

Pricing in the digital world

Rob Docters, Lisa Tilstone, Susan Bednarczyk and Martijn Gieskes

Rob Docters, Susan Bednarczyk and Martijn Gieskes are based at Abbey Road Associates, New Canaan, Connecticut, USA. Lisa Tilstone is a Senior Market Researcher at a leading media company.

Many incumbent content providers, manufacturers, and service providers view digitization as a threat to revenue and profitability. An example is the oft-quoted admonition not to “trade cable dollars for internet pennies” (Murdoch, 2008). Although the evolution of content, services, and software to digital formats can indeed destroy a traditional business’s profitability, often however it is poor transition management that is the true culprit.

What typically accompanies the shift to digitization? In product terms, there tend to be at least a dozen typical changes, including:

- splitting of product from services, e.g. hardware from software;
- splitting products into sub-categories and re-bundling them;
- embedding new content and functionality;
- improved coordination among parties to a transaction;
- greater customization by segment and user; and
- disintermediation between users, buyers, R&D, and product management.

Often these changes lead to a significantly wider range of consumer and B2B choice. The expectation among product developers is that customers will be gratified with these enhancements. However often customer satisfaction actually suffers due to user unfamiliarity with the digital distribution platform or vehicle (e.g. application software). Complaints may also increase because digital core Millennials tend to complain more.

We find that digitization often leads to splits in the customer base, between technology-savvy and tech-resistant market segments. Some of this is partly due to user attitudes, but often management forgets that a move toward digitization is not a cure-all – or even an improvement that will satisfy all customers. For instance, most readers (of any age) still read about 20 to 30 per cent faster on paper than on screens (Dillon, 1992). Also complex digital systems can under-perform physical or analog goods in quality or reliability. For instance: reliability is why Boeing continues to allow pilots to override digital “fly by wire” controls of the aircraft. Airbus design does not, which has triggered extensive discussion about safety (FAA, 1992). A final example: most audiophiles recognize that vinyl LP records out-perform CD recordings and certainly outperform MP3.

Management and project teams should keep three principles in mind as they develop and tweak pricing strategy to make money in a digital world:

1. Segmentation needs to reflect market evolution in a realistic manner. Digitization is usually not a revolution; rather, it is an evolution. Almost every company over-estimates the rate of change and neglects to spend sufficient time and attention on the lagging non-digital

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segment. Ironically the lagging segments are often the most profitable. In the legal publishing industry, for instance, the legal book business contributed more margin dollars than the electronic side of the business until the early 2000s, far longer than publishers expected.

2. For the digital world, the “unit of charging” must change. So instead of dollars per mile/per book title/per movie/device etc. the units of charging need to shift to dollars per digital event, or per application, or per user, or per use, or whatever fits the digital market. For instance, a new manufacturer of retinal eye-scan devices changed the playing field by pricing its start-up digital analytic product on a per-use basis, while traditional film-based eye scan incumbents continued to focus on selling and pricing entire devices.
3. The cart can come before the horse. Where there is a multi-element (sophisticated) sale, changing the lead element can make all the difference. A new school textbook entrant, for example, successfully entered the market by giving away teaching guides before the key textbook adoption contest. This tactic built awareness of and teacher loyalty to a new brand and enabled the new entrant to sew up the school adoption contest by the time buyers started formally reviewing and evaluating at the actual books. Free is more often an option in the digital world due to lower incremental costs, and so add-ons can precede the main product.

Supply and demand is important context

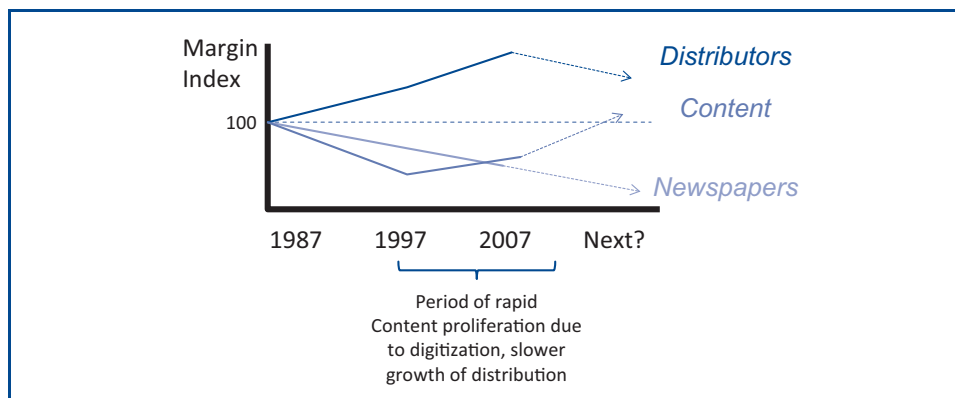
Management may have concerns about digital pricing because often pricing has eroded with digitization. Will your company’s digital prices go up or down? The answer depends partly on supply and demand, and partly on management’s execution. We often find that management does not consider supply-and-demand factors and market evolution before making investment decisions. When the right factors are considered, the resulting roadmap can provide valuable strategic insights, as in the following example.

