations, an *asymmetry* is any difference that leads an incumbent to retreat from a disruptor *for sound business reasons*. Other kinds of asymmetries include



asymmetries of motivation, resources, and skill. Such asymmetries weaken or even remove an incumbent's strengths, because they are not brought to bear against the disruptor until it is too late. Disruptors should seek every opportunity to create similar asymmetries in their products, business models, and value networks.

#### CRAMMING: KILLING DISRUPTIVE POTENTIAL

Whenever an incumbent invents something that could disrupt its own business, it inevitably tries to *cram* that invention into its existing value network. The invention is folded by the network's dominant values, spindled to fit the network's resources, and mutilated by the network's commercialization processes – wringing out its disruptive potential and turning it into a sustaining innovation. This occurs because it is precisely what the incumbent's resources, processes, and values have been developed to do: deliver sustaining innovations to its most-valuable customers. In effect, the goal of the cramming process is to remove any asymmetries that would make the innovation disruptive to the incumbent.

Incumbents aren't the only ones who strip the asymmetries from their innovations by cramming. Often, market challengers with highly-disruptive innovations attempt to cram them into the industry's established value network in exactly the same way, thinking that by doing so they can take advantage of the industry's existing value network – but this never works. By its very nature, the industry's established value network forces compromises on the challenger's product and business model that strip away its asymmetries, and make it a *sustaining* innovation instead.

The idea of asymmetries explains why small challengers with sustaining innovations always lose to incumbents. Stripping away an innovation's asymmetries forces the innovator to attack the incumbent's strengths – a losing strategy every time.

The industry's existing value network has been carefully honed and crafted to strip asymmetries from every innovation that passes through it. That's why it should be *avoided* wherever possible. To quote Christensen c, p. , “Firms have the best chance of creating asymmetries if they reside in or build a freestanding value network, completely separate from their competitors.”

Creating an entirely new value network may seem like a daunting challenge, but it can actually be quite simple in today's globalised and Internet-connected world. This issue will be revisited in the case study, later in this article.

In sum, it is therefore essential that disruptors *create* asymmetries *avoid* cramming, thereby allowing themselves to attack the industry's incumbents where they are weak. In addition to low-end strategies disruptive challengers can create new markets that encroach and eventually disrupt established markets.

#### NEW MARKET DISRUPTION

While low-end disruptive innovation attempts to deliver low-cost products to over-supplied customers, thus taking market share from an industry's incumbents, the purpose of a *new market* disruptive innovation is to create an entirely new market – a market in which the incumbents and their value network play as small a role as possible.

Kim and Mauborgne (2005) call the new markets created by new market disruptions “blue oceans,” and recommend similar strategies for maximizing asymmetries. Tellis and Golder (2002) describe new market disruptions as “a unique vision of the mass market.”

According to Christensen “New market disruptions have the greatest potential for long-term industry change. However, they are the hardest innovations to identify... How can you know

## PICKING WINNERS, AVOIDING LOSERS

whether current non-consumers can be enticed to begin consuming? When only a fraction of a population is using a product, of course, some of the non-consumption may simply reflect the fact that there just isn't a job needing to be done in the lives of those non-consumers." Christensen's solution to identifying potentially-profitable opportunities and to converting non-consumers to consumers, is to look for *failed attempts to consume* the industry's products – attempts that fail because those products are too complicated, unreliable, or otherwise unsatisfactory.

According to Christensen (1997: 80), when Sony, the consumer electronics giant, was in its most-successful era, its technologists and managers identified situations in which "miniaturized, solid-state electronics technology might help a larger population of less-skilled and less-affluent people to accomplish, more conveniently and at less expense, jobs that they were already trying to get done through awkward, unsatisfactory means." Christensen's key point here is that people were *already trying to get a job done*, but were *failing* because the industry's products required too much skill, expense, or tolerance for awkwardness and dissatisfaction.

In such circumstances, customers will often *internalize the failure*, thinking that the fault lies within themselves, rather than in the industry's products. By helping these customers succeed, the disruptive innovator helps them do their job and also *makes them feel better about themselves* – a marketer's dream.

