MASTERING the HYPE CYCLE

HOW TO CHOOSE THE **RIGHT INNOVATION** AT THE RIGHT TIME

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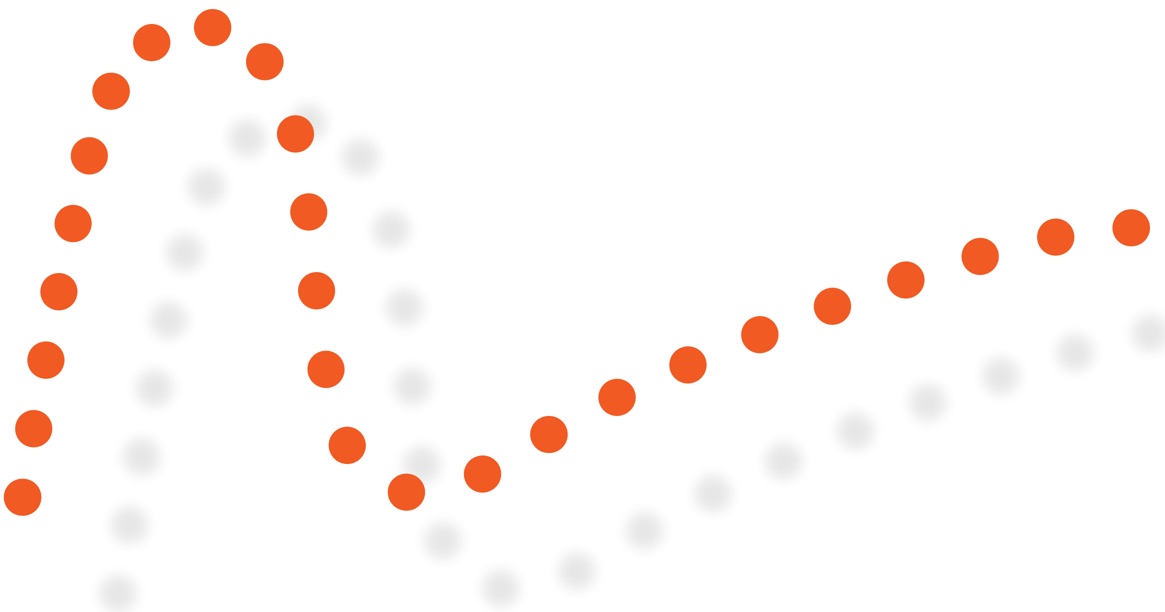
GARTNER, INC.



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Hype Is Everywhere

The hype cycle is not a new phenomenon, but one that repeats itself with each innovation that somehow captures people's imagination. The inventor of a new communications technology once predicted it would "bind man to his fellow-man in such bonds of amity as to put an end to war."[7] Government officials picked up the mantra, toasting the innovation that was "removing causes of misunderstanding, and promoting peace and harmony throughout the world."[8] These hopeful and familiar sentiments were expressed in the nineteenth century in a society smitten with the incredible potential of the telegraph. The same pattern occurred with canals and railroads in the 1700s and 1800s; the telephone in the late nineteenth and early twentieth centuries; automobiles and radio in the early decades of the twentieth century; the jet engine, rockets, and atomic energy in the 1950s and '60s; the Internet in the 1990s; and most recently biotechnology and nanotechnology. People have been swept up with the possibility and then disappointed with the initial reality of the next new thing for centuries.

While new technology is the catalyst for many of these wild rides through the hype cycle, the same effect occurs with higher-level concepts and abstract ideas such as management trends. Organizations have greeted innovations such as business process reengineering, knowledge management, activity-based costing, and Six Sigma with unquestioning enthusiasm and often heavy investment. And many of those organizations have gone on to the same kind of disillusionment they felt over the failure of some new business theory or technical marvel to deliver on its initial promise.

