



Digital Printing for Packaging: Folding Cartons

How and Why
Decisions are Made

Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

Produced for SGIA

www.sgia.org

703.385.1335

Produced by Karstedt Partners, LLC.

8843 Hammond Drive, Eden, NY 14057-1409

United States of America

www.karstedt.com

716.992.2017

Kevin Karstedt

kevin@karstedt.com

Jeff Wettersten

jeff@karstedt.com

Copyright © 2018 by Karstedt Partners LLC

Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

Table of Contents

Introduction	5
Acknowledgements	5
Executive summary	6
Methodology	6
Qualitative and quantitative interviews	7
Our approach	7
Participants	7
Those with and without digital	8
Main findings	9
What is the perceived value in being an early adopter?	9
How do they see themselves?	9
Understand the decision-making process	10
What is the catalyst driving the evaluation?	10
What needs to be in place before you will invest?	11
Outsourcing digital	12
Who makes the decision to invest in digital?	12
Is there a need for a new pricing model?	13
Digital is not just for printing	14
Software purchases and plans	14
How was digital printing ultimately evaluated/graded?	15
How was an ROI established?	15
How long did the evaluation process take?	15
Getting information on digital print	15
Installation and integration	16
Project management	16
Challenges: areas easiest and hardest	17
Why invest in digital?	18
Features and preferences	19
Were expectations met: installation, support, customer feedback?	20
What do customers think?	21
Where would you like to see digital in 5 years?	22
Conclusion	23
Who we are	31

Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

Figures & Tables

Figure 1: Total annual sales revenue	7
Figure 2: Markets served	8
Figure 3: Do you have a single pass digital printing solution for cartons	8
Figure 4: Where are you on the innovation scale	10
Figure 5: Early adopters vs. those planning to buy	10
Figure 6: Main driver for purchasing a digital press	11
Figure 7: What needs to be in place for you to invest in digital	12
Figure 8: Multifunctional team or management decision	13
Figure 9: New pricing model	13
Figure 10: Equipment/software purchases (expected, as part of installation, after installation)	14
Figure 11: Challenges seen by early adopters vs. those planning to buy	17
Figure 12: Digital benefits for early adopters and those planning to buy	19
Table 1: Sources of information on innovations such as, digital printing and finishing	16
Table 2: How valuable are the informational sources	16
Table 3: Preferred format size – early adopters of digital (with) vs. those planning to buy (without)	19
Table 4: Imaging method preference	20
Table 5: Vendor satisfaction	21
Appendix	
What do brand owners think of digital packaging	24

Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

INTRODUCTION

Preliminary discussions with SGIA regarding what the industry needed coming out of this study identified that, “we need get into the mind of the converter regarding digital investment.” By understanding the converter’s motivations for or against investing in digital, the industry can gain valuable insights for making investment and strategy decisions. Understanding these questions drove the discussion points in qualitative interviews and questions in the quantitative surveys, and ultimately, brought the research team to its conclusions.

The report focuses on the decision-making and evaluation processes printers go through to make their digital investments. What are the factors that lead converters to invest? Customer influence may not play the main role on the investment, as for many investors, the production needs were the main drivers of their decision to go digital. What challenges are expected prior to the investment? Does the actual deployment prove them wrong? Handling the prepress and training the production staff may not be as challenging as handling the orders and getting the sales up to speed, as was mentioned by our respondents.

How could the packager prepare for the digital investment? The survey suggests that investing in software as well as the finishing equipment, such as digital embellishment and digital die cutters, may smooth the process of digital adoption later on.

What could the business rely on OEMs for? Site planning and installation pre-planning are usually handled well by vendors. However, every company would benefit when the job of “project management” is done internally by the special team and the new pricing model is created.

What are the benefits of investing in digital? Ability to run variable data, versioning, short turnaround time and the overall gain of digital capability ahead of competition – those are just some of the benefits mentioned by our respondents.

ACKNOWLEDGEMENTS

First, we would like to thank SGIA for commissioning this study, and for providing ongoing support in constructing and executing the research requirements for the report. Next, we would like to acknowledge and thank the ICG and AICC for their support and assistance in securing member participation for the quantitative interviews. Finally, we want to thank all the interview participants. Your time and willingness to help us better understand your business, the challenges you face and your approach to addressing those challenges is greatly appreciated.

Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

EXECUTIVE SUMMARY

The key findings from this study are stated below. It is the crowning effort of speaking and interacting with over 100 of your peers and industry participants, and it is anxiously awaited by those who helped to bring it to text on paper. Early adopters are happy in this area, but what was their key motive for investing early? Is it only to be first to the market?

Those who have yet to invest in digital say they are waiting for a format size that better fits their needs and for a compelling business case to emerge. What does that mean?

The main reason for going digital is not to offer personalization, as the industry has been telling us for years. Rather, respondents tell us overwhelmingly that they are “buying in” for operational reasons first, and that they will take marketing opportunities to their customers once they have their digital legs under themselves.

Will a new pricing model be developed for digital offerings? Yes, most see the development of a new pricing model for the benefits of digital. Is it the same for those yet to buy in?

The most challenging issue during ramp-up for early adopters was getting their sales teams up to speed with digital, and those still looking did not see it as that challenging an issue. What are they in for?

Under the “lessons learned” category, why did early adopters see getting their prepress operations up to speed as less challenging than those still evaluating digital? And why by such a large margin – 56% to 24% – on the challenging scale?

What is more important: type of imaging technology used or how it works? Is inkjet where it needs to be from a quality standpoint? Most say yes, but how many are still forming an opinion?

The easy answer is that the industry wants a 40-inch (B1 size) digital press, but how many are saying this, and is the current leader with a 30-inch (B2 size) solution still riding a strong horse?

What benefits does digital bring to the industry? Versioning, variable data jobs, efficiency and short turnaround times top the list. Were early adopters’ expectations met or exceeded in two key areas: print quality and production performance? Yes, and kind of. Where is there still work to do?

METHODOLOGY

Qualitative and quantitative interviews

The critical objective of this research was to get in the mind of the converter on all facets related to digital investment.: Why did they invest or not invest? How did converters go about their investigation? What worked or did not work during their investigation? How was the decision made? What critical assumptions did they have to make? How is their investment working? What issues did they face? What has changed in their internal and external management of customer, product and service post-investment?

For those that have not investigated – why? What drives the different approaches in the three groups:

- Investors
- Investigators
- Status quo

Project challenges specific to the folding carton market:

- Converter structure, integrated vs. independent
- Limited digital participation
- Gaining access to converters willing to participate

Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

Our approach

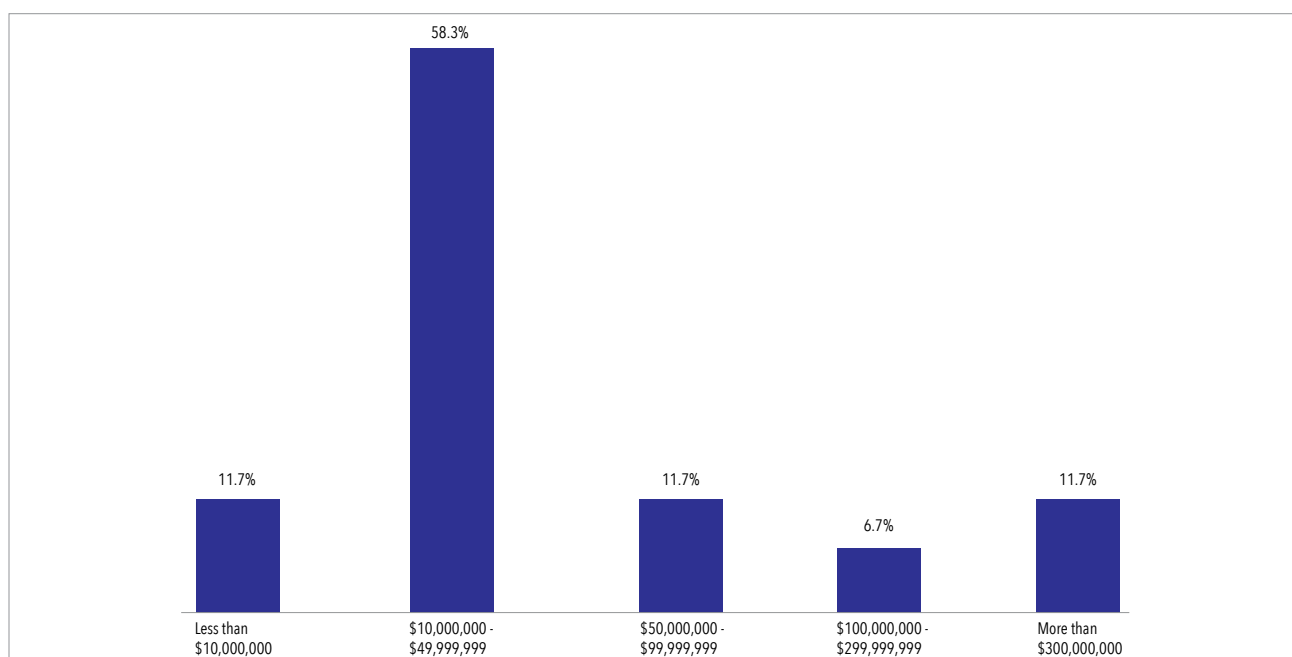
Qualitative phone interviews (20 total) were conducted with senior management among various converter operations. Online quantitative questionnaires with 41 converters were conducted across a wide variety of topics. The topics, as well as the questions asked, were determined from the responses gathered in the qualitative interviews.

