

## Introducing the IT Market Clock

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IT leaders can only make informed investment, divestment and reinvestment decisions if they understand how each IT asset for which they are responsible is progressing through its own useful life. We outline a new Gartner framework that will help IT and business leaders evaluate and prioritize their IT investments across items within any given asset portfolio.

### Key Findings

- Every IT product and service has a finite useful life and must eventually be retired or replaced. Correct timing of retirement/replacement is critical. Most organizations require more-holistic mechanisms for planning IT divestment and reinvestment activity.
- For any (technology) product or service, its current level of commoditization is a proxy for the balance of power between buyers and suppliers in the market.
- A broad understanding of the relative commoditization level of IT assets delivers both tactical cost-savings opportunities and a platform for more-informed life cycle planning.
- The market life of IT assets comprises four phases: customized, mass-customized, commoditized and disfavored.

### Recommendations

- Prioritize attention and resources on IT products and services in the customized and disfavored phases of their market lives. Those in the customized phase deliver the most scope for differentiation in the business processes they support. Plan to retire and/or replace assets in the disfavored phase.
- Perform frequent reviews of supplier and sourcing options for IT products and services passing through the mass-customized phase. These IT assets offer the greatest scope for cost savings.
- IT products and services passing through the commoditized phase of their market lives should be starved of investment and resources. Establish good-enough baseline requirements for these assets, and buy down to the baselines.
- Monitor operating costs for IT products and services in the disfavored phase of their market life. Operating costs rise toward end of market life, highlighting a growing urgency for retirement or replacement.

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### 1.0 Introduction

IT is no longer an emerging set of capabilities and markets — it is a maturing business tool and must be managed as such. Although new capabilities continue to appear in the market, their adoption and use require them to be integrated into a portfolio of existing IT assets, many of which are already mature. Some IT assets are no longer required, or no longer deliver sufficient business value to justify the costs of maintaining them. Usually, working to budget means new IT products and services can only be adopted if existing IT assets are retired or replaced.

Tools and methodologies that focus only on technology adoption are not sufficient to support the decisions required to manage portfolios of IT assets across their full lifetime of use. Gartner's Hype Cycle is a buyer's decision framework that provides immense value in prioritizing and planning technology adoption, but its view ends when mainstream adoption begins. Geoffrey Moore's 1991 book "Crossing the Chasm" remains a seminal work when looking at how technology markets evolve and mature, but is primarily focused on technology adoption ("Crossing the Chasm: Marketing and Selling High-Tech Products to Mainstream Customers" was initially published in 1991 and republished in 1999. It describes, from a vendor's perspective, how the adoption of technology follows a bell-curve path through to market maturity and saturation.). The second part of useful life, from maturity to obsolescence, must also be considered when managing IT assets across their whole life cycles.

Gartner's IT Market Clock is a new research framework that aims to address this requirement by providing a full life cycle view of technology assets, whether capabilities, products or services. The IT Market Clock is complementary to Gartner's Hype Cycle methodology and fulfills a separate objective: In simplistic terms, the Hype Cycle supports "technology hunting" decisions, while the IT Market Clock supports "farming" decisions for assets already in use.

#### 1.1 IT Assets Are Like Other Assets

The way that an organization invests in, deploys, manages and approaches technology assets should change during the asset's useful life. Moreover, the useful life of every technology product or service has an end beyond which it will be more cost-effective to retire and replace than to continue maintaining. This is the same understanding that CFOs and business leaders apply to other categories of assets, both tangible and intangible.