In a 1996 study, we considered two dimensions that were likely to affect a cable client’s core business – how the advent of digital content creation would impact content pricing and how network development would impact distribution pricing. Our results accurately foretold our client’s actual margin results for the next decade. As digital technologies made video content production easier and cheaper, the supply of content expanded. Slower growth of fiber networks and conventional content distribution mechanisms (e.g. movie theatres) meant that demand grew slowly. The prescription of higher supply and lower demand of content foretold lower video value and margins.

This forecast was in fact realized in the fortunes of content producers. Movie studios, networks and music producers, who were minting money in the late 1980s (e.g. Viacom, USA Networks, Paramount, BMG, EMI), saw declining margins over the next decade. At the same time, content distributors, such as cable companies, saw margins grow throughout the 2000s. Newspapers, who faced increasing competition/substitution for their content, combined with a medium in decline, suffered the most (Figure 1).

Although this was the state of play in the 1990s/2000s, the future looks different. Many sectors that have already shifted toward digital production of content will no longer experience the same increases in content volume. Conversely, the number of distribution channels is what is expanding now. Most major content providers have established digital footholds and have reallocated resources toward branded online sites, social media such as

Figure 1 Impact of digitization on industry returns



Twitter[1] and a mobile presence in addition to their traditional distribution channels (an interesting question is how much “content” will be generated by the new social media – is social media a net plus or minus to content versus distribution? The answer depends on the market sector).

We suspect that with the rise of internet video distributors (e.g. YouTube and Netflix), collaborative sites such as Wikipedia, and social networking sites, the supply/demand balance will shift again as internet distribution proliferates. If distribution continues to expand, we would expect the value of most distribution channels to fall over the next few years. Flat supply and increasing demand (distribution) means that the value of content may rise again.

Managing digital segmentation in this evolving digital world can seem like a simultaneous civil war plus world war with competitors. Internally, typically there are two camps: one that sees digital products as the future, and the other camp which continually reminds the other that the lion’s share of earnings still depend on traditional products. Depending on the stage of evolution, one side of this civil war usually succeeds in killing the other, to the detriment of shareholders. The winning approach is to avoid putting both camps within the same chain of command. Bell Canada, for example, found many of its acquired digital businesses (e.g. GeoCities) systematically hamstrung by management after they were subsumed within the more traditional, higher margin Yellow Pages line of business. In contrast, Microsoft separated out Xbox management from the traditional computer side of the business, and grew both.

In consumer markets, we find that poor segmentation often exacerbates pricing, particularly when products are sold internationally. Price levels differ by country due to differences in income (demand) and the number of competitors (supply). For a mobile telephony application, we found that prices ranged from an index of 100 in the USA, to 122 in Germany, to 89 in Italy (Docters *et al.*, 2004). In less developed countries, the index fell to the teens, yet some global vendors fail to vary prices to the optimum of local price (yes, there are limits to variance due to re-import “gray goods”, but the price tools can optimize that trade-off also). Nor was the problem of price variation limited to global marketing. Within the USA, similar mobile telephony price differences were apparent between college campuses and working millennials – again reinforcing the need to segment via price structure. Such optimization is not conceptually different between digital and other types of goods; digital merely changes the penalty for failure to segment.

Price structure changes with digital context

How should a digital transition and segmentation be managed? We believe that the unit of measure for a digital product is the core pricing question – one that management often glosses over. Management must ask: what changes have occurred to what people are

buying? A good example of creating new digital value is NBC News, who took old news archives and monetized them as educational video content. The measure of value changed completely, however: from audience viewer ratings to per classroom licensing.

