3D Printing, Business Inkjet and IT Services as Transformative Dealer Opportunities

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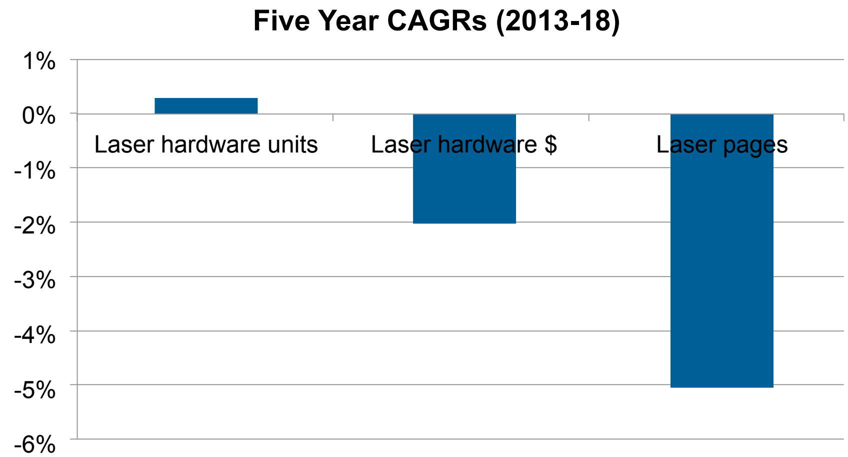
August 8, 2014

Agenda

- The need for transformation
- 3D printing
- Business inkjet
- IT services
- Assessment for dealers

Growth (?) in the Conventional US Print Market

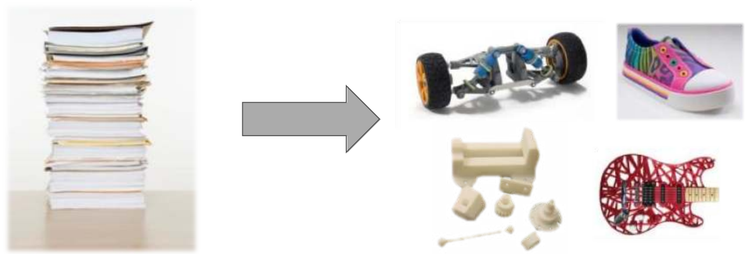


Transformation Means…

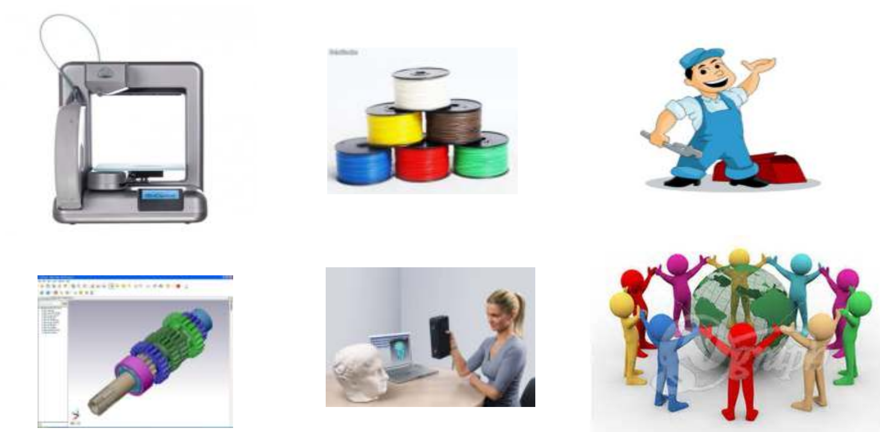
- Finding new opportunities in adjacent markets
- Finding new opportunities in new markets and diversifying

IDC's 3D Printer Definition

"3D printers enable the creation of objects and shapes made through material that is laid down successively upon itself via any number of print technologies from a digital model or file. 3D printers are typically used in additive manufacturing environments for use in industries such as architecture, construction, design and medical."