In one example, we have tracked the hype cycle surrounding the management science concept of "business models". The term *business model* arose in the mid-1990s when the Internet offered new ways to structure and optimize commercial activities (see figure 1-3). With the dot-com crash, interest in the concept of new business models declined, until clear winners emerging from the crash showed that at least some of the new approaches were viable and triggered renewed activity.

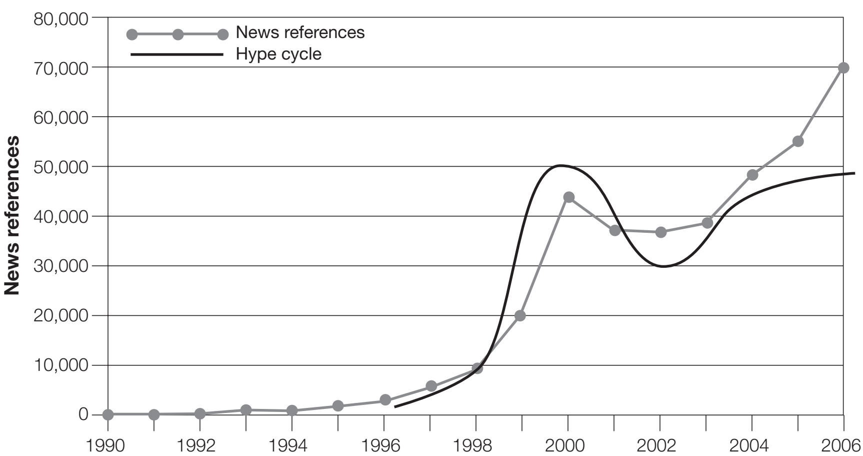
Investors as well are only too aware of the hype effect as a new company or market gains in popularity. Though stock prices are influenced by many factors and are inherently unpredictable, a hot new company founded on a particular innovation can find its stock subjected to the forces of the hype cycle. Look, for example, at Amazon's stock price for the period 1998–2005, which included the Internet boom and bust (see figure 1-4).

This Amazon chart is not unique—the stock price charts for other companies founded on the innovation of the Web itself, like Yahoo!, followed exactly the same pattern over that period.

Hype cycles can also be found in macroeconomic phenomena, such as the recent "gold rush" of foreign companies investing in the hope of getting a share of China's rapid growth. Here the Chinese government statistic for foreign direct investment follows a hype cycle–like trajectory (see figure 1-5).

FIGURE 1-3

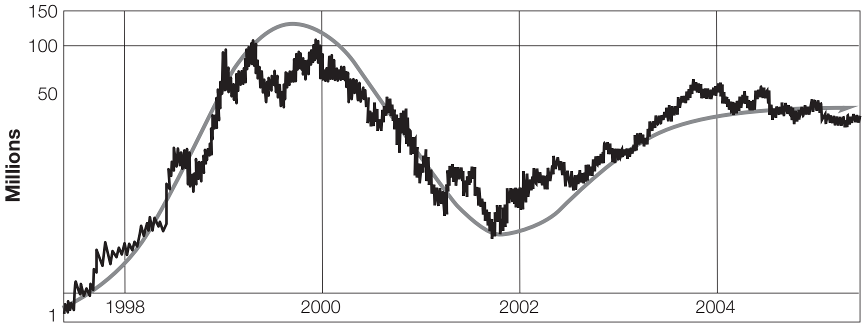
Number of articles using the term *business model* from 1990 to 2006



Source: Gartner research using Factiva.