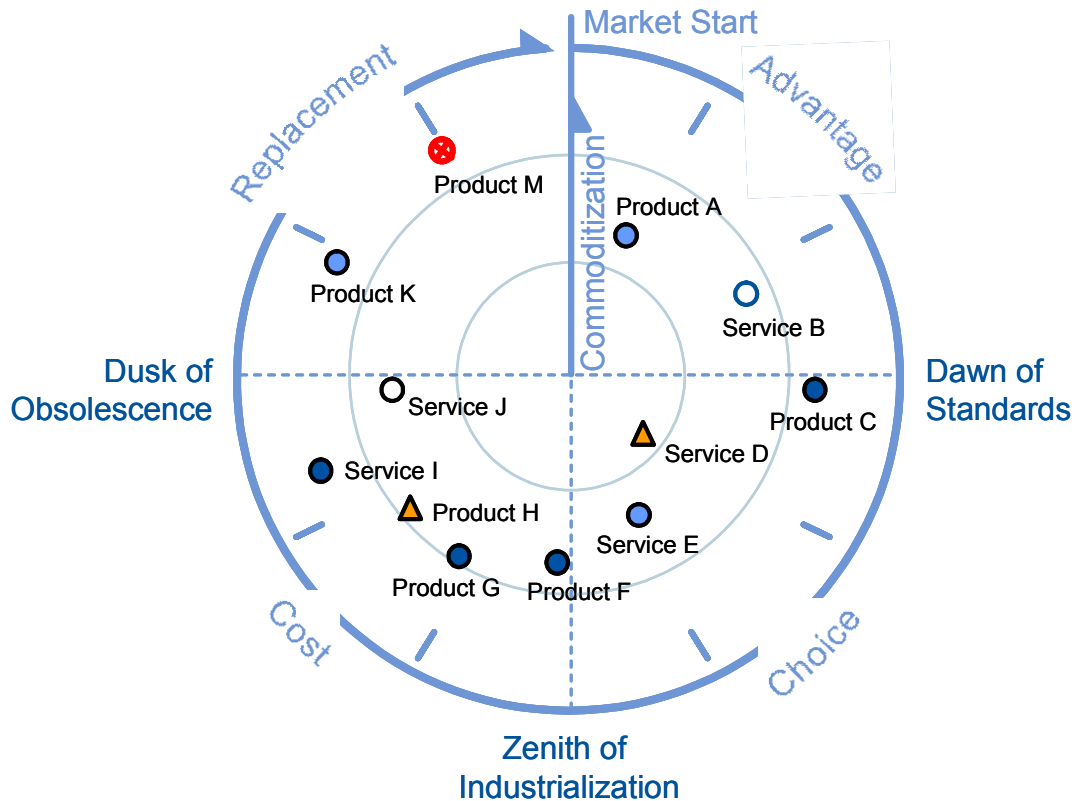
CIOs and IT leaders need a similar understanding of the technology assets under their purview, so that they can prioritize IT investments and build technology road maps that support business plans. The IT Market Clock has been developed to meet this need.

### 2.0 The IT Market Clock

The IT Market Clock is a decision framework that helps IT and business leaders evaluate and prioritize their IT investments across items within any given technology asset portfolio. Although the mechanisms described here are focused on technology assets (products and services), we believe the same approach could be applied to any class of business asset.

The IT Market Clock uses a clock-face metaphor to represent relative market time (see Figure 1). Each point positioned on the IT Market Clock represents an IT asset or asset class: for example, Desktop PCs, Packaged Maintenance and Support Services or Corporate Learning Systems.

**Figure 1. The IT Market Clock**



Source: Gartner (September 2009)

## 2.1 Market Clock Parameters

Technology assets are positioned on the IT Market Clock using two parameters:

- Where they currently lie within their own useful market life (from the first time the technology product or service can be acquired and used to the last time it can be viably used). This determines the rotational position of the asset on the Market Clock — each begins at 0 (called "Market Start"), and moves clockwise round to 12 o'clock
- Relative level of commoditization (the ease with which the technology product or service can be interchanged with alternatives). Relative commoditization determines the distance from the center of the Market Clock — assets further from the center are more commoditized. For most asset classes, relative commoditization levels begin low, increase steadily as the market matures and then decrease again toward end of life.

These parameters are described in more detail through sections 4 and 5.

## 2.2 Four Market Phases

The useful market life of an IT asset comprises four phases: customized, mass-customized, commoditized and disfavored (see Section 5.5). The IT Market Clock is divided into quarters, each of which represents one of these four market phases. The quarters are named to highlight






the general approach recommended for assets passing through the corresponding market phase — advantage, choice, cost and replacement:

- Advantage: Assets in the customized phase, which provide differentiated technology, service or capability. There will usually be limited supply options and high dependence on relevant skills. Organizations should focus on benefits received.
- Choice: Assets in the mass-customized phase, subject to increasing levels of standardization and growing supply options. Organizations should re-evaluate the level of required customization, prices and supply choices periodically.
- Cost: Assets in the commoditized phase. Differentiation between alternative sources is at its minimum level and competition centers on price. Organizations should focus on acquisition and switching costs. Ensure minimal skill set dependencies
- Replacement: Assets in the disfavored phase, usually legacy technologies, services or capabilities. Supply choices and access to available skill sets will be decreasing, leading to rising operational costs. Their retirement or upgrade is essential.

