Unfolding the Benefits of Digital in Paper and Packaging

Even as digital reduces demand for paper it creates new opportunities in product, supply chain and customer innovation.

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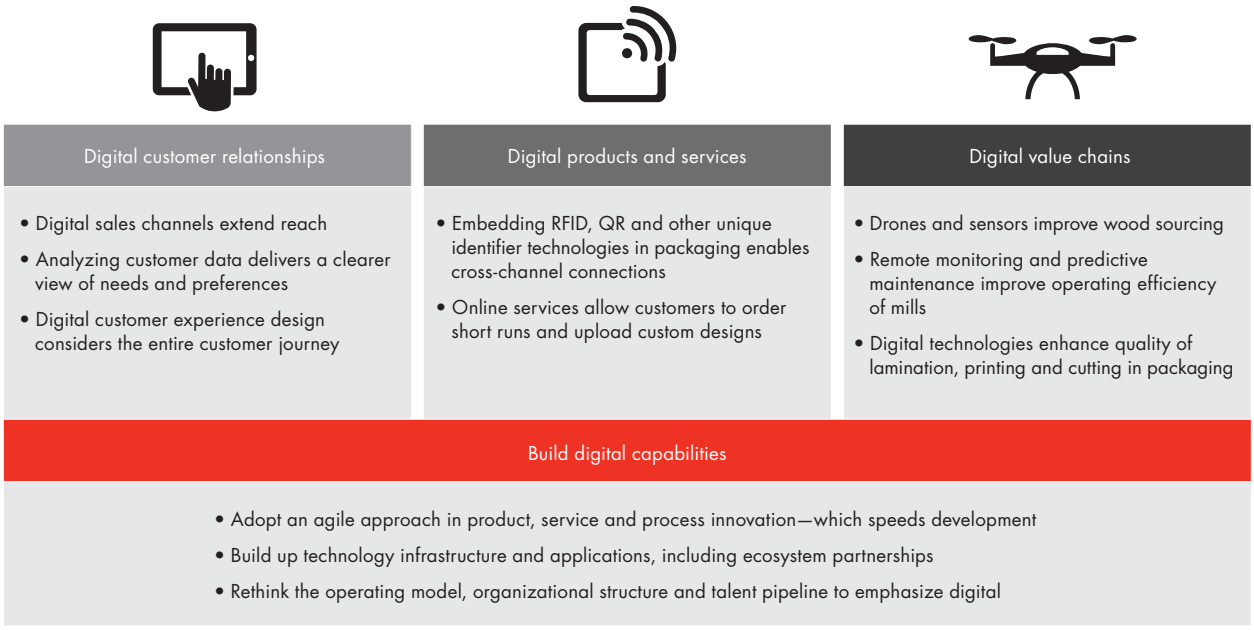
There's no question that the rise of digital technology poses threats to the paper and packaging industries. Demand for paper has fallen as business and transactions move online, particularly in more developed markets where Bain estimates that consumption may decline by 3% to 5% per year. Contracts, invoices and everyday communication flow without paper, and consumers are switching from print magazines and newspapers to online and mobile versions.

There is, however, another side of the digital story in paper and packaging, one that creates opportunities for cost savings and product innovations with new revenue streams. As in other industries, leading paper and packaging companies are showing how to harness this new potential to gain competitive advantage, particularly in three areas (*see Figure 1*):

- **Digital customer relationships.** As customers' expectations rise, they want more transparency and closer control over their orders.
- **Digital products and services.** As new technologies gain scale and become more affordable, innovations in packaging offer better tracking and new insights.
- **Digital value chains.** From more accurate sensor and scanning technology in the forest through more efficient operations in the mill or plant and better predictive maintenance throughout the process, the connections across the value chain are becoming more seamless and integrated.

But as these leaders can attest, success in digital doesn't come easily. Established firms, some with operating models that have served them well for decades, need to discover and develop new ways of working—digital operating models—as they adopt new technologies. Disruption isn't easy in this industry, due to high entry barriers, and that has led established companies to move less aggressively into digital than their peers in other industries. That could change as more incumbents recognize the growing threat from digital inno-

Figure 1: Leaders in paper and packaging are harnessing digital technologies in three areas to gain a competitive advantage



Source: Bain & Company

vators and new attackers—and come to realize that digital is a must-have to achieve the next level in productivity and customer service.

Companies need to make the user experience easy and enjoyable to keep from losing business to their more digitally savvy competitors.

Digital opportunities in paper and packaging

To get up to speed, most paper and packaging companies will need to invest significant time and effort developing the digital capabilities needed to capture the potential. The first step is getting a clear view of the areas undergoing the most rapid and significant changes. With that knowledge in hand, executives can then look to their own organizations to determine where they should begin their own digital transformations.

- **Digital customer relationships.** Thank Amazon, Uber and hundreds of other consumer companies for raising business customers' expectations about transparency and efficiency. Customers now ask: "If I can easily order and track a taxi on my mobile, why can't I do the same for a large commercial order?" With the bar raised, paper and packaging companies have to step up to deliver better transparency along with more efficient online ordering and billing capabilities—or they risk losing share to someone who can.

  Of course, digital's potential goes beyond improving existing transactions to enabling new ones. The most advanced packaging companies now make it easier for customers to collaborate with them, uploading personalized designs or ordering small-batch runs for special promotions. Some of these online systems are easier to use than others, and with competitors only a click away, companies need to make the user experience easy and enjoyable to keep from losing business to their more digitally savvy competitors. At first, newcomers may capture only small orders, but are likely to take on larger volumes as their businesses grow.