As confidentiality is critical in this type of survey work, information gathered is shown in the aggregate form only. Likewise, where there is limited participation in certain topics, technologies or around specific business models, we will discuss these areas conceptually, but not specifically.

Participants

There were 61 total respondents; 20 companies participated in in-depth telephone interviews prior to the online survey where 41 additional companies participated. More than half of the respondents have between \$10 million and \$50 million in annual sales with an even mix of companies smaller and larger (Figure 1).

Figure 1: Total annual sales revenue



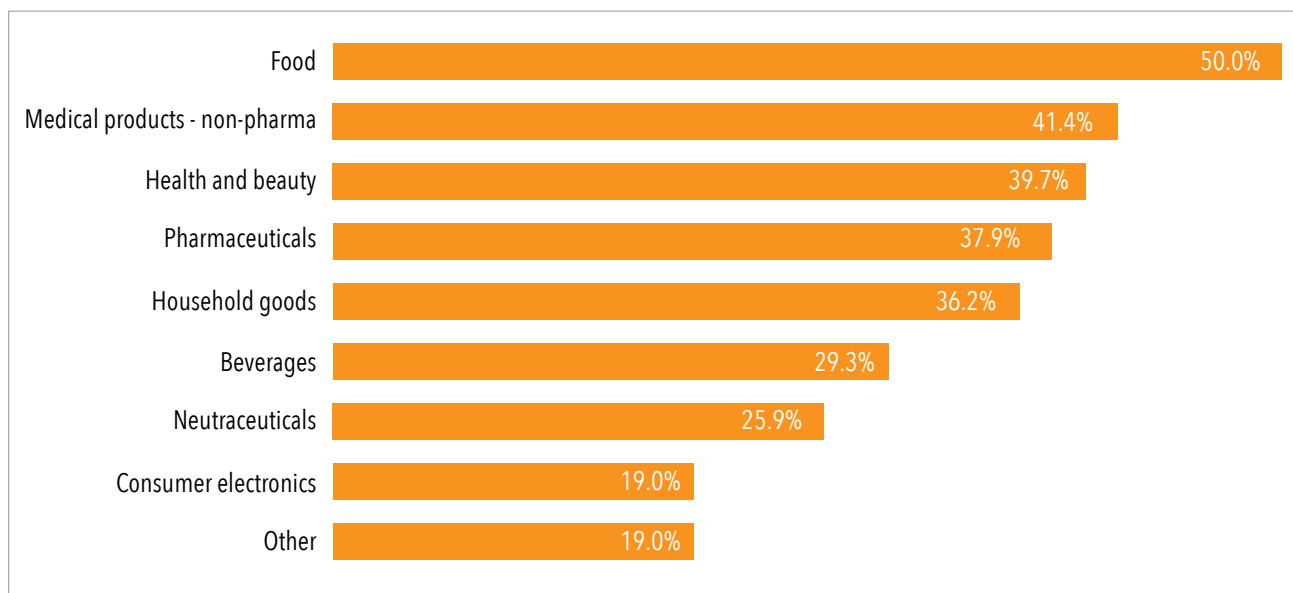
N=61

Markets served the most by our respondents are "Food", "Medical products - non-pharma", "Health and beauty", "Pharmaceuticals" and "Household goods" (Figure 2).

Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

Figure 2: Markets served

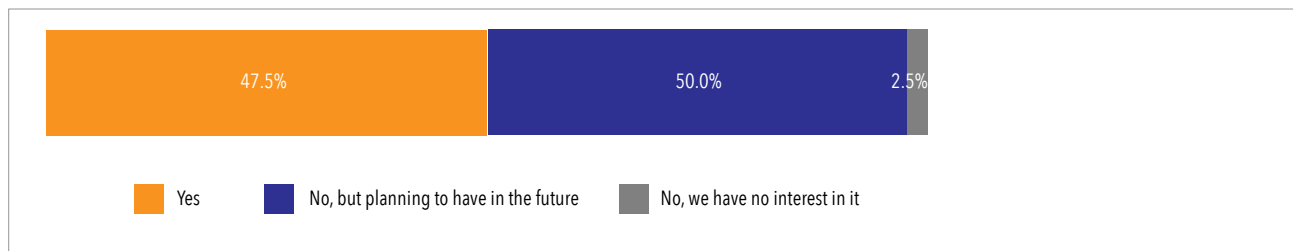


N=58

Those with and without digital

The companies were almost evenly divided in two groups: Those who already had digital carton solutions (47.5%) and other packagers who didn't have digital carton solutions but were planning to have them in the future (50%). Only one company expressed no interest in digital (Figure 3). This mix of respondents is used throughout this report as it gives a great reference to both planning to buy and those evaluating and trying to sell digital solutions in the carton sector.

Figure 3: Do you have a single pass digital printing solution for cartons?



N=41

Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

MAIN FINDINGS

The research team originally planned on breaking this section into those with digital and those still looking at digital. When the data began coming in from the interviews and surveys, it became clear that the thinking is very similar and that each group can learn from the other.

What is the perceived value in being an early adopter?

Those companies who have invested early in a single pass digital solution said, for the most part, they are happy they did so. Granted, it would be unexpected that someone investing so heavily would say they made a mistake, but in candid discussions with a number of early adopters, the research team feels for the most part they all would do it again – albeit with some changes to their execution plans. Some of these lessons learned will be addressed later.

There were two main themes identified by this group of visionaries. First, they felt getting an early start in the digital carton revolution has positioned them better for when more broad ranging solutions come to their sector. Everyone interviewed sees their current investment as just the first in a future of digital investments. They expect the two-to-three year jump they have on the digital market to be a strategic advantage for their companies.

When asked if they see their companies as early adopters of innovations and disruptive technologies, most related to that characterization, but not necessarily in all instances. One interviewee said, “Digital printing has been talked about for so long that it is almost not new anymore.” This sentiment was expressed in most of the other interviews as well. While digital print production for folding cartons is in its infancy – far from mainstream – the topic has been around so long that it is a frequent point of discussion at conferences and in the trades.

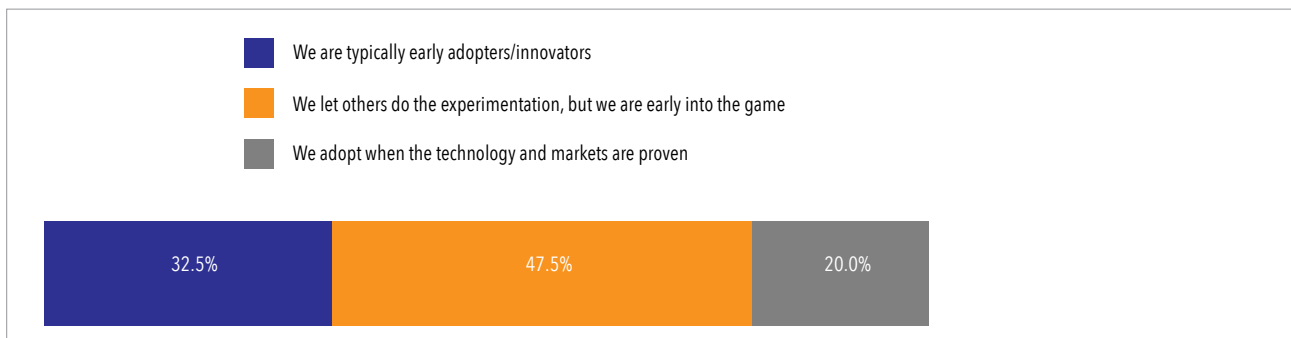
How do they see themselves?

One of the “light bulb” moments of the research came when we asked survey respondents to tell us how they perceived themselves when it came to getting involved with new or disruptive technologies. About 4 out of 5 respondents (80%) have indicated that they prefer to be “early in the game” (Figure 4). Even when we compare those who have already invested in digital with those who haven’t yet but are planning to do so, we find that both groups are very similar in their risk perception when adopting new technology (Figure 5). We believe that with high indications for innovation, the group that didn’t invest in the digital technology yet will most likely become digital sooner than later.

Digital Printing for Packaging: Folding Cartons

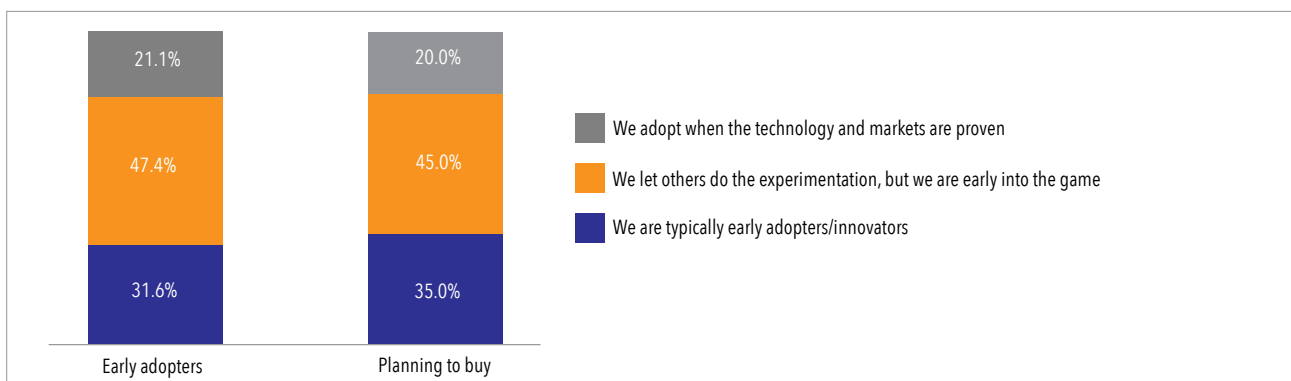
How and Why Decisions are Made

Figure 4: Where are you on the innovation scale?