### 2.3 Time to Next Phase

The symbol used for each asset highlights the time it will take for the asset to transition into the next phase of its market life (see Figure 2). This information provides the basis for planning changes to strategy and is especially important for assets entering the final phase of their lives.

**Figure 2. Time to Next Phase Symbols**

-  Less than two years
-  Two to five years
-  Five to 10 years
-  More than 10 years
-  End of life

Source: Gartner (September 2009)

### 2.4 Market Clock Recommendation Summary

The Market Clock Recommendation Summary provides a tabular summary of the positions and expected trajectory for each asset class, as well as specific recommendations (see Table 1).

**Table 1. Example of a Market Clock Recommendation Summary**

Item	Focus Now	Next Change	Recommendations
Product A	Advantage	Choice in two to five years	Undergoing rapid development. High risk of early replacement. Review technology choices every six months.
Service D	Choice	Cost in more than 10 years	Subject to high growth. Standards emerging, new providers entering the market and prices falling. Review contracts every six months.

Item	Focus Now	Next Change	Recommendations
Product G	Cost	Replacement in five to 10 years	No action now — review in 12 months.
Service J	Cost	Replacement in 0 to two years	Plan to migrate requirements to service B by 2013. Ensure internal capability to fulfill all service level commitments if unable to migrate to Service B before 2014.
Product M	Replacement	End of life	End of life imminent. Retire and replace with product C.

Source: Gartner (September 2009)

## 2.5 Asset Class Profiles

Like the Gartner Hype Cycle, the IT Market Clock is a repository-based research framework. For each asset included, a separate Asset Class Profile describes where the asset sits and the market dynamics affecting its trajectory.

Asset Class Profiles are similar in structure to Hype Cycle Technology Profiles, and share some common content.

## 2.6 Applicability

The IT Market Clock can be applied to all categories of IT products and services, even where little apparent commoditization is occurring.

## 2.7 Market Clock Target Audiences

The IT Market Clock provides a consolidated view of IT assets within a specific portfolio. Its primary audience is IT leaders with responsibility for managing resources within a category: for example, a network manager with responsibility for fixed networking infrastructure and services.

The IT Market Clock has been designed to support multiple IT roles and functions. Each Market Clock published will provide a view of all assets that are or may be under the purview of a specific role or job function.

## 3.0 IT Market Clocks and Hype Cycles

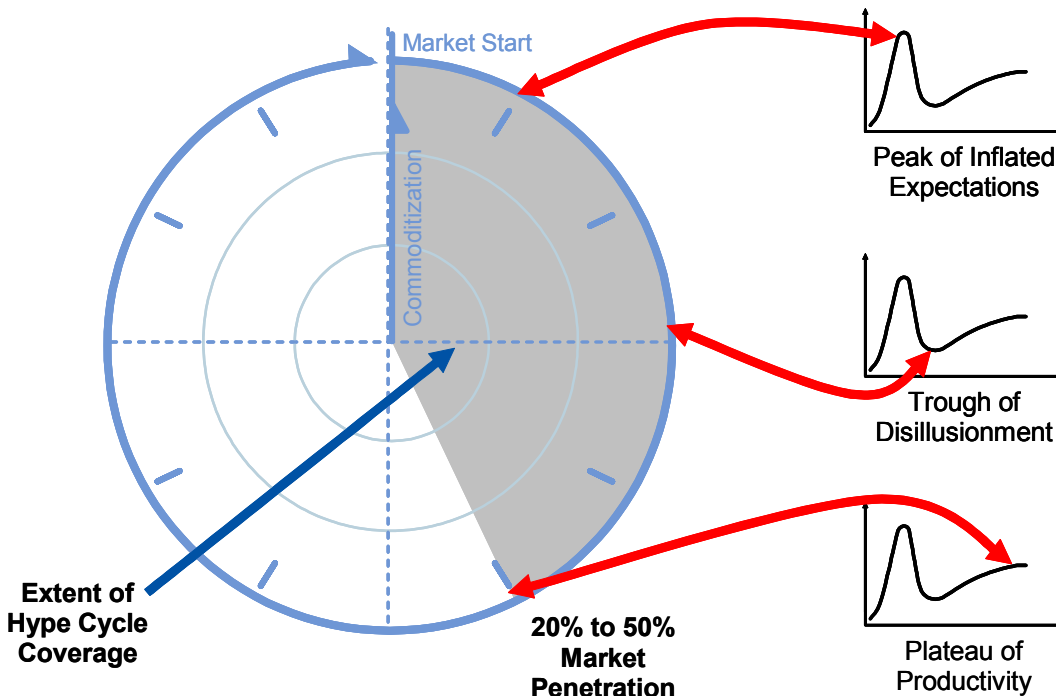
Gartner Hype Cycles highlight the expectations of emerging and maturing technologies as they evolve (see "Gartner's Hype Cycle Special Report for 2009"). Hype Cycles follow the progress of technologies from their first appearance (often before "market start") to mainstream maturity, which typically equates to an adoption level of between 20% and 50% (see "Understanding Gartner's Hype Cycles, 2009").