FIGURE 1-4

Amazon stock price, 1998 to 2005



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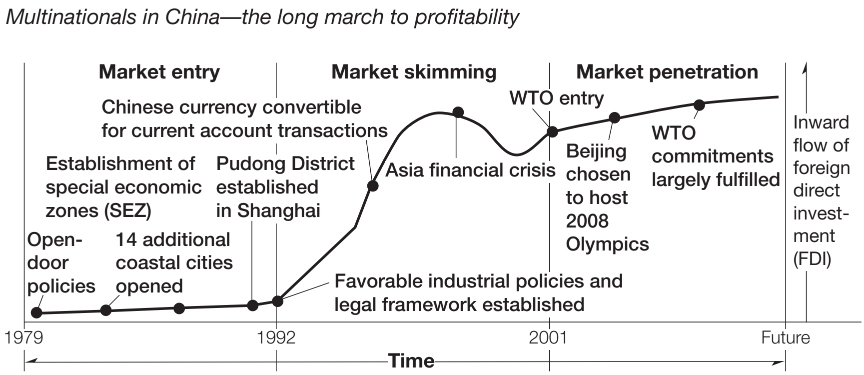
As we look across the range of areas where the hype cycle comes into effect, it's worth examining the axes along which we are measuring these effects. Whether it's a management trend, a new business process, or a new technology, when any innovation arises, it starts raw and gradually matures over time. The horizontal axis of the hype cycle is that inescapable independent variable of time. But what exactly is the variable on the vertical axis? It's more than just maturity. Historically, we have often labeled it "visibility". The premise is that the more visible an innovation is—in marketing, in conversation buzz, in news and media, in conferences and other places—the more "hyped" it is. But those are indirect effects that only tell part of the story—so in this book you will see the vertical axis labeled "expectations."

Across all types of innovation, the underlying variable that changes over time as the innovation progresses is really the market's assessment of its future expected value. As we will explain, this is impacted by the conjunction of the real engineering or business value progress the innovation makes and human perceptions of that progress—influenced by social phenomena. However, there is no standard unit of measure for "expectations."

In the case of financial markets, there are clear quantitative measures of expectation, as represented by stock prices and levels of investment that directly measure future expected value. In other areas, including business and technology innovations, the level of expectation has to be approximated indirectly. Fortunately, many proxy measures of expectation can be

FIGURE 1-5

Changing levels of foreign investment in China



Source: IBM Institute for Business Value study; Alan Beebe, "Winning in China's Mass Markets: New Business Models, New Operations for Profitable Growth," March 7, 2007. Reprint Courtesy of International Business Machines Corporation, copyright 2007 © International Business Machines Corporation.

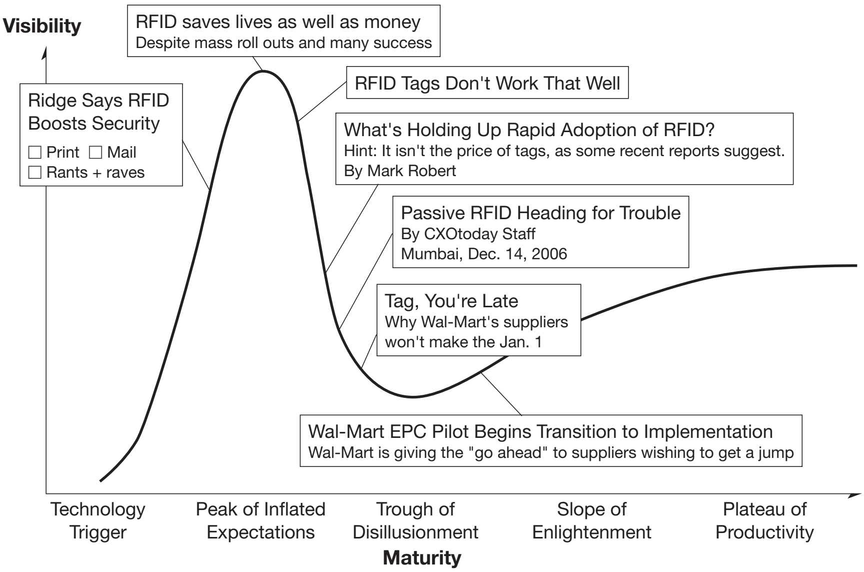
gathered so that a hype cycle can be detected or drawn up for an innovation or a set of innovations.