N=41

Figure 5: Early adopters vs. those planning to buy



N=41

Understand the decision-making process

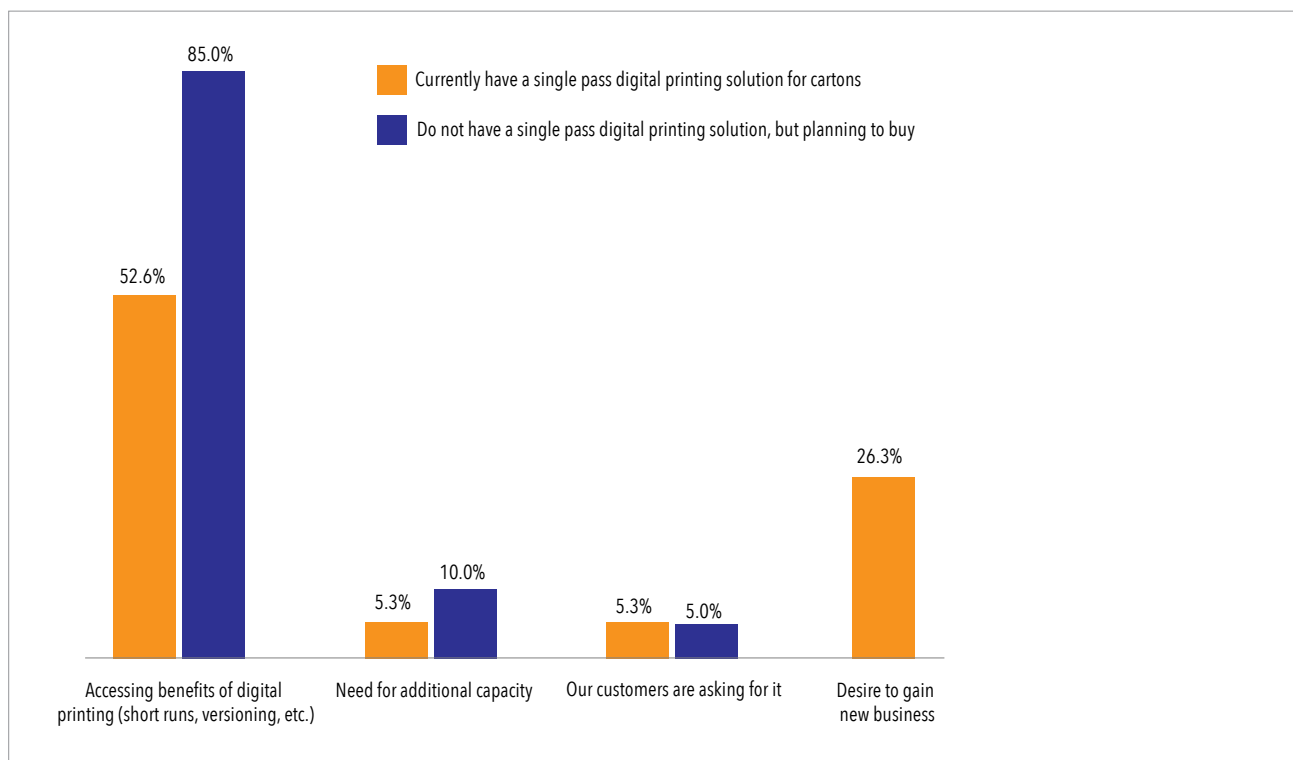
What is the catalyst driving the evaluation?

Companies that have already invested in digital were asked about their motivation for doing so. This group clearly had an objective to be recognized as an early adopter and innovator by their customers. However, only a few said they were being pushed by their customers to invest in digital for their work (Figure 6). This is in contrast to the labels sector where digital is a more mainstream production process and where customers are now looking more favorably and, in some cases, specifying that a supplier have digital printing capabilities.

Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

Figure 6: Main driver for purchasing a digital press



N=40

The major reason for investing in digital was operational efficiencies. Respondents stated that short runs were becoming more troublesome in their facilities, customers were requiring less and less packaging be kept in inventory, and that they were in need of added capacity and wanted to go digital rather than invest in another analog press at that time. This group of early adopters clearly stated a key driver for investing early was the fact that it would give them a leg up on competitors that waited to invest.

Those who didn't have digital equipment yet were similarly clear on why they would (soon) be in digital, stating they were looking at the production advantages digital can bring to their plants. What is interesting about these responses is the lack of reference to jobs that require personalization and one-to-one campaigns – a primary reason touted by OEMs for using digital. Virtually no one in any part of the interviews or online surveys said they were looking for personalization capabilities in digital – or that their customers were asking for it.

With a combination of strong offset analog press sales geared at effective and efficient short runs in the carton sector and a significant number of digital placements occurring in the past three years, it is clear that carton producers are eager for production relief, and are coming at it from both the analog and digital angles.

What needs to be in place before you will invest?

This question was asked of those still evaluating and yet to invest in digital to gain insight to what is keeping them from investing. We asked them to rank several issues thought to be keeping the next round of digital investors on the sidelines.

We assume that if an issue is ranked highly important that it is an issue that is, in the mind of the survey taker, not currently in place. For example, where a respondent has given a high ranking to the issue "my customer request," it implies that today's customer is not requesting and they are waiting for that to happen.

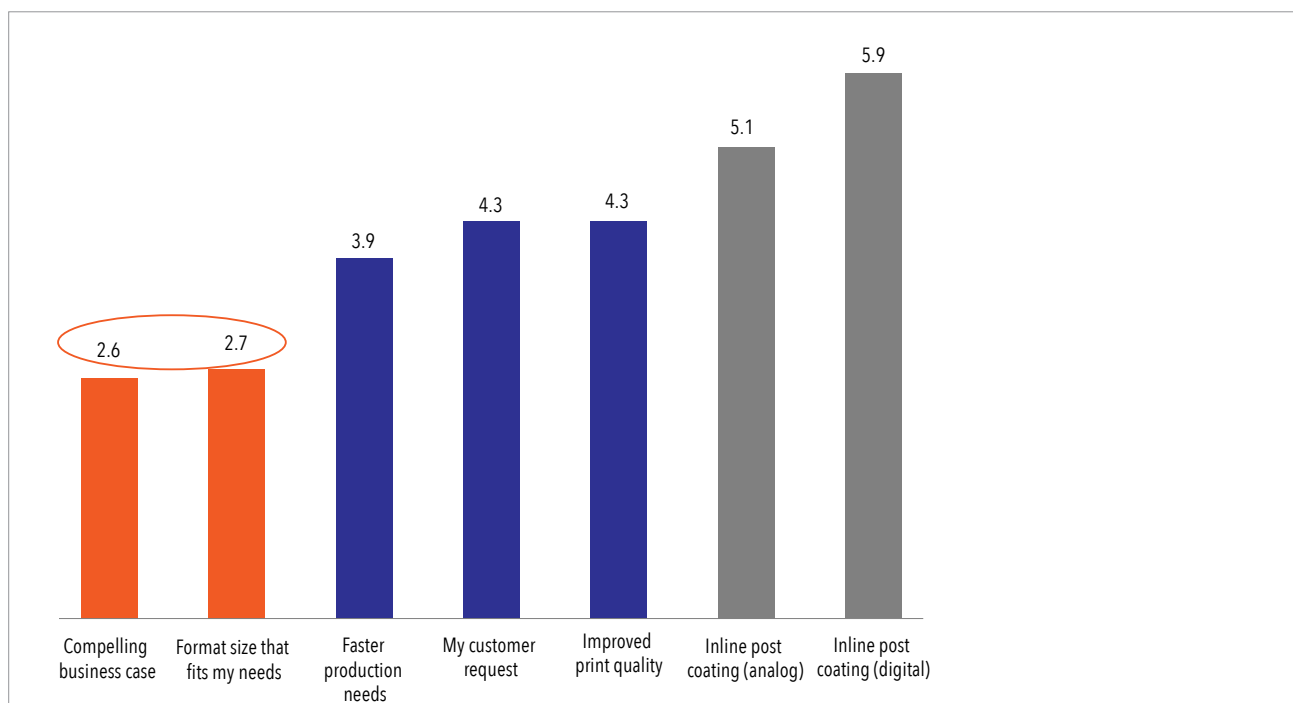
Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

The two issues that are rated of highest importance to be in place before a company would invest go hand-in-hand. Compelling business case and format size ranked by far the highest in importance (Figure 7). The easy side of this equation is format size. It's not off base to say that most of the carton industry is looking for a 40-inch or larger digital solution. With everything else remaining the same, including print quality and production speed, a larger format size may be enough alone to create a compelling business case for many.

It is safe to say that most of those who will be in the next round of digital adopters are already steeped in the developments, and many are ready to move when solutions that fit their needs become available.

Figure 7: What needs to be in place for you to invest in digital?



N=19 (the lower the number, the higher the importance of the factor)

Outsourcing digital

Of those who are planning to invest in digital, 31% currently outsource digital to other companies who have the capability. There are a few reasons given for outsourcing, the first being the obvious goal of not turning away work (i.e., "We will have digital ourselves soon so we don't want our customers thinking they need new suppliers"). Another reason is to gain working knowledge of the digital process through working with others who have already built a digital offering.