To succeed in the midst of digital evolution, pricing and product management should be joined at the hip. In the pre-digital world, communication, interaction, and understanding among product management, pricing specialists, and consumers was never perfect, but imperfections were rarely fatal. Each player could “kick the tires” (understand the product) and it was clear to all what was being sold. Today, that is not possible, often because the value of the product is set by its role in workflow.

For instance, the evolution of avionics (instruments for an airplane) has changed with digitization. In the past, the altimeter, navigation, communications, and other components would be evaluated by their individual accuracy and reliability. Today, these individual components have been replaced by avionic systems – integrated cockpit information systems, whose components are more similar in accuracy and reliability than ever before. Differences among systems lie in the sophistication of the package and numerous features (e.g. 3D synthetic vision, situation evaluation, error correction, etc.), which are not as easily compared in best-of-breed dimensions. Accuracy and reliability measures, which drove older instrument prices, eventually gave way to new dimensions linked to observable features (e.g. screen size, graphic capabilities, and backup). Equally, competitive contests were often determined by how well the overall system helped pilots fly their aircraft.

Increasingly, pricing changes in the evolving digital world are not feature-driven; they are context-driven. Our work for a leading financial information provider, for example, revealed that information was worth twice its normal value when it was fed directly into a portfolio trading program, versus when it was distributed to analysts and other human users.

Similarly in the B2B digital environment book prices are less and less decided on the basis of the book (hardcover/soft cover, length, etc.) but rather on how the information in the book relates to alternative media. In our work we have found that the better way to price, say, a \$100 business reference handbook is to split the value of its content from the physical media (the printed volume). This suggests that B2B publishers and educational publishers:

- Sell the content separately from the bound book. Example: if a publisher is selling a technical publication to a large firm buying 100 books ($\$100 \times 100 = \$10,000$ total), sell the content for \$8,500 and the books for \$15 each (so $100 \times \$15 = \$1,500$). This initially produces the same total, but we find it sends an important message resulting in additional sales. The message is: “the content is what is valuable, not our printing press.” Also, when companies seek electronic versions, they do not need to be re-educated on the value.
- Charge on the merits of media. If your company offers a value-added platform, charge for that value add. Often we find that supposedly “value add” platforms actually offer little value add (e.g. complex work platforms lose to simple mobile applications), and companies fool themselves where value lies. Hiding content value in an amorphous bundle with media usually destroys value; separating it out often liberates value – customers will punish vendors who appear to be “force bundling” elements. A 15-40 percent price penalty exacted from unwanted bundles is common.
- Do not insist on the same unit of volume! Digitalization liberates your company from selling by the book, the integrated software package, the record album, the cockpit instrument,

“The prescription of higher supply and lower demand of content foretold lower video value and margins.”

or the TV spot. Clients are often afraid that this unbundling will reduce revenues, but often we find the opposite (Docters, 2006). The prerequisite to revenue gains are, however, a solid understanding of market price drivers and bundle configuration.

Thus, whereas books, news feeds, and periodicals were all previously sold on a stand-alone basis, they should now be viewed increasingly as part of an overall content/media price structure (Figure 2).

Price drivers, of course, must be reflected in any execution plan to adapt the traditional business to the new. A key digital pricing question (related to choice of unit) is “scaling.” In the pre-digital world, scaling often took care of itself – that is, when information buyers needed 20 tax guides, they bought 20 tax guides. In the digital world, many users can make do with a single electronic feed. Thus, the question is: how can the feed be priced so that your company capture the value of many users? Again, this should lead pricers to shift their pricing focus from the product (“how much is a tax guide worth?”) to the buyer context (context being: “how many tax professionals are being supported? Are they senior or junior practitioners?”). Poor scaling decisions have hurt many service and information providers, including tax software, computer networking, maintenance and repair, and news gathering.

One source of under-realized value is digital piracy, an interesting challenge. Some entertainment, business information, and educational publishers face an 80 percent or more loss of volume to illegal copying and distribution in certain markets and geographies. Such losses are often avoidable. Pricing can often play a role in combating illegal copying. How? To begin with: give users what they want. Several business-to-business information providers (e.g. energy, construction, legal) have found that simply allowing all customers use of information through enterprise pricing immediately eliminated cheating – and provided the information provider with an immediate uplift in revenue.

Digital bundle strategies

Another mechanism to eliminate illegal use and re-publication of digital content is to create a price mechanism that offers some elements of the product for free, but links other elements to a more defensible for-pay environment. The strategy is to make it harder and harder for users to cheat companies out of revenues on higher-value elements of the product (Docters, 2006). In the consumer market, an example is the two-level pricing for Microsoft Xbox Live where the silver level of play is free, but to get to the more desirable (and harder to pirate) gold features, payment is the easier option (Figure 3).