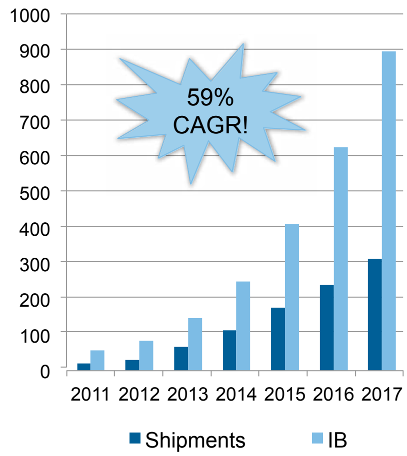


3D Market Infrastructure

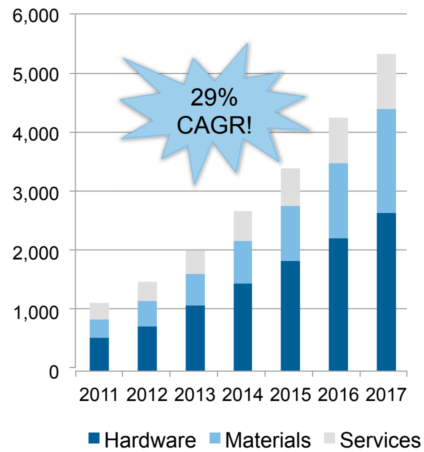


WW 3D Printer Market Opportunity

Units & Installed Base (K)



Value of Shipments ($M)



*IDC Special Study – WW 3D Printer 2012-2017 Forecast and Vendor Shares, #244304, November 2013

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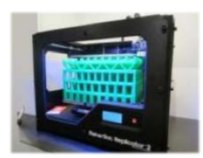
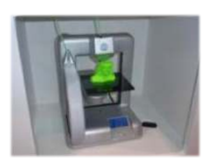
Market Drivers

- Increased media attention
- Influx of market participants
- Improvements coming from established players
- Potential revolutionary business benefits
- Technology that spans multiple verticals
- Significant product evolution is available
- Appealing and known business model





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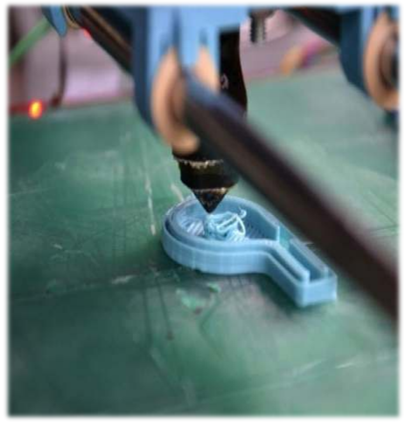
Market Inhibitors

Why Doesn’t Everyone Have a 3D Printer?

- The “build” process is not broken
- Awareness is not realization
- Financial commitment
- 3D printing as a solution?
- Prototype vs finished goods
- Not everyone is a “maker”



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2D and 3D Print Vendors

Alliance or Competition?

Stratasys FOR A 3D WORLD

- MakerBot in August 2013
- Objet in December 2012
- Solidscape in May 2011

3DSYSTEMS

Nearly 20 acquisitions since January 2012

- Printer vendors (Z Corp, Phenix)
- Materials (The Sugar Lab, Village Plastics)
- Software (Geomagic, Digital Playspace)
- Technologies to facilitate 3D print (COWEB, Vitzu)
- Verticals (Paramount, Vidar)

Canon hp xerox RICOH imagine. change. KONICA MINOLTA

- Stretch their market legitimacy
- Partner or enter on their own
- Familiar business model
- Tie-in with existing vertical sales strategy

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Tie in Vertical Market Activity

- Vertical selling strategies are core to the print market
- Unique “maker” needs enabled by 3D printers in specific verticals
  - Aerospace
  - Automotive
  - Education
  - Dental
  - Jewelry
  - Manufacturing
  - Medical
  - Recreational

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Wide Availability of 3D Printers and On-Demand 3D Printing Services

- 3D printers are available through direct and indirect sales channels
- 3D printer on-demand services

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3D Printer Assessment

- High growth opportunity
  - Organic and entry from document printing
- Polarized market
  - Consumer (mass production) versus industrial (mass customization)
  - Barriers to entry
- Market specific
  - Ideal opportunity
  - Service bureaus
- Lots of technologies, applications
  - Room to stretch the market