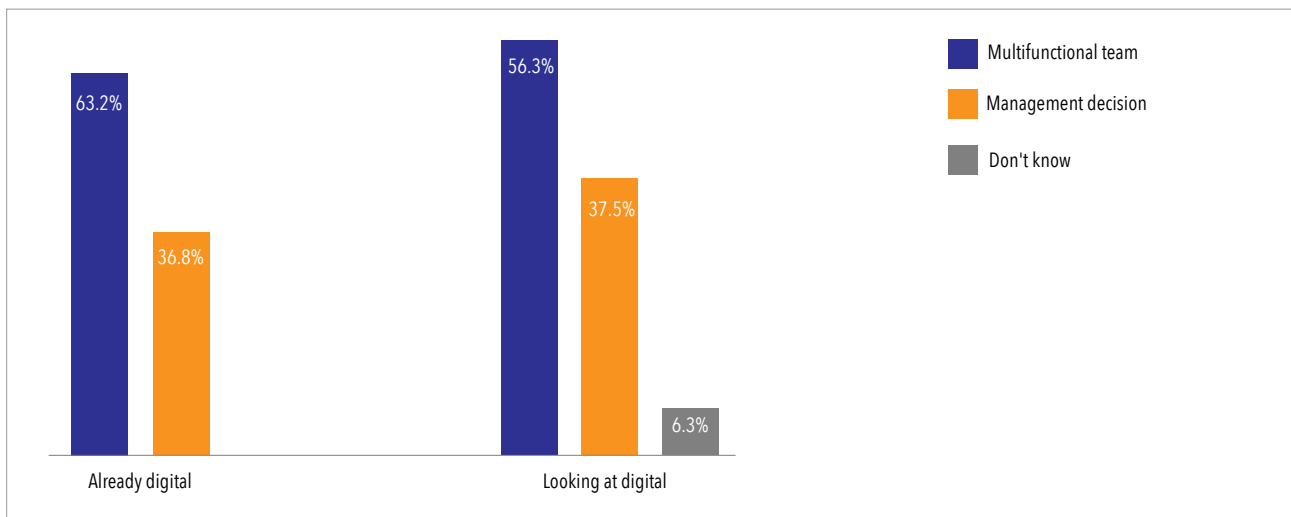
Who makes the decision to invest in digital?

"Was a multifunctional team established to evaluate digital solutions?" This is probably the least surprising question posed to the carton group. There is an entrepreneurial spirit around most independent carton producers in North America and likewise, there is a very corporate feel in most of the larger integrated converter groups. However, there is a trend to have a multifunctional team to evaluate the investment for early adopters and those planning to invest, and approximately 2 out of 3 converters are choosing to do so (Figure 8).

Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

Figure 8: Multifunctional team or management decision?

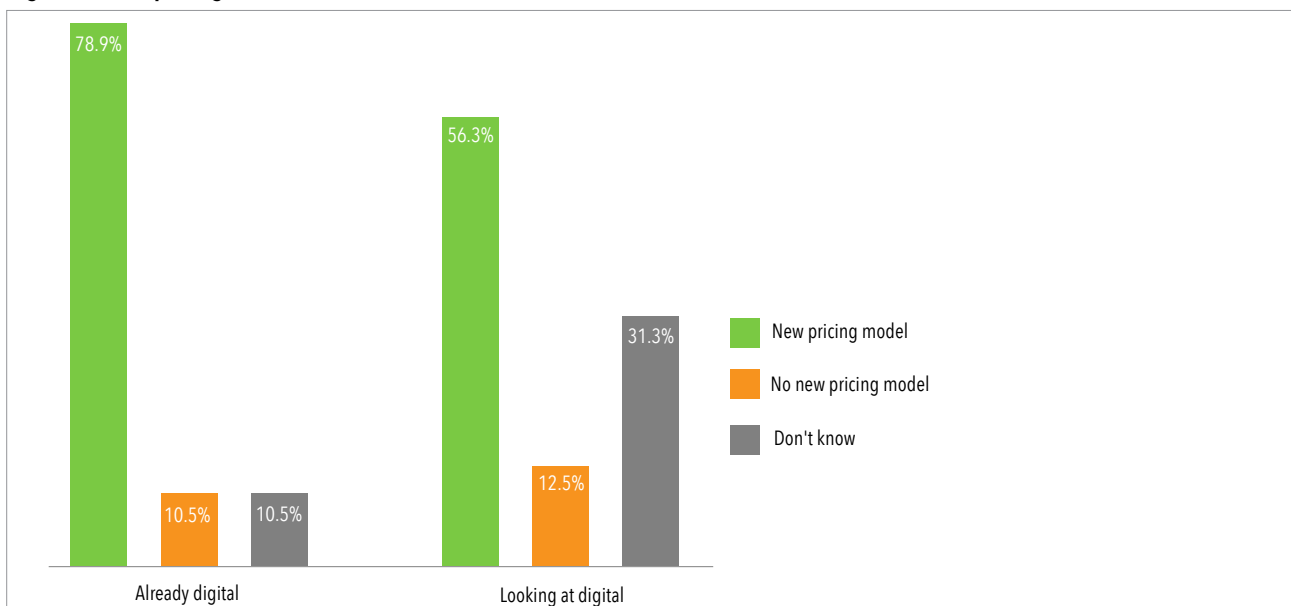


N= 35

Is there a need for a new pricing model?

Looking at how the labels market developed in the early days of digital implementation, we were interested in understanding if companies investing in digital technologies and bringing new production and marketing opportunities to the market would change how they priced their products and services. With 78.9% of those who have already invested stating they have instated new pricing models, it is safe to say that this trend will continue (Figure 9). This also confirms the thinking of innovators in the carton sector to realize the benefits they gain through digital and their willingness to take advantages of the opportunity while it is available. As noted earlier, analog press sales continue to be strong for companies looking in that direction for relief for short runs, but it is unlikely for someone installing a new conventional press to take any kind of price increase to their customers – the reverse would be more likely.

Figure 9: New pricing model



N= 35

Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

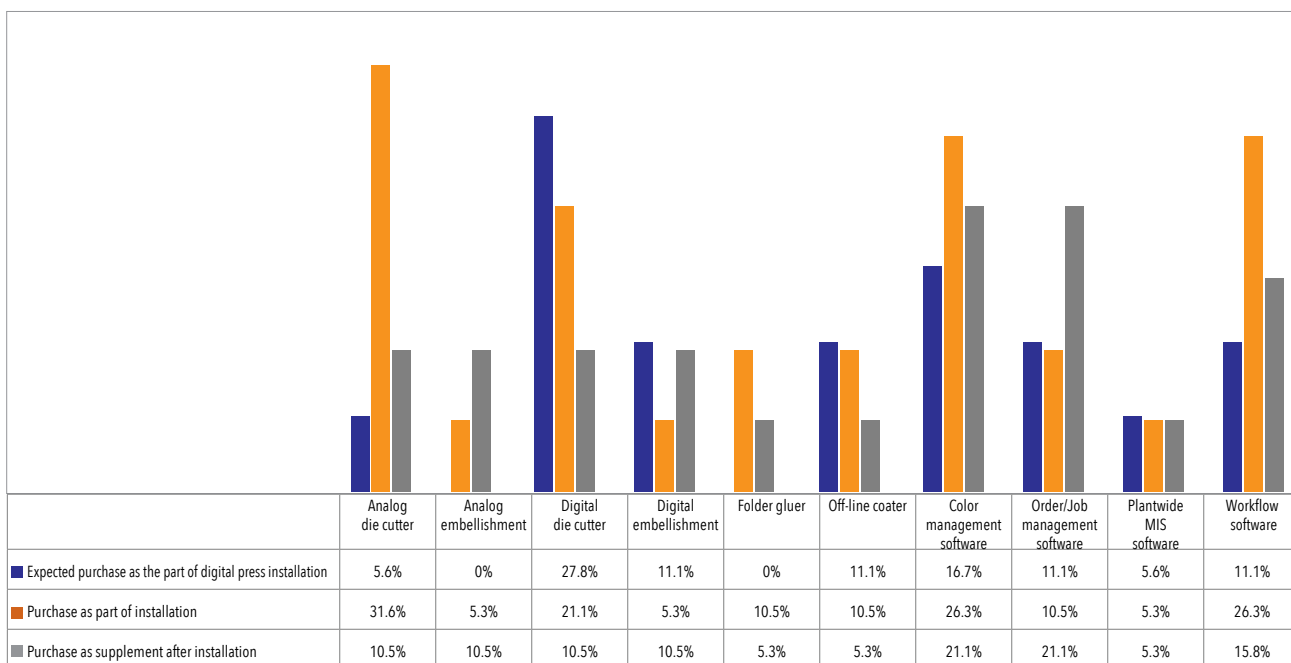
Digital is not just for printing

Much digital packaging hype swirls around the printing component of the process, when in truth there are other innovative “digital” technologies coming into the space. Conferences and trade publications may want to adopt a different title for their events and articles to include other “digital” technologies around package production. Looking at the other physical attributes of digital printing, one needs to also include digital embellishment and digital die cutting. Of our survey respondents, 17.1% indicated that they had invested in digital embellishment systems, and 7.3% of respondents had invested in digital (laser) die cutting. It has been said that, “The easy part of short runs and digital printing is the printing; finishing and die cutting is the hard part.” In discussions with early adopters of these other digital technologies, the sentiment is that they can begin working in the digital world as an early adopter but using a solution that fits their existing work, generating revenue while they continue waiting for the next generation of digital print to arrive.