The IT Market Clock highlights the progress of IT products and services from the time they first become viable to deploy and use to the time when they must be retired. Although both Hype Cycles and IT Market Clocks are based on "relative time," the coverage of the IT Market Clock is longer: Typically, we expect that:

- The Peak of Inflated Expectations on the Hype Cycle will equate to between 1:00 o'clock and 1:30 on the IT Market Clock
- The Trough of Disillusionment on the Hype Cycle will equate to a little before 3:00 o'clock on the IT Market Clock (the dividing line between the "advantage" and "choice" quarters, labeled the "dawn of standards").

- The Plateau of Productivity on the Hype Cycle will typically equate to around 5:00 o'clock on the IT Market Clock (see Figure 3).

**Figure 3. IT Market Clocks and Hype Cycles**



Source: Gartner (September 2009)

In most cases, technology profiles that move off the Hype Cycle for maturity reasons will continue to be represented as assets on IT Market Clocks as they progress through the remainder of their useful market lives. However, it should be noted that not all technologies included in Hype Cycles reach market maturity and so not all technology profiles will become Asset Class Profiles that are included in IT Market Clocks.

For most assets included in an IT Market Clock, there will be (or will have previously been) a corresponding Hype Cycle section. Market Clock Asset Class Profiles may also be associated with a Gartner Magic Quadrant or Market Scope that provides detailed analysis of the asset's marketplace.

#### 4.0 Useful Market Life: the Need for a More Complete View

All information technology products and services have a finite useful life. Although most organizations have formulated (sometimes implicit) strategies for adopting technology, very few have established approaches for planning when to divest and retire the technology assets they already use. In large part, this is due to the overall maturity of IT markets and disciplines — thus far, knowing how and when to adopt has been the principle challenge.

Mainframes, databases, business applications, networking infrastructure and a wide range of other IT products and services are part of the operational fabric of almost every organization. In many cases, the need to renew and upgrade capabilities means that multiple generations of the constituent technology products and services have already been used. But processes to support their renewal and replacement/upgrade remain centered on the adoption of new capabilities:

often little has changed since the first generations were deployed or acquired. These processes must now evolve to reflect market realities.

## **4.1 Maturity and Diminishing Marginal Returns**

Diminishing marginal returns are affecting many areas of IT, driving a growing understanding that "good enough" really is good enough. Ongoing cost pressure and changes in the way IT's contribution to the business is perceived have harnessed this trend to change the way many renewal and upgrade decisions are made.

The impact on IT investment decisions is most visible in highly commoditized areas like PCs — the majority of organizations now plan to replace their PCs and operating systems (OSs) because the old ones are out of support, not because the new ones have new capabilities that the business requires or desires. This approach allows organizations to optimize their return on investment from existing assets and to build multiyear investment plans.