In the simplest case, the curve can be annotated with stories from the flow of industry news. This is at the very qualitative end of the spectrum. In the life of any new innovation, early stories tend to focus on the invention; later they focus on the applications and business results. Stories early on talk about the future possibilities; later they talk about the here-and-now practicalities. Stories early on gush with positive adverbs. Stories in the middle period often turn negative, cynical, and impatient in tone. The expert reader can see a hundred stories that reinforce the same basic sentiment, and then pick out the one that marks a real tipping point in changing attitudes and understanding. Such are the wonders of that marvelous pattern recognition engine: the human brain. Here's a real example laid out by Aaron Rajan—an IT strategist at Unilever—assessing radio frequency identification (RFID) technology (which allows a tagged item to be read by a scanner without contact or even direct line of sight) innovation progress in the context of retail and consumer packaged goods (see figure 1-6).

As we saw in figure 1-3, which showed how the incidence of articles about the concept "business model" changed over time, the *number* of

FIGURE 1-6

Hype cycle for RFID based on press articles



Source: Unilever.

newspaper and magazine article references to an innovation can be a very useful proxy measure of expectations. The more newsworthy an innovation is, the more expectations rise, and that becomes a reinforcing cycle. News counts are relatively quick and easy to measure using news database tools. On the basis of recent improvements in the field of *sentiment analysis*, which automatically detects the tone of a piece of text from the types of words used (positive or negative), we expect to see a growing availability of tools that will combine quantitative article counts with the type of previously subjective judgments contained in figure 1-6. But for now the hype cycle remains primarily a qualitative decision tool. As in so many areas of management practice, we still have to rely on the art of expert human judgment.

At the opposite end of the spectrum from business trends, technological revolutions, and financial markets (and with a decidedly fuzzy vertical axis), hype cycles also make their effects felt at a micro level on a local and personal scale. We've all felt the excitement of being involved with a challenging new project, only to be worn down into a Trough of Disillusionment once we realize the magnitude and difficulty of the task. Gradually, the long hours and late nights give way to a feeling of satisfaction as the project finally draws to a conclusion. This “internal” hype cycle can be felt by a team or a department involved in implementing an innovation. It can even be felt by individuals embarking on an ambitious undertaking, as we become impatient to see the gains from our investment. That exercise program, MBA, and novel are all harder work than we anticipated, and the rewards slower than we would have liked. And more than one observer has commented that the hype cycle seems to apply perfectly to their personal relationships.

It’s Not Just Descriptive—It’s Prescriptive Too

If the hype cycle is indeed inevitable—that is, we can assume it will occur with virtually every innovation—can it be used to forecast the future, at least to some extent? We believe it can, and for an example we’ll turn to a colleague of ours at Gartner.

First, some background, for those who slept through the 1990s or have selectively forgotten how swept up they were themselves in the mania of the time. In 1997, an article by Peter Schwartz and Peter Leyden in *Wired* magazine described what they called “The Long Boom.” The article’s subtitle was, “We’re facing 25 years of prosperity, freedom, and a better environment for the whole world. You got a problem with that?” which summed up the viewpoint that would dominate and fascinate conventional business thinking for the next three years.[9] The euphoria was based on developments in the world of information technology (IT). The industry had seen innovation before, some of it pretty big—the mainframe in the 1960s, the minicomputer in the1970s, and the PC in the 1980s. But what faced IT analysts in the late 1990s seemed like something genuinely new and different. The Internet, the Web specifically, was not only growing unbelievably quickly as a technology; it also seemed to be taking over business as an idea. Gartner analyst Andy Kyte recalls, “It seemed as if there was some hallucinogenic substance called ‘e’ being pumped though the air conditioning ducts into boardrooms everywhere.”[10]

It went beyond things merely technological. It was the “new economy” and it had “new rules.” Conventional business wisdom no longer applied.

Anyone who didn't share the enthusiasm clearly didn't "get it," to use the popular put-down of the era. The financial press, business journals, business thinkers, stock market analysts, venture capitalists, even the annual reports of blue chip companies, all caught the Internet bug. Stacks of new business books hit the shelves, all with one clear message: Get on the train or be left behind. It's a new world.