Software purchases and plans

Equally important is the “digital mix”: the software that early adopters need to consider as part of their move into the digital arena. We can get a good look at this by evaluating the purchases of various types of software – the tools that drive the tools – by the early adopters in our study. What software did the early adopters implement prior to installation and then within 6 months of installation due to “lessons learned” in the early days of implementation? The blue bar in the graph shows what software those still planning to go digital expect to purchase as part of their implementation. As shown in Figure 10, half of the respondents have invested in the types of tools one would expect – tools that are directly related to filling or driving the digital press, such as “order management,” “workflow software” and “color management.” What was learned in the surveys and interviews was that some companies chose to make larger-scale changes to the way they did business by adding “plant-wide MIS” solutions to their initial investment. Also, some companies invest in infrastructure ahead of “going digital.” As one respondent said, “We have invested heavily in infrastructure that includes hardware and software to be ready for our digital press when we finally get it in here.”

Figure 10: Equipment/software purchases (expected, as part of installation, after installation)



Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

How was digital printing ultimately evaluated/graded?

Companies that are investing in digital must integrate their digital solution into an existing production environment, so matching existing production on their analog systems is a critical element in their investment decision. Extended color gamut printing on digital solutions is a way they could match production on analog presses that utilize special colors. While the use of extended gamut printing often slows digital presses, the need for matching production output outweighed the need for speed. Customer feedback of the digital print was also a key criteria. Some said they showed customers samples of digital and analog and that they were unable to discern one from another. A key takeaway here is that the quality of digital print is now considered acceptable for most carton producers and their customers.

How was an ROI established?

Interviewed companies all stated they had a great deal of production run data, and all saw the potential opportunity for a digital solution fitting into their production mix, but noted the lack of actual production data from the vendors that could accurately be represented in ROI projections. "They gave us their best guess, which they thought was accurate," one interviewee said about the run data they were given for projection purposes. "They just didn't know what they didn't know at the time." The general feeling is that broader and more accurate production data was needed at the time they were evaluating to allow for accurate ROI evaluations. ROI data using the estimates supplied by the vendors generally showed a much more optimistic result than was actually delivered. System downtime due to maintenance and adjustments was the main reason given for the decreased throughput expectations.

The median ROI was 2.7 years for all participants. Interestingly, those who already invested in the digital equipment had more optimistic expectations of ROI being 2.4 vs. ROI of 3 years for those who were planning to invest.

How long did the evaluation process take?

When asked how long the evaluation process took, interviewees most often chuckled before responding. Digital printing for folding cartons has been talked about in earnest since drupa 2012. Early adopters of the technology were looking at systems even before 2012, so the answer to "How long did it take?" could be as long as seven years. The shortest time given from the time "real looking" started was three months; other responses ranged from 12 to 18 months. The answer to how long these kinds of evaluations and decisions usually take was given the same 12 to 18 months.

It is safe to say that most of those companies that are in the evaluation stage of their digital exploration are well down the road to making a decision and are just waiting for the right solution to be presented. The time to prove a technology worthy of consideration will constitute the bulk of time spent in a sales cycle, and the business case can quickly fall into place if OEMs do their homework ahead of time.

Getting information on digital print

Nine out of 10 respondents find accessing information on innovations, such as digital printing and finishing, sufficiently easy. There are various sources of information (Table 1), but many said that they were going to need much more information as they move deeper into their exploration.

Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

Table 1: Sources of information on innovations, such as digital printing and finishing

Sources of information on innovations, such as digital printing and finishing	
General Conferences on Digital Printing for Packaging	53.7%
Industry or Business Association Meetings and Newsletters	48.8%
Vendors and Suppliers in my facility	48.8%
Industry Publications (print and websites)	46.3%
Industry or Business Association Peers	39.0%
Trade Shows	39.0%

N=28

The most valuable sources of information are trade shows (75%), conferences (75%) and vendors and suppliers (61%) (Table 2).

Table 2: How valuable are the informational sources?

How valuable are the informational sources?	
Trade Shows	75.0%
General Conferences on Digital Printing for Packaging	75.0%
Vendors and Suppliers (my facility)	60.7%
Vendors and Suppliers (their facilities)	57.1%
Industry or Business Association Meetings and Newsletters	50.0%
Industry or Business Association Peers	50.0%
Vendor-User Group Conferences	32.1%
Industry Publications (print and websites)	28.6%

N=28

Which trade shows have they attended in the last 6 years? The most frequently mentioned destinations were: PACK EXPO, FPA, CPP Expo, World Pouch Forum, drupa and Digital Packaging Summit.

Installation and Integration

The research team wanted to get an understanding of the process and planning that went into bringing a new printing process into an existing environment, and how the early adopters planned and executed this process.

Project Management

For any project of this magnitude, there will be a project management team put in place. Interviewees all stated that their personnel were the leaders of installation and integration teams with significant assistance from the vendors. For the physical part of the installation, the vendors aided in-house teams with recommendations and specifications needed. Press installations were often cited as not being specified with enough physical working area available around the press. The issue of space is compounded by the number of work-in-process pallets staged in a digital press area. One interviewee said, "We had no idea the volume of small skids that would flow through this press and we wish we had planned double the space around it."

Digital Printing for Packaging: Folding Cartons

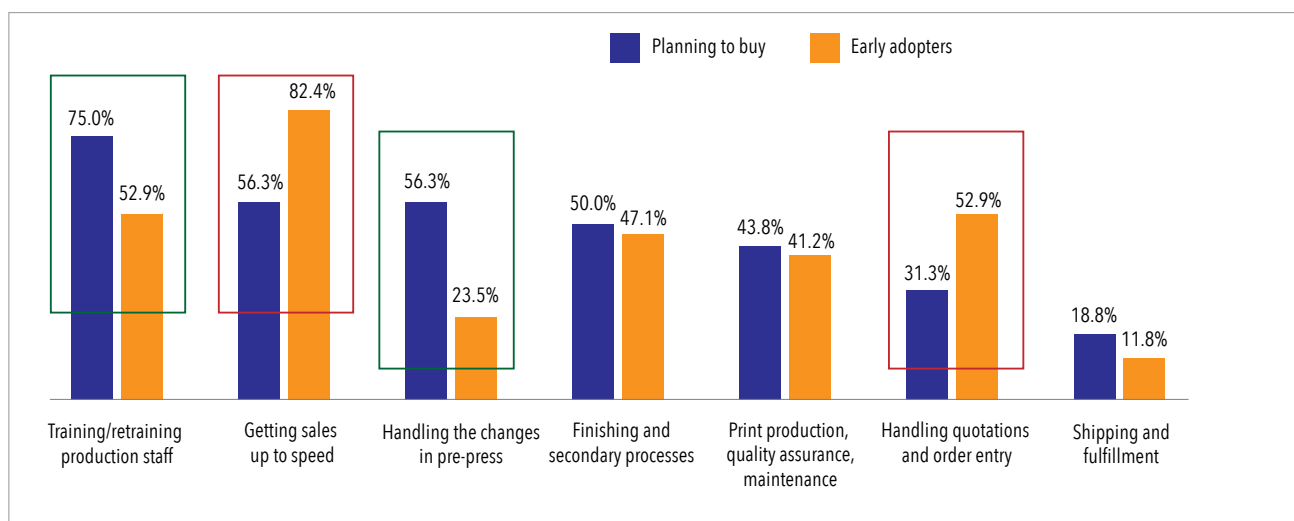
How and Why Decisions are Made

Challenges: areas easiest and hardest

The online survey gave us a chance to gauge what prospective users see as the largest challenges those planning to buy expect to encounter vs. what early digital adopters actually did encounter. The challenge discrepancy that jumps out as most obvious is how getting sales organizations up to speed is expected to be problematic (56.3%) vs. how it actually was problematic (82.4%) (Figure 11). For handling quotations and order entry, the challenges seem to be also underestimated (31.5% expect it to be an issue vs. 52.9% actually experienced it to be).

The second area of interest is how each group viewed getting prepress operations up to speed to handle the digital press. The expected challenge (56.3%) was higher than the actual (23.5%). This can be attributed to trade shows' and conference speakers' good work helping implementation teams to understand the importance of getting prepress right ahead of installing the press as well as training by the OEMs to get customers correctly positioned for pushing a much greater volume of work through prepress. This was substantiated in the qualitative interviews. Most people we spoke with said they invested or planned on investing heavily in infrastructure that includes upgrades in prepress capabilities ahead of installation of the new asset. One such comment was, "We plan on getting our infrastructure set up right well ahead of getting our press installed. That is the last thing we want to worry about after the press hits the floor." It is also safe to assume that most early adopters of digital presses were also early adopters of advanced prepress tools to enhance their short-run graphics and plate-making capabilities. These companies are positioned well for adding a digital press to their processes.

Figure 11: Challenges seen by early adopters vs. those planning to buy



Sales Training – Across the board, those in this group of digital investors stated that sales training was the most difficult to plan and train for prior to, and even after, their systems were installed and brought online. As was found in other print sectors where digital was integrated – sign and display and commercial print – selling digital to an existing customer base is a difficult proposition. The benefits that come with digital are not fully understood by either the producers of digital packaging or their customers. This makes developing and implementing an effective sales and marketing plan exceedingly difficult.

There seems to be a decided need for effective sales training programs for these early installations of digital printing for folding cartons. Understanding the value proposition customers of digital printing are looking for is a critical need.

Sales professionals are being told to sell short run digital cartons in volumes that before digital would be unimaginable to produce. How are these short runs priced? How is a sales person compensated for an order that can be shipped by FedEx instead of on a company tractor-trailer? How can a company capture the associated real value that just-in-time manufacturing can bring to a customer? These are some of the questions companies new to digital need to understand as they build sales and marketing programs.

Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

Prepress – The other area of solid agreement was that prepress was an area where companies were well prepared for the addition of a digital press. This is a testament to the planning these companies undertook ahead of their installations. OEMs have a solid understanding of the volumes and types of prepress files that are needed to feed their systems. It is also safe to assume that companies making a digital investment will have made similar investments in their digital front end in recent years.