## **4.2 Legacy and Increasing Marginal Costs**

End-of-life issues have become a critical consideration in the approach taken by many large organizations toward the mainframes and business applications they use, because the skills needed to support and maintain them are in increasingly short supply. Leading financial institutions have invested in educational programs to recommence teaching of programming skills in languages like COBOL and Assembler that had previously moved off university curricula (the specification for COBOL was created in 1959, — 2009 is the language's 50<sup>th</sup> "birthday"). IBM launched its own academic initiative in 2003 and offers courses to support the "legacy" skills required for its mainframe environments.

Such moves can alleviate immediate problems, but each initiative to extend useful life typically comes at higher cost. Moreover, as more companies move off legacy technologies, the burden of responsibility for maintaining associated skill sets falls to a diminishing number of organizations. The marginal costs of continuing to use technologies as they approach the end of their useful lives will increase.

## **5.0 Commoditization and Market Power**

In 2007, Gartner introduced the IT Commoditization Curve (see "Riding the IT Commoditization Curve").

### **5.1 Commoditization and the IT Commoditization Curve**

Commoditization is a market function, resulting from the interaction of demand and supply side forces. To buyers, it reflects the ease with which they can switch between alternative sources. For suppliers, it correlates to the ability to define prices and margins for their products or services (see "The Spectrum From Customized to Commoditized IT").

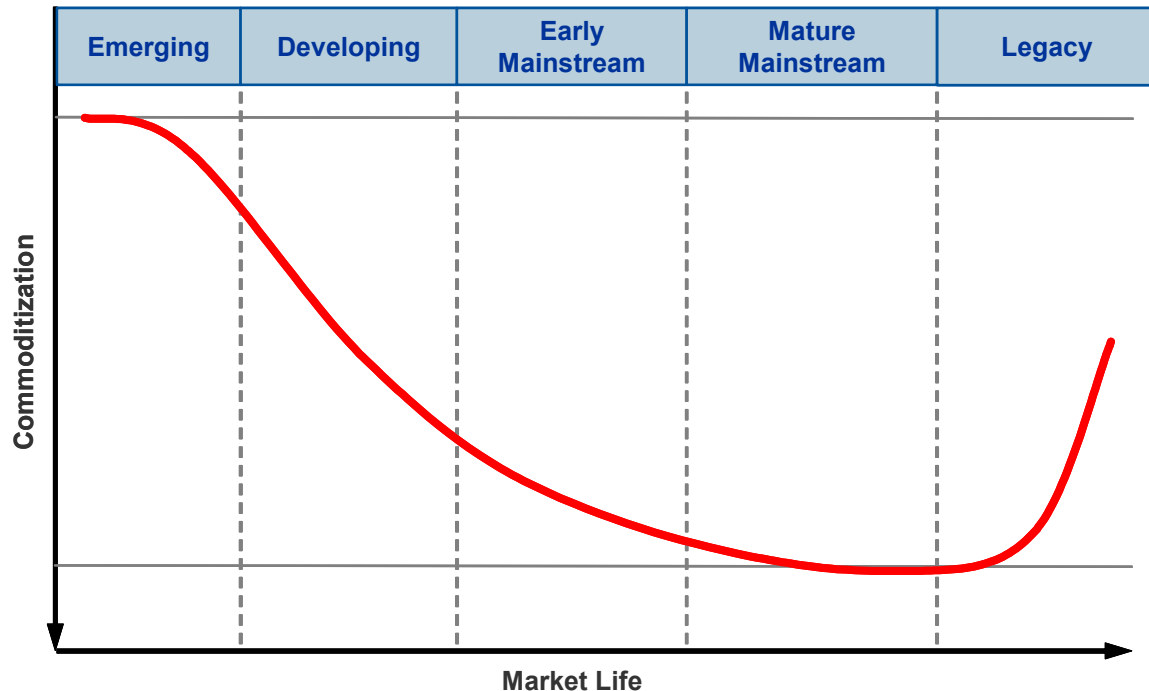
Commoditization is driven by three factors: market growth, level of competition and switching costs. When a new IT product or service is launched, it is typically only available from a single supplier, which can charge a premium price and earn a premium margin. If the product or service meets a market need, demand grows, triggering changes: New suppliers bid to enter the market, and buyers look for interoperability improvements through standardization. The results will be steadily increasing interchangeability between alternatives, price reductions and falling margins. The product or service becomes more commoditized.