Inkjet versus Laser

Traditional perceptions and latest developments

Inkjet	Laser
Personal, single user	Personal, single user Shared workgroup/departmental
Consumer, SOHO, small business	Business of all sizes
Low acquisition cost, low volume	Wide acquisition cost range & volumes

- Business inkjet breaks down established market perception barriers with page printing operation
  - Leads to the consideration of inkjet being used outside of consumer, single user environments
  - Rivals laser speed, but also includes cost sensitivity, robust business printing capabilities as well as enterprise software and MPS support

IDC QuickPoll on Business Ink versus Laser

- Poll taken in August 2013
  - Sample from IDC's enterprise panel
- Analysis presented on total number of responses (N=201)
- Respondent base included…
  - 15% from <100 employee companies
  - 53% from 100-999 employee companies
  - 12% from 1,000-4,999 employee companies
  - 20% from 5,000+ employee companies
  - Highest vertical representation was manufacturing (20%); professional services (18%); health care (11%); finance (10%); education (10%)

Overall Printer/MFP Attribute Ratings*

Attribute	Mean	% Important	% not Important
Reliability	4.52	91%	<1%
Output quality	4.33	89%	2%
Toner/ink CPP	4.20	81%	5%
Duty cycle	4.09	79%	3%
Hardware price	4.09	80%	3%
Service & support	4.04	75%	6%
Print speed	4.01	77%	4%
Output durability	3.96	71%	6%
Scan to DM system	3.91	71%	12%
Paper capacity	3.70	63%	7%
Media size range	3.66	62%	16%

*Imaging technology (inkjet, laser) was not considered in these attribute ratings

IDC QuickPoll – Inkjet versus Laser Printing Technology, August 2013

Overall Printer/MFP Attribute Ratings*

Attribute	Mean	% Important	% not Important
Media type range	3.52	54%	18%
Finishing	3.42	55%	22%
A3	3.40	51%	23%
Workflow support	3.37	49%	21%
Customized GUI	3.13	37%	27%
Tablet/SP printing	3.02	39%	33%

*Imaging technology (inkjet, laser) was not considered in these attribute ratings

IDC QuickPoll – Inkjet versus Laser Printing Technology, August 2013

Inkjet versus Laser on Key Printer/MFP Attributes

Attribute	% Very Good/Excellent	% Poor/Not Very Good
Wireless setup	45%	12%
Print quality on plain paper	45%	19%
Print quality on photo paper	45%	23%
Reliability	41%	19%
Cost per page	40%	25%
Duty cycle	36%	26%
Output durability	35%	29%
Print speed	32%	34%

IDC QuickPoll – Inkjet versus Laser Printing Technology, August 2013

Inkjet versus Laser Cost Per Page Perceptions

- 61% say inkjet has a higher cost per page than laser
  - Mean is 55% higher ; median is 30% higher
- 13% say same cost per page between the imaging technologies
- 20% say inkjet has a lower cost per page than laser
  - Mean is 25% higher; median is 20% higher

IDC QuickPoll – Inkjet versus Laser Printing Technology, August 2013

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Inkjet versus Laser – Purchase Likelihood

- Very likely to consider purchasing an inkjet as a shared printing resource over laser – 30%
- Neutral – 26%
- Not likely at all to consider purchasing an inkjet as a shared printing resource over laser – 44%

IDC QuickPoll – Inkjet versus Laser Printing Technology, August 2013

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Has There Been A Change in Opinion Over the Last 2 Years?

- Yes – 35%
  - 63% - More likely to consider an inkjet as a shared printing resource instead of a laser
  - 37% - Less likely to consider an inkjet as a shared printing resource instead of a laser
- No – 65%

IDC QuickPoll – Inkjet versus Laser Printing Technology, August 2013

Qualitative Cost Comments Point To Challenges for Inkjet

- "The inkjet print cartridges are more expensive and do not last as long as laser."
- "We just stay away from inkjet printers since the replacement cartridges are too expensive."
- "Laser prices have come down which equals better quality at better prices."
- "Laser is cheaper to operate and we get great results."
- "Inkjet has a lot of waste due to employees not controlling the use of color when all they need at the time is black."
- "Cost of the inkjet cartridge is prohibitive to use."