Order Entry – Order entry, unlike prepress, is an area that most felt was more problematic for them upon startup than expected. “We did not realize that we needed the same level of automation in our order entry process as we do in our prepress operations” covers the sentiment heard from most in this group.

Production/Quality/Maintenance – For the most part, interviewees agreed that they were well equipped and trained by their systems suppliers to produce work when following the systems installation. They said training programs had been developed that were good at getting their internal people up to speed on making the systems productive. Operator training, along with training of maintenance and quality programs, was thought to be well developed and delivered.

Shipping and Fulfillment – Like prepress, efficient operations have efficient fulfillment operations in place. Early digital installations were well equipped to handle the new volumes of short-run orders that would come off the new press. “We have been doing short runs for a long time and were well equipped to handle the added volume when it came.” This statement is indicative to those early adopters who had downstream efficiencies built into their plant operations well before the digital press came into play.

Finishing – This is another area where this group felt less prepared than they would have liked following their digital installations. Most were 40-inch shops taking in a half-size digital press that found that dedicated B2 die cutting was needed and added it within the first few months following the digital press installation. Most in this group added B2 analog die cutting solutions. Those who already had B2 presses and finishing found integration of the digital production seamless once volume issues were addressed. Some added digital die cutting and most said they are considering it, but cited the additional cost and throughput needs to be limiting factors at this point.

Operator Selection – It is always good to take advantage of what others have learned, and this seems to be the case when choosing the right kind of person to be a digital press operator. The labels sector has been digital for more than a decade, and companies implementing digital solutions have decided what type of person makes the best digital press operator many times over. Like conventional presses, digital presses perform best when file preparation is done correctly and consistently, and maintenance is performed as and when needed. With this said, many of these operations for analog presses are done with a mix of keyboard entries managed by software and mechanical operations that require cleaning and moving things. While performing similar operations on digital presses most are done through interactive workstations and software. This kind of focus for digital solutions has led most in this group to find their digital press operators from the ranks of their prepress operators. One interviewee put it this way: “Press guys run the department, but prepress guys run the presses.”

Why invest in digital?

One of the objectives of this study was to “get into the minds of the converter regarding digital investment” so we can understand what drives such major decisions. We asked the converters what they expected to gain out of their digital investment. From Figure 12, we see how the early adopters saw their investments panning out compared to those still evaluating a digital move. It is important to remember that some of these early adopters could have made their move to digital as much as four years ago. A lot has changed since that time in their evaluation process and we believe the results demonstrate a maturing of the industry on the place digital print can and will fit in the carton sector.

Personalization – One area to note is the way each group looks at the ability to run jobs requiring variable data (where every carton is different). Early adopters saw this as a major issue while those who are still looking do not rank that as high. This was substantiated in the interviews where we found digital users finding less use for personalization than they thought they would going into the project. This flies in the face of what OEMs keep touting as a major driver for digital.

Operational relief – Scoring high by both groups are issues related to improving plant operations. The ability to more effectively run versioning jobs, improved turnaround times and better use their analog assets are all issues that support production floor efficiency.

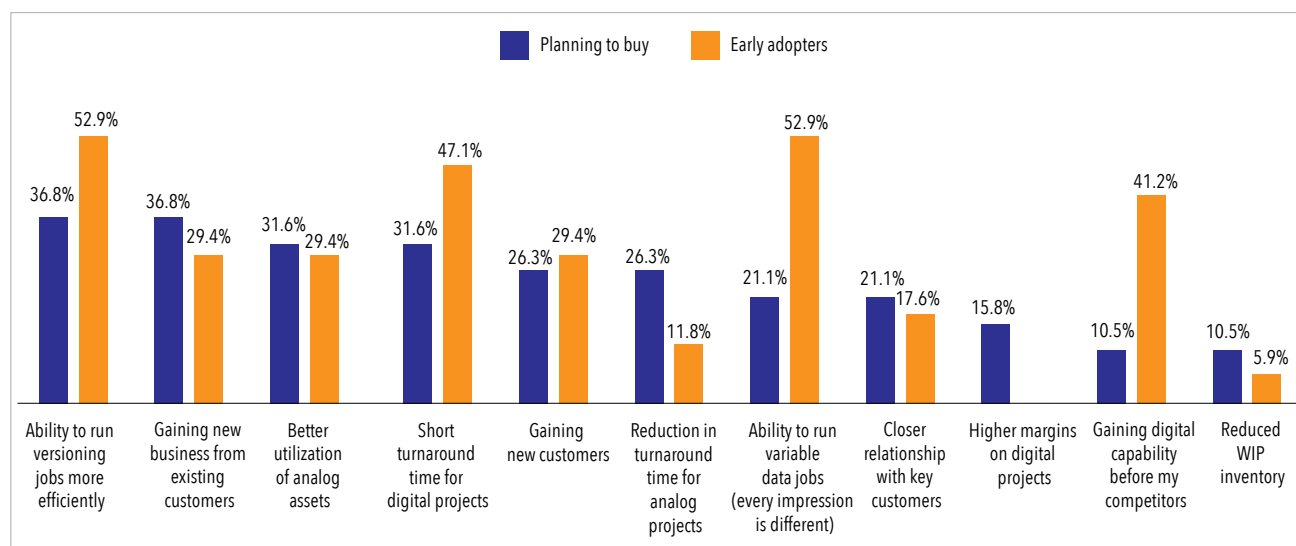
Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

New work – Also scoring high are the prospects of gaining new work from existing customers as well as gaining new work from new customers. This shows a desire to leverage significant investment and new capabilities to get into new revenue streams that are digitally enabled.

Getting ahead – Those who have yet to get into digital seem to have conceded the fact that the early adopters have gained the lead on them in the marketplace by not ranking highly getting into the market ahead of competition. However, one needs to take into account that 31% of those yet to invest say they currently outsource digital printing which allows them to stay engaged with their customers and gain digital understanding while they wait for their own digital entry.

Figure 12: Digital benefits for early adopters and those planning to buy



Features and preferences

Format size

For this line of questioning, we broke format sizes into four groups: under 29 inches, half size (B2), full size (B1) and large format (approximately 56 inches by 40 inches) (Table 3). Clear from this table is that a 40-inch press is the most desirable size for the survey respondents, however, a B2 format can also fit their needs.

Table 3: Preferred format size – early adopters of digital (with) vs. those planning to buy (without)

Format size preference	Under 29"		Half size (B2) 30" by 23"		Full size (B1) 40" by 30"		Large format 56" by 40"	
	With	Without	With	Without	With	Without	With	Without
Desirable	12.9%	0.0%	25.8%	25.8%	35.5%	45.2%	22.6%	19.4%
Neutral	6.5%	12.9%	9.7%	9.7%	6.5%	3.2%	6.5%	0.0%
Undesirable	32.3%	35.5%	16.1%	12.9%	9.7%	0.0%	22.6%	29.0%

Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

Imaging technology

Trying to gain perspective on what kind of imaging technology users and prospective users prefer, we asked both groups their preference between:

- Aqueous Inkjet
- UV Inkjet
- Dry Toner
- Liquid Toner/Ink

As demonstrated by the data, carton producers vary in their imaging method preferences, with more than one third of the respondents saying, "Imaging method is NOT as important as matching my analog print and quality" (Table 4).

Table 4: Imaging method preference

Imaging method	
Aqueous inkjet	43.8%
Imaging method IS NOT as important as matching my analog print and quality	37.5%
Dry toner	25.0%
Liquid toner/ink	18.8%
UV inkjet	18.8%

This shows a mature understanding of the current state of digital printing in packaging and goes along with only 47% requiring improved print quality before investing. The technology is not as important as how it works. To OEMs with a vested interest in one technology or another, this is not such good news, but for consumers of the technology this is good news. The industry is now more interested in the function than in the features of the digital offering, and shows a shifting to a more pragmatic view of digital implementation. It is also interesting to note that almost half of those still looking at digital have yet to form an opinion on what imaging technology they prefer.

Views on FDA Approved Inks

How important is the ink approval by FDA? 79% of respondents specified that FDA ink approval is important for them, and 21% were neutral on the subject. This response is reflective of the 70% of respondent companies serving the food sector.

Were expectations met: installation, support, customer feedback?

Our first look at satisfaction came from a question asking if early adopters' expectations were met regarding the two major criteria: print quality and productivity. Quality expectations were met or exceeded for 94%, which is a very good reflection on their installations and suppliers. Production expectations fared a bit worse with 41% saying production expectations were not met, 53% saying they were met and only 6% saying production expectations were exceeded.

We went on to ask early adopters to provide their feedback on the support vendors provided during installation and after installation. Almost all respondents were satisfied with their vendor's installation services (93%). There were some issues on the training and post-installation support (Table 5). Therefore, there are almost twice as many who are satisfied with the quality (94%) than those that are satisfied with production (53%). So, we believe there is still some room for improvement from the OEM's side.

Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

Table 5: Vendor satisfaction

Criteria	
Installation of equipment	93.3%
Training of our operators and maintenance personnel	60.0%
Planning for our prepress and front end (order entry) needs	53.3%
Planning our facility and plant layout	53.3%
Training of our sales team	40.0%
Planning for our post press and finishing needs	20.0%
Preplanning our personnel needs	20.0%

What do customers think?

For early adopters, we asked, "How did your customers react when informed of your company's digital technology investment?" Not surprisingly, two-thirds said their customers saw it as favorable, with the other third replying they were neutral on the topic. This goes along with the fact that most companies say they are not feeling pressure from their customers to go digital. One interviewee even stated that they took a long time to tell some customers because they were worried they were going to ask for price reductions due to the new investment. Another customer just said they did not see any change in print quality with this new digital press.