The trend toward greater commoditization cannot continue indefinitely — if margins fall too low, suppliers will exit the market. Commoditization typically stabilizes at a minimum level, as do

prices and margins. Many commoditized markets display common characteristics: a stable supplier landscape, easy interchangeability and consistent margins (typically, low single-digit percentage points). Eventually, demand slows, and suppliers begin to shift their attention to higher-margin activities.

As the market for the product or service enters its final phase, the level of commoditization will decrease (and drive increases in marginal unit costs): suppliers leave the market, standards are applied less rigorously and skills become less freely available. The decrease in commoditization level usually accelerates sharply toward end of life (see Figure 4).

**Figure 4. The IT Commoditization Curve**



Source: Gartner (September 2009)

The IT Commoditization Curve represents the level of commoditization as a decreasing value on the vertical axis. The curve is a notional trajectory: Each IT product and service follows its own path. Plots of assets within a similar category using the IT Commoditization Curve assume a scatter chart pattern, with few points actually sitting on the curve itself (see "Assess the Impact of Commoditization on Server Decisions").

## 5.2 Market Power

Commoditization represents the ease with which buyers can switch between alternative sources and so should be considered in negotiations with suppliers. The more commoditized a product or service is, the easier it is for the buyer to take advantage of cost, service or other advantages from alternative suppliers and the less "sticky" an incumbent supplier becomes.

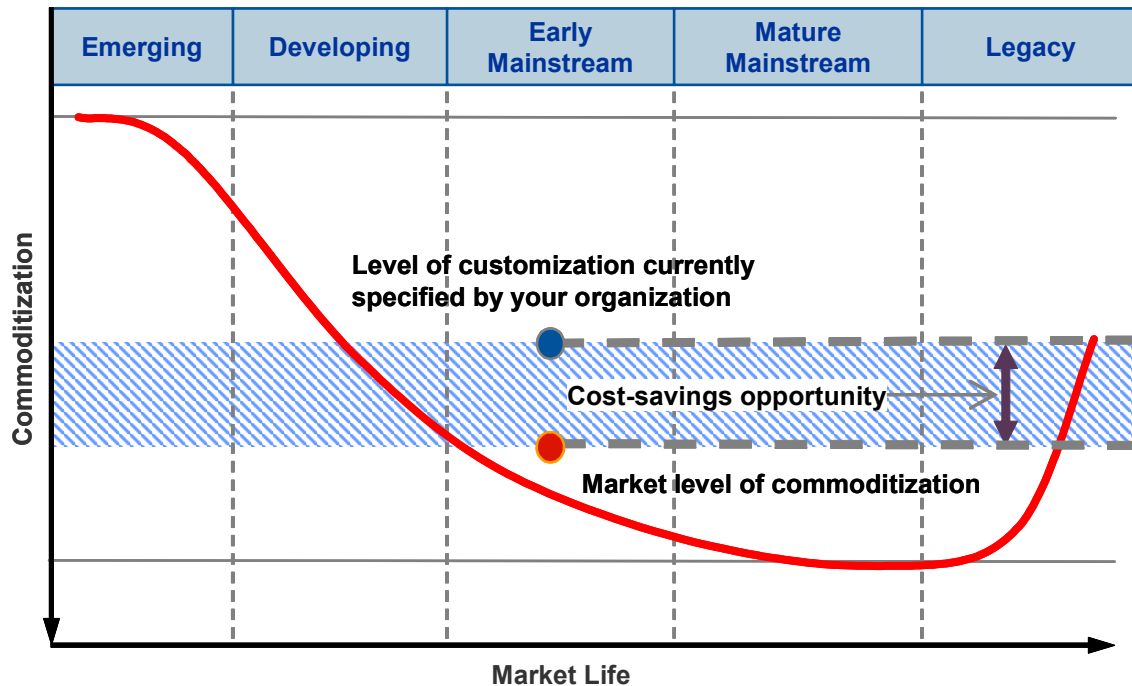
In economic terms, these are the forces that produce the correlation between commoditization, prices and margins. The greater the level of commoditization, the greater the pressure the buyer can apply to a supplier. In other words, commoditization represents the balance of "market power" between buyers and suppliers: As such, it can be exploited directly to reduce costs.