Qualitative Quality Comments Point To Challenges for Inkjet

- "We generally print to a laser printer for black-and-white documents because they tend to be a little sharper."
- "Laser gives better output for archival purposes."
- "We prefer the output quality of laser."
- "Inkjet quality is generally lower than laser."
- "Inkjets tend to clog and are messier."

Qualitative Durability and Reliability Comments Point To Challenges for Inkjet

- "We did have some inkjet-based printers in the past. However, the ink was water soluble and documents would run if they got wet. This was a big deterrent to using them."
- "We cannot use inkjet for professional documents where the ink can easily run and smear."
- "Inkjet is not as robust as laser."
- "Inkjet printers seem to be fragile."
- "Some areas need higher volumes and I haven't found an inkjet that could handle it."
- "Laser is more durable and lasts longer."
- "Laser requires less repair per year."

Qualitative Print Environment Comments Point To Challenges for Inkjet

- "We'd consider inkjet for only a very small office…less than 10 employees, but typically 1-5 employees."
- "We use inkjets in individual offices/cubes."
- "I haven't really given inkjets much of a chance other than as personal printers."
- "I have always used inkjet printers for my home office, but it's still lasers in the office."

Qualitative Comments on Multiple Issues Point to Challenges for Inkjet

- **Durable and quality** – "Lasers are used for high volume printing or when better quality is needed."
- **Speed, cost and durable** – "Lasers are faster, cheaper and more durable."
- **Speed and durable** – "We have laser printers and they just seem to work faster and are more durable."
- **Cost and speed** – "The cost of using an inkjet seems prohibitively high and the print time is long."
- **Speed, quality and cost** - "We can do more printing, better quality with fewer units at a lower cost per page with laser printers."
- **Speed and lack of color need** – "Laser printing is fast and color is not needed for the majority of our printing.
- **Speed and cost** – "Laser printers seem to print faster at a lower cost."
- **Speed, lack of color need, durable and cartridge yield** – "Inkjet printers are slower and seem to be better suited to individual use. Almost of our printing is black-and-white, so laser is faster, documents don't require drying and the cartridges are larger and last longer."
- **Quality and speed** – "Inkjet output quality and speed for graphic presentation cannot match with laser quality and output speeds."
- **Cartridge yield and speed** – "Inkjet print cartridge changes are frequent…print speed is slow."
- **Quality and speed** – "Hopefully, one day, inkjet quality and speed can catch up to laser."

Inkjet Vendors Are Not Deterred

- HP
  - Officejet Pro X
  - Officejet Enterprise Color
  - “2X the speed at half the cost”
  - Instant Ink business model for consumers

- Brother, Canon, Epson have mostly desktop models, but line shifting upmarket

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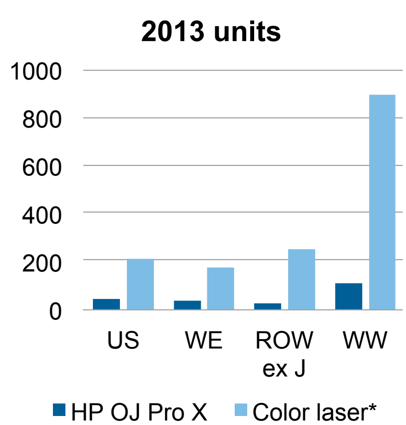
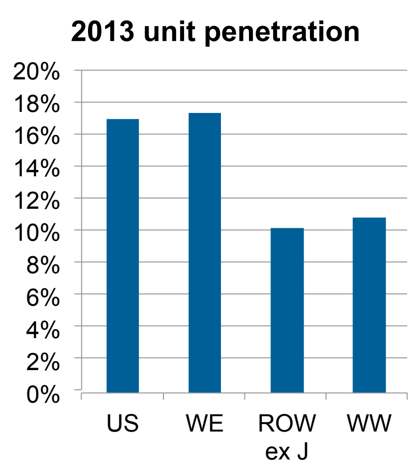
HP Officejet Pro X versus Competing Color Laser Devices