Digital printing conference organizers work hard to get brand owners on the stage so attendees can hear what they are interested in. After all, they are the consumer of the printed packaging that package printers are producing, and it is natural to want to know what your customers are, or will be, looking to their supply chain to provide. With that in mind, the research team interviewed 11 brand owners of various sizes to get their opinions on the current state of digital printing for packaging and where they would like to see it be in 5 years. We were sure to include both large and small brands; the size of the companies we spoke with went from small local brands to those with \$3+ billion in annual sales and ran the gamut from industrial chemicals to food to health and beauty producers. Because most would only speak if their company was not mentioned, all comments are used in conjunction with others and will not be attributed to any specific company. The common thread was they all were familiar with digital printing for packaging in their companies and in the supply chain in general.

Scale and cost

What is interesting in these discussions is that most of the interest in digital related to cost reductions and process simplification. Most respondents mentioned notable marketing programs that are often touted from the magazines and at conferences but most look at them as "flashes in the pan." While they see the benefits for using digital for specialty programs and brand building, where they see the greatest potential impact is in overall cost reductions.

As you would expect, the larger brands cite the volumes of product packaging they produce as most often best done by volume producers and volume-oriented processes, and by extension they are not well suited for digital printing. But what is interesting is that the next statement these people made showed a shift in the conventional thinking, stating that digital is gaining an increasing place for them as they are seeing shifts of volume from high to medium to low at an increasing pace. This means that 5 years ago there were few projects or SKUs that lent themselves to short-run production or digital production, but that has changed, and brands are open to the benefits that digital can bring them.

Of those we spoke with, 27% said that recent acquisitions of smaller brands have brought to them new smaller volume products that bring along their own supply chains that often include suppliers with digital printing capabilities and a new set of "best practices." "We are not only buying companies, but we are also buying nimbleness and new thinking when it comes to getting products to market."

Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

Who drives digital?

While many said that marketing groups within the company are keen on the capabilities of digital printing for brand-building purposes, all but two companies said that purchasing or procurement groups were the ones that drive large-scale digital efforts within the company. Marketing groups will drive special projects, but purchasing will drive long-term projects such as cost- or complexity-reduction projects.

Total cost

A third of brand owners stated their companies were good at understanding the total cost of an initiative and taking inventory logistics and management and other tangible savings into account when evaluating a cost reduction program that may include digital printing. This is important to understand, with purchasing organizations driving many digital initiatives. This also means that two-thirds of the brand owners did not see their purchasing groups, which would drive digital, as good as looking at the big picture: "Some in purchasing still cannot get over the higher price per carton with digital."

Is it good enough?

Everyone we spoke with had positive impressions of digital print quality. This maps back to the converter surveys, which for the most part found digital print quality acceptable for packaging usage. Those with special color requirements stated a confidence in digital being able to match them but noted a need for comprehensive color management tools to assure it is done correctly.

Digital for e-commerce

Half of our interviewees stated that e-commerce was becoming a bigger part of their company's strategy. "Some of these new companies we are buying are real big in e-commerce," said one company. "And we have to get good at it too, and we see digital printing being part of that mix."

Where would you like to see digital in 5 years?

This question brought forward some interesting comments that speak for themselves:

- "I would like to see late stage packaging done on filling lines. This will require solutions that can check print quality on those filling lines too."
- "I would like to see digital treated as just another printing process."
- "The entire process needs to be more integrated ... I see a time when all our assets from television, radio, internet, print and all flavors of packaging are seamlessly managed and produced regardless of what process is used to get the scene."
- "We have lots of initiatives that are geared at reducing complexity and thus cost, digital can help there, but today it can add complexity rather than reduce it. I see the potential for significant complexity reductions with digital, but it is going to take a while to realize it."
- "We need a total business – end-to-end – solution that includes digital but goes all the way through our business."
- "I would like to see the entire process more 'user friendly,' seamless from concept to package ... not a field of specialist but one of seamlessness."
- "I would like to see digital able to handle larger volumes of our work. Instead of saving X% on a small volume of our work, I would like to see X% saved and a large volume."

Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

CONCLUSION

What have we learned from early adopters?

- Carton converters are happy with the quality of print from digital solutions.
- Having a robust digital infrastructure, such as advanced prepress, order entry, MIS and networking capabilities, is a key element to a digital implementation's success.
- Non-printing digital solutions help companies prepare for digital investment. These solutions include laser die cutting and digital embellishment solutions.
- For site planning and installation preplanning, companies could rely on OEMs, but would be better off by taking on the job of "project management," internally using the resources of the OEMs as needed.
- Early adopters found ROI data supplied by OEMs to be inaccurate and chose to rely more on "gut feel" and "best guess" calculations when evaluating ROI formulations. With a larger pool of installations now and into the future, more reliable ROI data will be available.
- Many carton producers have, and plan to continue, using a different pricing model for digitally produced cartons than for those done conventionally when there is a "value added" component to the product.
- Production relief and new market opportunities are the key drivers of digital investment. Brand owners want digital to work and see opportunities for reducing costs and complexity from their operations.
- With purchasing driving most initiatives, brands are pragmatic when looking at digital opportunities, focusing more on functionality than on the features. Using digital imaging is not as important as matching the company's analog production.
- Getting a sales team up-to-speed before or following a digital implementation was one of the largest challenges faced by early adopters. Sales training and sales program development should be a key point of focus for all new installations of digital presses.

Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

APPENDIX

What do brand owners think of digital packaging?

For the purpose of this report, the interview team conducted in-depth discussions with 11 brand owners to gain their perspective on the use of digital printing for their packaging. The companies interviewed range from small local brands to multi-billion-dollar global brands. To assure candid responses, interviews were conducted with the understanding of strict confidentiality and that all responses will be used without company names associated. Below is a numbered list of the company types and sizes that correspond with the questions and responses that follow. Each participant was asked the same list of questions and then to give their vision of the future 5 years out for their company related to digital printing for packaging.

Brand owner companies interviewed:

1. Large Multinational – Food
2. Large Multinational – Consumer products
3. Large Multinational – Food
4. Large Multinational – Food
5. Small Multinational – Chemical
6. Large Multinational – Consumer products
7. Large Multinational – Cosmetics
8. Small Regional Brand – Beverage
9. Local Brand
10. Regional Large Brand – Food
11. Large Multinational – Beverage and Snack

Q1: What are your overall impressions of digital printing for packaging?

1. Digital for packaging is great for short runs and for matching analog printing.
2. Less than impressed with the productivity of digital so far. Would like to see it used for production printing but our needs are global and large scale.
3. Large-scale production issues. Large CPGs are heavily invested in the way they have done business for years – large-scale production and their suppliers are geared the same way. Most suppliers have some form of digital but most have not fully embraced it yet.
4. We have a growing interest in digital. We see the potential and are looking at it seriously.
5. For our purposes digital is the perfect choice. We have almost all our SKUs shifted to digital for labels and corrugated boxes.
6. Overall, I think it is good, but we have yet to have much experience with it.
7. We are large and global, it is hard to get digital to be implemented everywhere at the same time. We have to work regionally which slows the process.

Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

8. It is great for the PS labels what we use. There are lots of suppliers to choose from and I got a good price shopping around.
9. I think it is great and fast but too expensive. I am a little guy and cost is everything to me especially in startup mode.
10. Good for a lot of users but we are still looking for the right fit for us.
11. Digital is really good at what it is really good at, but it is not really good at a lot of packaging still.

Q2: Do you currently use digital printing for packaging and if so, for what?

1. We use it extensively for testing and sampling. We will typically run 500 to 1000 packages that include labels, cartons and pouches. We print on board, paper and films. We pack most of these products manually. We also do some production runs for small regional products. We have recently purchased some companies that are active in small markets that are new to us and they are already digital users.
2. We use it for testing and product development but not for any production.
3. Digital is being done by some of our regional groups. In North America some of our new acquisitions are startups that are using digital.
4. We have purchased some small brands that are using digital for introductions and even for small run production.
5. We have 700 SKUs that are almost all shifted to digital labels and boxes.
6. We have one product line that is using it a little, but it is too early to tell how effective it is.
7. We do some small special projects in some regions but no real production. We have recently purchased some smaller brands and are learning from them.
8. We use digital labels for all our products and have that from the beginning.
9. All our labels are done digitally.
10. We do some samples and prototyping, but we do a lot of tubs and in-mold where digital is not real strong.
11. We have used digital for some very big projects so far in multiple areas of the world.

Q3: Are these efforts driven from within the company or outside it?

1. We have a sourcing group that finds suppliers with the right capabilities. Sometimes our design firms bring us options for digital suppliers. We are always looking.
2. We have people looking at digital in R&D for supply chain purposes and in marketing for brand building.
3. R&D and packaging procurement groups are actively looking at digital for cost reduction and process simplification.
4. Inside through the new companies and our procurement group that is really good at understanding the overall true cost of producing and managing packaging. Some of our key suppliers are also investing in digital and bringing possible solutions to us.
5. They are driven by purchasing.
6. Inside it is (or will be) driven by procurement. Vendors have come to us, but nothing has happened yet.
7. Most of our interest comes from inside through procurements efforts

Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

8. I knew what I wanted and went out to find it. When I put my first ad out about what we were going to do I got calls from a bunch of digital label suppliers.
9. I drive everything and it is all operations oriented but the labels have to look great too and that is marketing. Both have to go together for me.
10. Driven by marketing.
11. Driven by inside the company.