### 5.3 Exploiting Commoditization to Reduce Costs

Only a minority of IT products and services are at "end-of-life" stage or have fully commoditized. So, for the majority of IT products and services, commoditization levels should be increasing.

Procurement processes are rarely adjusted to take advantage of growing commoditization. If, the ease of switching between suppliers has increased since the last time the technology was acquired, prices should have reduced. Taking advantage of such changes requires that commoditization can be measured, so that "market level" commoditization can be contrasted with that being acquired (see Figure 5).

Figure 5. Using the Commoditization Curve to Highlight Cost-Savings Opportunities



Source: Gartner (September 2009)

To measure commoditization, three factors must be considered:

- The level of standardization — determines the ease with which a particular item can be interchanged and, hence, the buyer's potential to exercise choice.
- The number of suppliers — defines the range of choices available to buyers and (hence) their ability to take advantage of standardization.
- Access to appropriate skills— technology products and services require a level of internal capability to use; the ease with which these capabilities can be obtained and augmented directly affects the internal cost of switching suppliers.

These factors can be codified to produce a quantitative index (see "Cut Costs by Exploiting the Commoditization of IT"). Using such an index, the level of commoditization available in the market can be compared with that being exploited.

There are many valid business justifications for *not* buying "down" to the market level of commoditization (see "Toolkit Decision Framework: Understanding When More-Customized IT Makes Sense"). However, decisions not to exploit commoditization for cost advantages should be made with "open eyes" — in other words, with an understanding of the full opportunity cost of additional customization.

## 5.4 Not All Products and Services Commoditize Equally

Although often regarded as a new observation in IT markets (and loathed by many IT suppliers), the principles of commoditization are very simple. Every market commoditizes to some degree during its life, but not all do so equally.

In some markets, high demand growth can lead to accelerated commoditization — consumer-led technologies with a network effect often commoditize quickly due to the high incentives for all parties to maximize interoperability. In other markets, the number of suppliers does not expand and so the benefits of standardization and low switching costs yield significantly less cost advantage — many software markets look like this. However, even where there is only a single supplier, ease of switching between that supplier's products usually grows (if not, the supplier finds it more difficult to persuade customers to replace or upgrade).

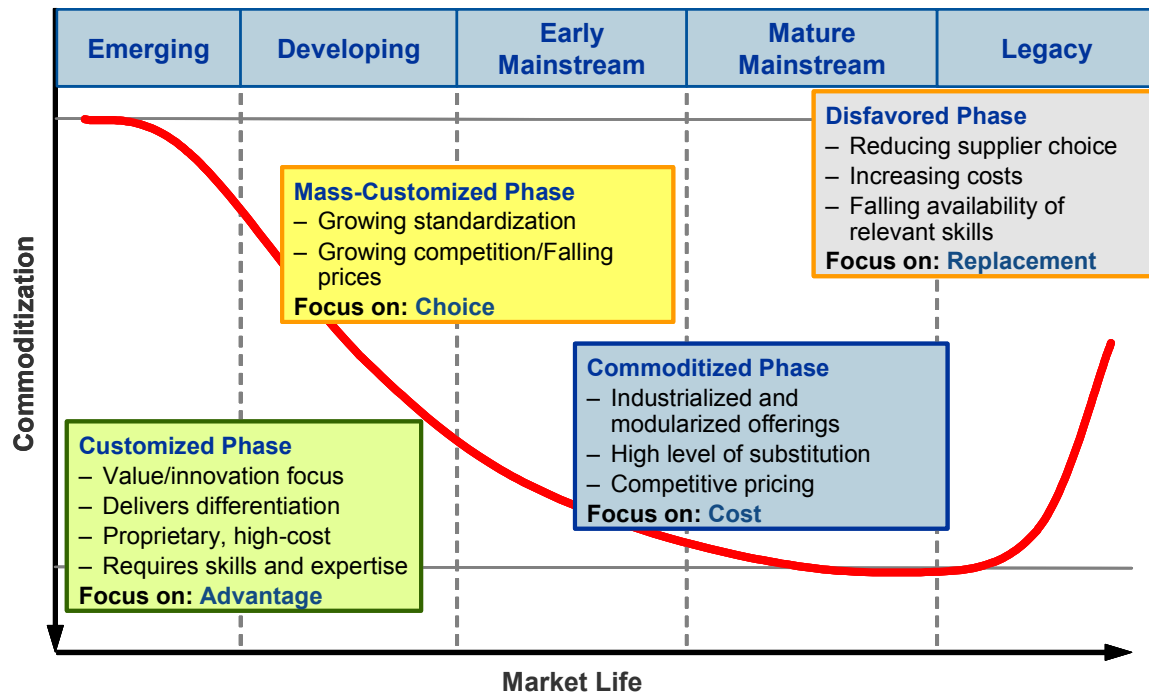
The general shape of the IT Commoditization Curve applies to every IT product and service, but with differences in the depth of the curve.