If a disruptor's products can deliver *success* to the mass market, Tellis and Golder (2002: 135) claim that sales can rapidly increase many times over: "The profits from such increases are huge, and can sustain innovation and investment for greater rewards in future. Overall, the downside of failure in such cases tends to be several times smaller than the upside of success". Christensen goes one step further, he states: "making highly differentiable products with strong cost advantages is a license to print money – and lots of it" (Christensen, 2003: 151). Due to asymmetries, this money can be printed without significant competition. Kim and Mauborgne (2005: 185) state that more often than not, new-market disruptors "will go without credible challenges for ten to fifteen years". That's why investing in new market disruptions can be a relatively *low-risk, high-return* strategy.

All this analysis prompts a pertinent two-part question: what signals should investors look for, to identify (a) innovations with new market disruptive potential, and (b) firms with the right skills and strategies to exploit their disruptive potential?

### WHAT ARE THE SIGNALS OF SUCCESS?

What questions should you ask yourself when attempting to identify and deliver disruptive innovation, what are the signals of success?

According to Kim and Mauborgne (2005: 37), the initial signals of high potential success are:

- > Divergence: a product benefit that is distinctly different from its competitors;
- > Focus: a narrow and relentless focus on delivering that unique benefit to customers; and
- > Tagline: a memorable slogan that sums up the product's unique benefit in a clear, concise, and compelling way.

Once those criteria are met, they recommend asking the following questions (ibid, p 118):

- > Does the product deliver a unique, valuable benefit to customers?
- > Is its price easily affordable by the mass market?
- > Are the firm's costs low enough to earn an attractive profit at that price?

- > Is the firm's management aware of, and addressing, the barriers to adoption that might otherwise prevent or delay the mass market's adoption of the product?

Tellis and Golder (2002: 41) suggest looking for a slightly different but overlapping set of criteria:

- > Vision: a unique, revolutionary, and inspiring vision of serving the mass market.
- > Will: persistence under adversity, relentless innovation, the commitment of financial resources, and asset leverage.

Christensen (2004:22-23, 49 and 68-69) suggests the most extensive set of questions:

- > What jobs are customers in the industry trying to get done? Are the customers not served, under-supplied, or over-supplied by current products?
- > Do integrated or specialist business models currently prevail? Are its interfaces modular?
- > Where are new business models emerging? Is there growth in fringe markets?
- > What are the incumbents' business models? What are their motivations? What are their skills?
- > Where are the symmetries and asymmetries? Do the asymmetries tilt in favour of the incumbent or the disruptive challenger? Is it possible to create a business model that creates asymmetries?
- > Does the innovation naturally fit its target market? Is there evidence of cramming?
- > Is the company in a situation in which the right strategy needs to emerge? Is the firm giving itself the freedom to encourage emergent forces? Have managers wrestled with problems that they are likely to have to face again? Have they shown the capacity to learn?

Our synthesis of these suggests there are essentially four important signals of success and questions to ask:

- > Does the product or service deliver a unique benefit to which the mass market is likely to respond?
- > Does the firm's management already have experience with the introduction and exploitation of disruptive innovations?
- > Does the firm's strategy maximize its disruptive potential – for example, by creating asymmetries, avoiding cramming, keeping costs and prices low, and integrating or modularizing appropriately – while making it possible to learn and adapt rapidly?
- > Are the firm's owners willing to commit their own resources, and capable of getting other people to commit theirs, to maximize the firm's disruptive potential?

A note from Jim:

Attending college in the late 1970's, I made ends meet by playing blackjack – but I'm no gambler. By studying the theory of card-counting, I gained a consistent statistical advantage over the casino. The more I bet, the more I won. The gamblers seated next to me could have studied

## PICKING WINNERS, AVOIDING LOSERS

card-counting, too, but instead they relied on gut instinct – and lost. For them, blackjack was a game of chance; for me, it was a game of skill.

Most people would have you believe that innovation is a game of luck but it doesn't have to be. My experience has shown that by studying the dynamics of disruptive innovation you too can improve your odds of picking winners and avoiding losers.

- Jim

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