Q4: Where does your company see using digital and to what extent? Marketing opportunities or Operational (i.e. inventory reduction, faster reaction time).

1. Clearly my group is looking at marketing opportunities as we do all the new product testing, but the company is looking to use digital in other places to reduce inventory and print closer to the production lines and times.
2. We would like to see it help us for supply chain simplification and inventory reduction. There is a lot of interest by R&D in what it can do.
3. We use it for both marketing and operations. New products are a big use for us.
4. We are looking at the e-commerce connection with digital and new product launches. We are also looking at late stage production of packaging.
5. We are driven by operations for cost effectiveness, but our packaging is more attractive done digitally too.
6. We would see the most benefit in operations for inventory management. Much of our product and packaging is produced in China and I do not see a lot of opportunity for digital with that arrangement.
7. We would like to use it for better use of inventory and make business more efficient and marketing is nibbling around the edges for new markets and e-commerce
8. I use it for everything we produce and I see it as both operational and marketing. We are small and nimble and can react very quickly and digital is part of our strategy.
9. As we expand we need to react quickly so I see our use of digital labels increasing.
10. I would like to see digital help us with inventory reductions and faster reaction times.
11. We see advantages in both marketing and operations. The biggest issue is the ability to address the volumes we require, this is where the big money will be seen.

Q5: Do you actively seek suppliers with digital capabilities?

1. The work my group does is not always with our normal suppliers (we do lots of samples), but our suppliers know we are looking at digital very closely and they are all actively involved in digital to one extent or another.
2. We have annual supplier summits where we show suppliers what we would like and ask for their help. We also look to suppliers to bring us ideas, they have much more experience in these things than we do.
3. Yes, we are looking for the best of the best to be our suppliers and we see the best investing in digital.
4. We have some of the best suppliers, they know we are looking at digital and they are too so we do not have to look for new suppliers.

Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

5. No, our suppliers brought it to us.
6. No
7. No
8. I can only use suppliers that have digital.
9. Yes, I have to have a digital supplier
10. No
11. Our supplier network includes the best of the best and the best have digital capabilities and know we expect it too but not every kind of packaging can be done digital yet.

Q6: Are you asking existing suppliers to gain digital capabilities?

1. All our suppliers know we are looking at digital and most of them are helping us in that effort.
2. Through our supplier summits they know what we are looking for.
3. Indirectly, our suppliers know we are looking strongly at digital and favorably on suppliers with digital.
4. We have some of the best suppliers, they know we are looking at digital and they are too.
5. No
6. No
7. No
8. No need to.
9. I only work with digital suppliers.
10. No
11. Not really, they know what we expect and work to adjust their capabilities accordingly.

Q7: Do you welcome suppliers coming to you with digitally enabled opportunities? Marketing Opportunities – Operations Opportunities

1. Our brand design group is open to speaking with suppliers and our R&D and Sourcing groups are too.
2. Yes, but it is really hard to break into our supplier system.
3. Yes, come to us.
4. Yes, our suppliers bring us ideas all the time.
5. Absolutely we welcome the contact.
6. We like to stay in the loop so we welcome conversations, but we produce so much overseas.
7. Yes, we look for suppliers to educate us.

Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

8. If someone has a better mouse trap I welcome them trying to sell it to me.
9. If someone has an idea on how I can make more money I'm all ears.
10. Yes, we like to see what is going on and what our suppliers are up to, they know so much more than us in this area.
11. Yes

Q8: What are your impressions of digital for labels, cartons, flexible packaging, corrugated, displays and POP?

1. For sampling we use it for labels, cartons and flexible and results are good for samples but cartons and flexible are not to production capabilities.
2. Labels are good and play a role, hard to see cartons producing at the scale we need.
3. Does not apply.
4. Digital for all is doing great, production issues for flexible and cartons still exist but quality is good. Most of what we produce is for such high volumes.
5. Very high marks for labels. The high and low end of the market is being served well in the corrugated space. We do displays for marketing and this used to be agony but not today. Do not use cartons or flexible.
6. Labels have been done for a long time and I think that is done very well by digital. We use some digital displays and what I have seen it works very well, quality is good. We use it for some big box programs.
7. What I see is good.
8. PS and glue labels are great, I want to see inexpensive labels for cans and want to get good pricing on beverage carriers digitally done.
9. My labels are great quality, I have seen some displays that are great too.
10. Labels are good, we do some display work with digital in other groups and what I have seen looks good.
11. Labels are very good, cartons and corrugated are gaining and flexible is an unknown to us, we do some displays and that goes very well.

Q9: What are your impressions of digital print quality?

1. Fantastic
2. Quality is good, color gamut is not good. Biggest issue is producing at the scale we need.
3. Quality is very good, still concerned with the price of digital.
4. Mostly good, still some color issues that needs to be verified. Color management needs to be built into the production process.
5. For the right applications digital is 100% on.
6. What I have seen is good.
7. Quality is good.
8. All I have seen is great and I have used most of them.

Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

9. It is great for my products.
10. I see no problems.
11. Most is very good, issues still with color that are getting worked out.

Q10: Do you have a preference for digital technology?

1. None – We don't even know what technology some of our vendors are using.
2. No preference.
3. Personally, I like inkjet, I like the pay for what you use pricing model.
4. No preference.
5. None
6. I like what I have seen by some of the inkjet systems.
7. None
8. Just looking for good quality and good service.
9. I have used 'toner' and inkjet and both are good.
10. None, I like it all.
11. No, I have seen great quality from many different solutions.

Q11: Where do you see digital in your company in 5 years?

1. I want it to fit into our regular production process, to be just another print process. We are always looking to save money, digital can really help us there.
2. Like to see it work for full scale production.
3. I would like to see more brands taking advantage that will raise capabilities and lower prices to everyone. I see using it for promotions, building retailer relationships with exclusivity and retailer specific SKUs and for direct to consumer and e-commerce.
4. Looking at very late stage packaging done on filling lines:
 - a. Need for print quality inspections on the filling line
 - b. Like to see it treated as just another tool in the production box – not a niche process
 - c. Suppliers being more productive in producing our work
5. Tech will be less expensive than it is now. What will be printed will be printed digitally. Would like to see the process more friendly and seamless from concept to production, not a field of specialty but one of seamlessness.
6. We are all about saving time and money. So much talk about it and I would like to see it work for us moving forward. Would like to see it as a regular process.
7. Want to see a closed loop system from concept to production (TV, print, packaging, display, e-commerce).

Digital Printing for Packaging: Folding Cartons

How and Why Decisions are Made

8. Making my life easier.
9. I hope it will let me be even more nimble with my product launches.
10. Helping me get more products to customers better and able to print on plastics and tubs, a better supply chain.
11. I see all our operations tied together – design to production of all packaging and outward facing media that includes e-commerce.

Key responses:

1. We are always looking to save money, digital can really help us there.
2. Five years ago I was Wowed by digital, ten years from now I will be Wowed by digital, right now I am guarded to what it can really do for us.
3. We have bought some small nimble companies to learn how they work quickly and digital is one of the things we are learning from them. We are looking to manage complexity in our production processes. Digital looks to be a tool we can use for this purpose.
4. E-commerce may push us to digital.
5. Even though this is getting better and easier I never see bringing digital printing in-house.
6. I would like to see it as a regular process, not a specialty.
7. The process from design to production is still too complicated and displaced. The process needs to be seamless.
8. I would have had a hard time starting this business up without digital.
9. It would be very hard for me to start this company if I had to do things the old way when it comes to labels.
10. I would like to see digital make a more effective supply chain.
11. Digital has the potential to be a supply chain changer, the next generation or two will make big changes.

WHO WE ARE

Karstedt Partners, LLC.

Karstedt Partners has purposefully positioned itself at the very forefront of technology development and its subsequent adaptation into the packaging graphic supply chain. Over the past 20 years they have ridden the waves of digital technologies from the early days of digital workflows, to digital proofing in the 1990s through Computer-to-Plate in the early part of this century and onto Digital Printing today...not to forget other innovations including RFID, Track & Trace, Brand Security, and just plain Process Improvement. Karstedt Partners has worked on the cutting and bleeding edge of technology development and implementation and brings an enormous level of understanding and industry connections to their clients.

Since 1996 Karstedt Partners, LLC has been a trusted source for insights, innovations, and consulting services to constituents in all sectors of the consumer products and packaging supply chain. Brand Owners, Graphic Service Providers, Package Printers, and OEMs have counted on Karstedt Partners counsel and guidance with developing efficient and effective workflows and tools aimed at improving time-to-market and product quality.

Through direct client involvement and through numerous industry and association research projects, the insights and recommendations of Karstedt Partners has directly or indirectly impacted many in the industry by providing unbiased analysis and assessments of the ever-changing landscape of digital package printing.

Kevin and Jeff welcome your inquiries and comments and can be reached at:

Kevin Karstedt
Kevin@karstedt.com
716-992-2017

Jeff Wettersten
Jeff@karstedt.com
317-710-6744



WHO WE ARE

SGIA — Supporting the Leaders of the Digital & Screen Printing Community

Specialty Graphic Imaging Association (SGIA) is the trade association of choice for professionals in the industrial, graphic, garment, textile, electronics, packaging and commercial printing communities looking to grow their business into new market segments through the incorporation of the latest printing technologies. SGIA membership comprises these diverse segments, all of which are moving rapidly towards digital adoption. As long-time champions of digital technologies and techniques, SGIA is the community of peers you are looking for to help navigate the challenges of this process. Additionally, the SGIA Expo is the largest trade show for print technology in North America. "Whatever the medium, whatever the message, print is indispensable. Join the community – SGIA."

For more information on SGIA, visit SGIA.org.