## 5.5 Four Phases of IT Market Life

The IT Commoditization Curve can expose "instantaneous" opportunities for tactical cost savings, through comparisons made on the vertical axis. It also provides a more strategic view of how IT assets change through their useful life (along the horizontal axis). As each product or service moves through its own useful life, it passes through four market phases (see Figure 6):

- A customized phase, when there is little or no competition and no pressure for commoditization. The balance of "market power" lies almost entirely with the supplier.
- A mass-customized phase, where increasing competition and/or standardization come into play. This is the phase during which the product or service commoditizes most rapidly and when the best tactical cost saving opportunities will likely arise. The balance of market-power shifts from the supplier toward the buyer.
- A commoditized phase, when the product or service reaches its maximum level of commoditization. Market conditions during this phase will likely be stable, and the market-power of buyers will be at its maximum level.
- A disfavored phase, when supplier options diminish, skills become harder to source and costs increase. The level of commoditization rises and market power shifts back toward suppliers.

Figure 6. The Four Phases of IT Market Life



Source: Gartner (September 2009)

## 5.6 Prioritization of Focus and Resources

The strategic approach an organization takes to an IT product or service should change according to the phase of market life it is in:

- In the customized phase, organizations should focus on the advantages technology products and services deliver. Prioritize efforts around assets in the customized phase, since these provide the highest level of business differentiation.
- During the mass-customized phase, organizations should leverage growing market power to expand choice of suppliers and reductions in cost. Review approaches to assets passing through this phase on a regular basis to optimize cost-saving opportunities.
- Throughout the commoditized phase, organizations should seek to minimize costs. Define good enough baselines for assets in this phase and buy down to these baselines. Resources and focus should be shifted elsewhere.
- During the disfavored phase, organizations should refocus their attention on plans to retire and replace IT assets before costs rise.

Understanding where an IT product or service sits within its own life cycle is, thus, critical for any IT leader responsible for a portfolio of assets: whether assets within a single functional category, or covering the whole range of IT capabilities.

## 5.7 Commoditization and Relative Useful Life

Understanding relative commoditization levels can help in pursuing cost saving opportunities, but is a technique that must be applied on an individual basis to each IT product or service. This understanding offers no direct support for the strategic requirement to balance and prioritize investments across portfolios of IT assets, however similar they may be. That objective requires an understanding of where each asset in the portfolio sits within its own useful life — and of course, the useful life (in years and months) of each asset is different. In other words, relative useful life is the key parameter for any decision framework aimed at supporting strategic investment, divestment and reinvestment decisions.

The IT Commoditization Curve was thus critical in highlighting a design parameter for the IT Market Clock.

## 6.0 Design Contributions

Many Gartner analysts contributed to creating and refining the IT Market Clock methodology and framework. Mark Raskino and Monica Basso made significant contributions to the initial objectives and design. Additional contributions were made by Charles Smulders, Jim Sinur, Audrey Apfel, Jim Holincheck, Mark Fabbri, Robert Mason, Sue Landry, Jackie Fenn, Andrew Butler, Philip Dawson, Ray Paquet, Jamie Popkin and Tom Austin.

### RECOMMENDED READING

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"Riding the IT Commoditization Curve"

"The Spectrum From Customized to Commoditized IT"

"Cut Costs by Exploiting the Commoditization of IT"

"Assess the Impact of Commoditization on Server Decisions"

"Understanding When More-Customized IT Makes Sense"

"Gartner's Hype Cycle Special Report for 2009"

"Understanding Gartner's Hype Cycles, 2009"

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