*Color laser devices priced between $375-$1,199 and speeds between 21-69ppm

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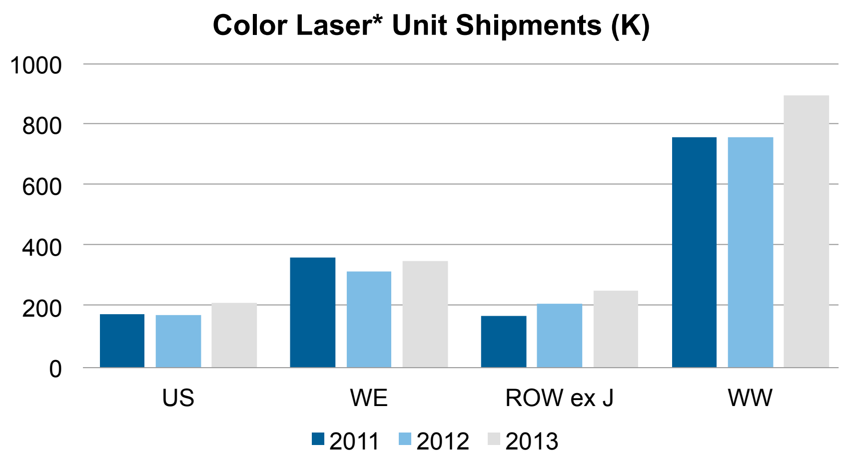
Officejet Pro X Market Impact?



*Color laser devices priced between $375-$1,199 and speeds between 21-69ppm

Business Inkjet Assessment

- Expect HP to push hard on inkjet
- Remaining inkjet vendors examining with high interest
- Inkjet has perception objections to overcome

What's on the Mind of IT Managers?

1 IT Consumerization/ "BYOD"

- Employee mobile devices and applications **require IT management solutions.**
  - **Fundamental requirement**

2 Cloud

- Substitute for traditional hardware, software, managed services. **Business model changes, prices decline, less IT staff and different skills required.**
  - **Most disruptive of all!**

3 "Big Data"/ Analytics

- How can **IT help the business use the data from social media, web sites (theirs, others), customer service, devices, etc.** to make real-time decisions , and predict customer, employee & device behavior?
  - **Greatest opportunity to differentiate is Predictive Analytics**

4 Security and Governance

- **Loss of control** as line between what is "work related" and "personal" starts to melt. IT lacks ability to create governance models so puts head in the sand.
  - **Fundamental requirement**

5 Maintaining Relevance

- IT's role is being challenged - IT is increasingly **more critical to the business and less critical for the delivery of applications and infrastructure. Is IT up to the challenge?** Does it bring the needed skills?
  - **A growing requirement and differentiator**

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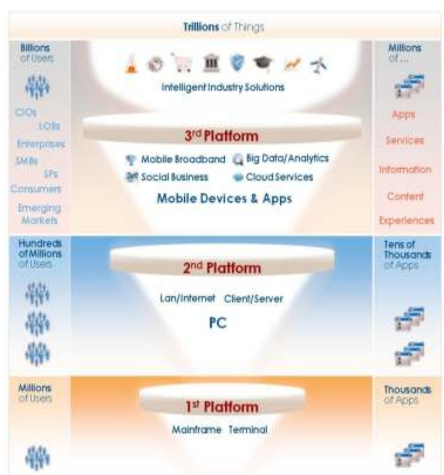
Competing on the 3rd Platform (Cloud, Mobile, Social, Big Data Analytics) Will Drive Most IT Growth

From 2013 through 2020, 90% of IT industry growth will be driven by 3rd Platform technologies that, today, represent just 22% of ICT spending.