In a rather drab, gray office in Egham, a couple of miles from Heathrow airport on the edge of the urban sprawl in West London, one guy didn't "get it." Gartner analyst Alexander Drobik, with a long career in IT and telecommunications and a recent MBA, found it hard to believe that everything he had learned in work and business school had become junk. He had spent much time in the airline industry, where e-commerce had been mainstream for twenty-five years through reservation and global distribution systems. So the Internet didn't feel quite so revolutionary to him. He couldn't shake the feeling that something was wrong with the idea that this time around was truly different, with loss-making companies being valued more than profitable companies—even allowing for the normal start-up investment phase.

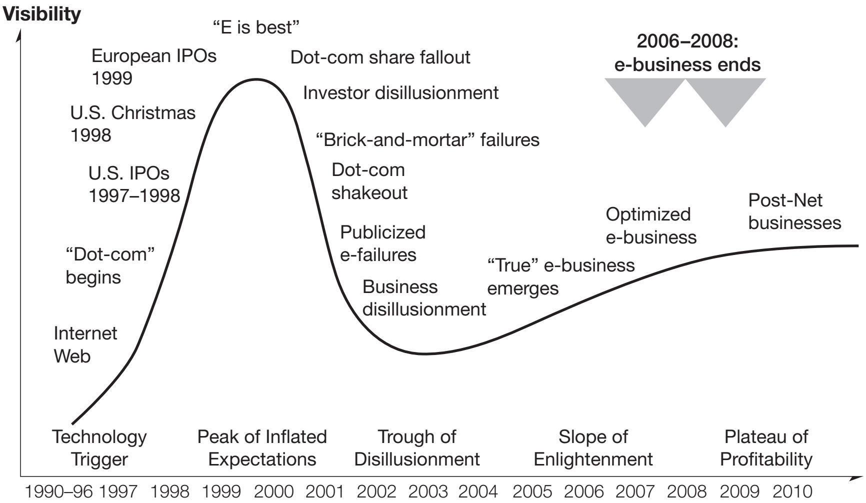
In the summer of 1999, Drobik found a way to articulate what was worrying him. He used a research tool, the hype cycle, that had been in use at Gartner since the mid-1990s, to look at the Internet and the "new economy." Figure 1-7 shows the chart he drew.

His analysis of previous hyped events—for example, the South Sea financial bubble of the eighteenth century—coupled with his deep understanding of Internet technologies and his assessment of the "capital pump" nature of the market (i.e., the frenzy for huge dot-com IPOs) all led to an inevitable conclusion. When he applied the hype cycle tool, he quickly convinced himself that the Internet and all things "e" weren't heading onward and upward forever; rather, the market was about to crash and crash spectacularly. Drobik then had to convince his colleagues he was right. That wasn't simple. It took several months to argue his way through the research peer review processes that his company operated to ensure quality. But in the end he won the argument, on the basis of the insights and the strength of fit to the hype cycle tool.

On November 9, 1999, Drobik got his research note published to thousands of client companies around the world. Its opening words were:

FIGURE 1-7

Gartner e-business hype cycle, 1999



Source: Gartner Group.

"E-business is set to fall into a period of disillusionment by 2001, before successful organizations move through the 'hype cycle' and emerge fully transformed so that they can be referred to as just plain 'businesses' again."[11]

On March 10, 2000, the NASDAQ hit its final, record-closing high of 5,048.62 before crashing to half that value in 2001, along with all the technology companies that depended on the irrational exuberance of investors and executives.

Of course, what Drobik predicted wasn't the end of the Internet but the end of people's crazed expectations and the beginning of a period of disillusionment. If you look at the curve in figure 1-7, it's clear he was predicting not only the crash, but also that the Internet would emerge from the Trough of Disillusionment and find its rightful and extremely significant place in business and life. The Internet will turn out to be one of those innovations that actually exceed in the long run many of the original expectations. It's an example of situations in which the original expectations weren't entirely wrong—they were just premature.