  Beyond these customer-facing capabilities, the data collected through digital transactions can allow paper and packaging companies to develop deeper insight into their customers' purchase history and preferences. A better understanding of customers and their purchasing patterns can shape upstream production to reduce lead times and identify new opportunities for cross sales and innovation.

- **Digital products and services.** One of the most promising top-line opportunities in digital technology is intelligent packaging. RFID tags in packages and labels have been in development for more than a decade, but so far their costs have limited their placement to luxury or other high-margin goods, where the need to verify authenticity justifies the costs. Stora Enso, for example, has partnered with chipmaker NXP to integrate RFID into packages of luxury goods such as champagne or fragrances, to ensure authenticity and even to produce lighting or other display effects. Beyond luxury and other consumer goods, RFID tags could have broad applicability in industrial applications—for example, improving inventory management and authenticating spare parts for industrial equipment.

  Another form of intelligent packaging relies on the humble QR code, which has become important in offline-to-online commerce around the world, but especially in China, where the introduction of QR codes coincided with the rapid rise of mobile phones. When the enormously popular WeChat service began including a QR code scanner in its app in 2012, it encouraged merchants to include the code in packages as well as their ads, and to work with WeChat to connect their products with online promotions and sales. Other large

online services like Alibaba and Baidu joined the trend, incorporating the codes into their apps and enabling more offline-to-online promotions and other connections.

Packaging companies could be in a position to provide technology platforms to help their customers connect online marketing with other aspects of customer engagement.

The QR code phenomenon has also begun to take off in Europe and North America. Its success in Asia suggests that packaging companies could be in a position to play an active role in providing technology platforms for similar applications elsewhere in the world. For example, liquid packaging equipment and materials providers like Tetra Pak and SIG Combibloc have broad experience across the dairy industry which is valuable to their customers around the world. As more dairies rely on packaging to make the connection from online marketing and other aspects of customer engagement to their products, these equipment makers will be in a position to provide the technology platform to help them make that connection.

- **Digital value chains.** For years, paper mills and converters have used sensors to monitor the condition of equipment and the quality of the paper products being manufactured. As sensors and related digital technologies become more sophisticated and less expensive, they can help paper companies create value in new ways.

  Drones and sensors improve the accuracy in estimating the potential of forests, and they can sharpen the ability to estimate the value of a harvest. In the Nordics, online sales channels and digital document management today facilitate forest contract negotiations and sales in ways that reduce "windshield time"—the long hours that agents might otherwise have to spend traveling to arrange deals. Scanners and X-ray technology at saw mills can help calculate the ideal cuts to maximize the value of the wood.

  In mills and plants, digital technology makes it possible to monitor and operate facilities more efficiently—and even remotely. Digital sensors, wireless networks and apps on tablets can free technicians from the control room, allowing them to carry out inspections or repairs while staying in touch with central controls. Connected equipment and better data on its condition can also help operators plan preventive maintenance more efficiently, avoiding expensive downtime and damaged equipment or product.

Toward a digital paper company

A successful multiyear transformation into a more digital operating model begins with a diagnostic geared toward gaining a better understanding of how new technologies are changing the paper and packaging industry, especially the expectations of customers. This assessment should include a comprehensive review of the company's current and planned digital initiatives as well as its capability gaps—and those of important competitors. Leaders need to be aware of the execution risks, and take an honest appraisal of their own organizational readiness for the transformation. Risks include investing too thinly in digital initiatives, chasing too many opportunities at once, failing to develop the right roles with decision rights, and making do with existing IT talent where new digital capabilities are sorely needed.

With this fact base in hand, executives can begin to prioritize their digital initiatives for operations, customer engagement and new products like intelligent packaging. By focusing teams on priorities, they can accelerate progress on those actions that are most likely to increase margins and raise the share price. A key element of this is a blueprint with clear responsibilities and timelines.

As in other industries, successful implementation of digital technologies requires digital design thinking, greater cross-functional cooperation and nimble decision making. Some companies are looking to the example of the software industry where agile and scrum methodologies have successfully reduced development times. One European package maker expanded its use of scrum beyond software development to better understand customer insights and ensure they found their way into new products. In one case, this agile approach radically reduced product definition times from more than a year to a couple of weeks—and, at the same time, delivered new insights on business models and how to put them into practice.

Throughout, executives need to take a coherent, holistic, top-down approach. Successfully deploying new technologies requires an effective cross-functional approach that includes:

- **assessing opportunities and threats**, by business and by function;
- **reconfiguring the operating model**, the organizational design and business processes to support a digital company;
- **identifying capability gaps** and learning to see technology and data skills as sources of advantages rather than as back-office functions;
- **hiring digitally savvy talent** while also improving the digital skills of existing staff;
- **finding the right partners**—not just technology vendors, but also those that can supply or aggregate complementary products (Most industrial companies find that they need to partner with analytics service providers, rather than attempting to develop their own world-class analytics capabilities in-house.); and
- **allocating people and capital where they can add the most value**, setting targets and tracking progress with performance metrics.

Digital transformation offers tremendous opportunity in the paper and packaging industry, but success will require a significant investment in new talent and capabilities, as well as careful prioritization. Executives must be deliberate about picking the right opportunities for their market and regulatory environment. As with all large transformations, they should think of this as a multiyear journey, even though in this case one of the most important aspects of the change will be acquiring the ability to innovate in short cycles and deploy new products and services more rapidly.

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