80% of competitive energy should be focused on strengthening 3rd Platform offerings and capabilities



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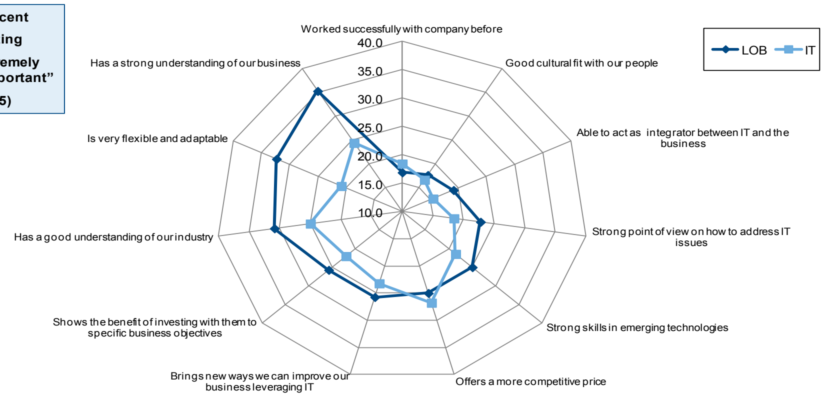
Most Important IT Services Qualities

IT versus LOB

On a scale of one to five with one being "not very important" and five being "extremely important", please rate the importance of the following characteristics:

Percent rating "extremely important" (5)



N=304

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Evolution to Managed Document Services

Basic Print Services (BPS)	▪ Hardware, supplies and service ▪ Remote monitoring ▪ Combined billing and reporting
Managed Print Services (MPS)	▪ Assessment ▪ Rightsizing ▪ Proactive management ▪ Ongoing optimization ▪ Change management
Managed Document Services (MDS)	▪ Assessment ▪ Rightsizing ▪ Proactive management ▪ Ongoing optimization ▪ Change management
IT Services	▪ Remote and mobile support ▪ Scanning and imaging services ▪ Paper-to-digital workflows/content management ▪ Vertical/LOB business processes ▪ Managing centralized copy/print/mail facilities ▪ Sourcing/procurement of external print

Vendor IT Services Offerings as Part of An MPS Strategy

- Direct MPS offering part of a broader IT Infrastructure Outsourcing portfolio
  - Asset management, site support, workplace software management
- 70% of the company's business through the channel (85% in PPS division)
- Turnkey MPS to IT services providers
  - HP owns, commissions partners
  - SI recruitment

- All Covered
  - Remote IT management
  - Help desk
  - Cloud
  - Security
  - Application development
- Dealer sells & owns, but AC delivers the services
- 70 dealers, US program

RICOH imagine. change.

- mindSHIFT acquisition – January 2014
- Integration unclear…channel role?

- Next generation MPS (11/13) includes Xerox Print Server Management Service
- Add on to MPS
  - Remote monitoring by ACS
  - Feedback to MPS personnel who work w/customer

IT Services Assessment

- IT services provide an opportunity to grow share of customer as part of MPS
  - (e.g., take over helpdesk overall, can assist with PCs, servers, SharePoint, etc.)
  - Will compete with pure IT services providers, but can use print domain expertise as differentiator
- More interest in dealers moving to IT services than IT service provider moving to MPS
  - Exception is IT providers who already provide print infrastructure
- 3rd Platform technologies will play a significant role in the evolution of the IT services play

Key Trends in a Transforming Market

Trend	Comments
Decision maker	• Who to influence and sell to • LOB's expanded role due to cloud and IT consumerization • CIO shifts to "innovation" and needs to integrate w/business • CMO…customer experience extends beyond marketing
Business process optimization	• More complex, requires software and services capabilities • ECM is required; search, intelligent capture and BP management • Cloud/on-premise and mobility must be supported • Internet of Things extends to images, video, audio to be managed • "Big data" and associated analytics is a huge value add

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What This Means for Dealers

Market	Comments
3D printing	• Dealers testing the waters • Vertical opportunities • 3D Systems and Stratasys seeking channel partners • Konica Minolta is in, HP is coming and others expected
Business inkjet	• Will HP's marketing message succeed? • Obstacles to overcome, but… • Technology offers gains over conventional laser
IT services	• Extend your MPS offering beyond print • 3rd Platform opportunities • LOB plays a key role

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5 Ways to Succeed in Today's Evolving Technology Environment

The link between technology and business results has never been stronger, shifting buying centers away from IT and toward the business. Navigating these waters requires a change in your approach.

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