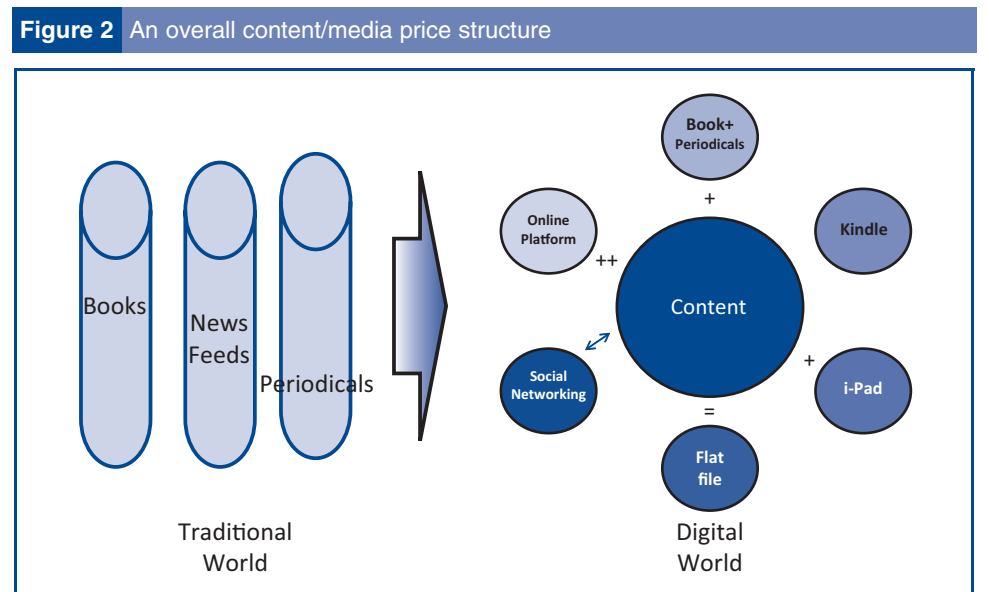
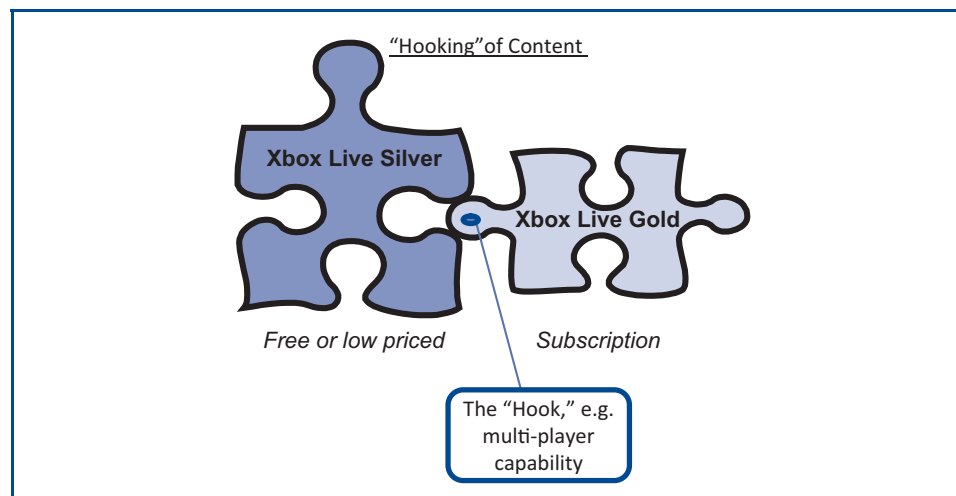


Figure 3 “Hooking” of content



Another consideration that is crucial to pricing success – or at least a way to avoid a pricing disaster – is to make sure that product management and pricing proceed in parallel – a best practice. Pricing is often a reaction to product plans, therefore if the product management team is overly optimistic about digital adoption, the price will be wrong.

Managing hybrid digital and pre-digital offers

Many companies calculating the revenue “requirements” of the new system frequently over-estimate digital volume and set the price too low. Occasionally, for companies that base price on cost, the lower price may be appealing due to management’s belief in the myth that digital is lower cost. This is almost always wrong: our studies have repeatedly shown that in many cases digital is more expensive than legacy product when management includes all costs.

To compound the digital product pricing error, sometimes management handicaps legacy product pricing. Annoyed with the burden of maintaining both digital and traditional products, management either cuts support for the old product, and/or raises its price materially to “harvest” that product (and perhaps to pay for new digital development). The result? Material under-performance of the digital product, due to premature release and inadequate support – and fatal harm to the traditional product line.

Unless your company has matured as a digital product developer, the better approach is to let the market decide, and to separate the price and product development on existing product lines. Give both digital and non-digital products their best shot. This approach actually requires less effort than reorganizing all the resources to emphasize the new digital product. Typically, established products run on long-standing momentum. Management does not need to kill the old to optimize the new – the market will do that when (and if) it wants.

In some sense, digitization has changed none of the fundamental rules of pricing – pricing should always reflect market price drivers. However, the penalty for maintaining “business

“In consumer markets, we find that poor segmentation often exacerbates pricing.”

Box 1 Scope of digitization

Digital native Wikipedia defines “digitization” as “the representation of an object, image, sound, document or a signal (usually an analog signal) by a discrete set of its points or samples.” This definition further notes that the benefit of digitalization is allowing “information of all kinds in all formats to be carried with the same efficiency and also intermingled.”

The authors would go one step further: digitalization goes beyond information to decision logic and automated actions. Although the more publicized impacts of digitalization have involved information, digitalization has also revolutionized devices, manufacturing, tools, and services.

Direct impacts of digitization include many physical operations. Temperature controls, program trading, alarms and controls, professional services and logistical management have all been transformed. For instance, oil tanker trucks can now be redirected in transit to reflect recent electronic energy trading; building temperature controls have moved from stand-alone mercury thermostats to integrated computerized systems. Even already-computerized devices, such as telephone company central office switches, are now commanded via distributed digital networks that react to user needs automatically.

In some cases, digitization opens new horizons in management and practitioner insight. New interim assessment programs in schools are providing teachers with analysis of what students have not grasped, and how to address those shortfalls. Previously, tests and quizzes were time-consuming and often could not provide the right content to remedy the learning gaps. Through formative assessment and a dashboard of results, learning efficacy and demands on teachers' time is being reduced.

Digitization also has indirect impacts. The digital solution often competes with pre-digital solutions – in a sense, the new applies pressure on the old. That competitive battle requires competitive pricing. Two examples, with evolving outcomes:

- New digital analysis of geophysical sub-surface structures has allowed a new generation of oil exploration analysis. However, older techniques in use by major exploration companies will not go away instantly as powerful incumbents offer more complete exploration services (e.g. bundling of seismic analysis with drilling of exploratory wells) and non-digital techniques such as observation of surface vegetation which has proved indicative of oil deposits. Both sides in that contest must adjust to the digital advance.
- In consumer markets better digital controls of automobile transmissions mean that cars can perform better in snow and rain. This has impacted the sale of snow tires, and moved the market towards all-weather tires.

as usual” pricing has grown with digitization. Price structures developed over decades to fit an older generation of products cannot be relied upon to perform in the new digital world. Digital price drivers (i.e. factors in the market that shape the structure and level of digital offer pricing demanded by customers) will penalize companies who do not think through the logic.

Woe betide those who adopt “price benchmarking” and try to apply rules from other companies whose strategies and value offerings are totally different from their own – those benchmarks are usually behind the times or focused on a different market with different drivers. Digital requires understanding of your company’s consumer needs and business customer context (Box 1).

Keywords:

Pricing,
Structure,
Digital migration,
Media,
Context,
Supply and demand

Note

1. For instance, 1.8 people learned of Michael Jackson's death via social networking (e.g. Twitter) and Wikipedia within hours of his death – well before traditional media broke the story.

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About the authors

Rob Docters is Managing Partner at Abbey Road, a leading price strategy consultancy. This article was adapted from a forthcoming book, *Contextual Pricing: The Death of List Price and the New Reality* (McGraw-Hill, fourth quarter 2011). Rob Docters is the corresponding author and can be contacted at: rdocters@abbeylp.com

Lisa Tilstone is a senior manager at a leading media company and does market research on consumer choices, bundles and preferences.

Susan Bednarczyk is also a partner at Abbey Road Associates.

Martijn Gieskes is a Senior Associate with Abbey Road, LLC. He has consulting on pricing issues to software companies, publishers, entertainment and media companies.

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