

Beyond the Page

Innovation in Digital Printing ...

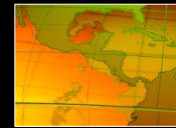


Ron Gilboa

Director, Production & Industrial Printing Advisory Service
June 2016



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Agenda

- 1 Introduction
- 2 Market Trends Office Voices From The Field
- 3 Opportunities in Production Print
- 4 Opportunities in Wide Format Printing
- 5 Opportunities in 3D Printing

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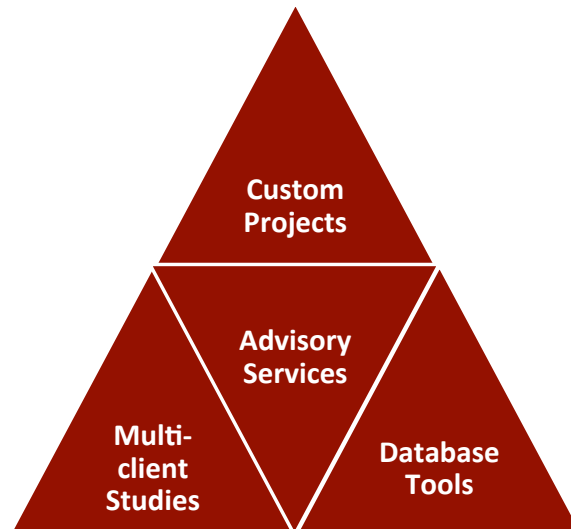
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How InfoTrends Works with Clients



InfoTrends Products and Services



Some of Our Clients

Enterprises

Government

Service Providers

Channel

Financial Services

Technology

Vendors



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Key Trends

- **Office page volumes have peaked, but still a very large market**
 - Significant differences by region and local markets
- **Territory growth opportunities require highly focused plan**
 - Industries, company size segments
 - Solutions and services
- **Diversification can provide additional growth potential**
 - Many opportunities, but need a plan!

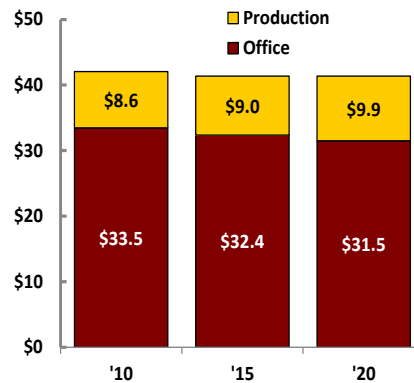
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BTA 90 Years
1926-2016

U.S. Office and Production Revenue – Equipment, Supplies & Service (\$B)

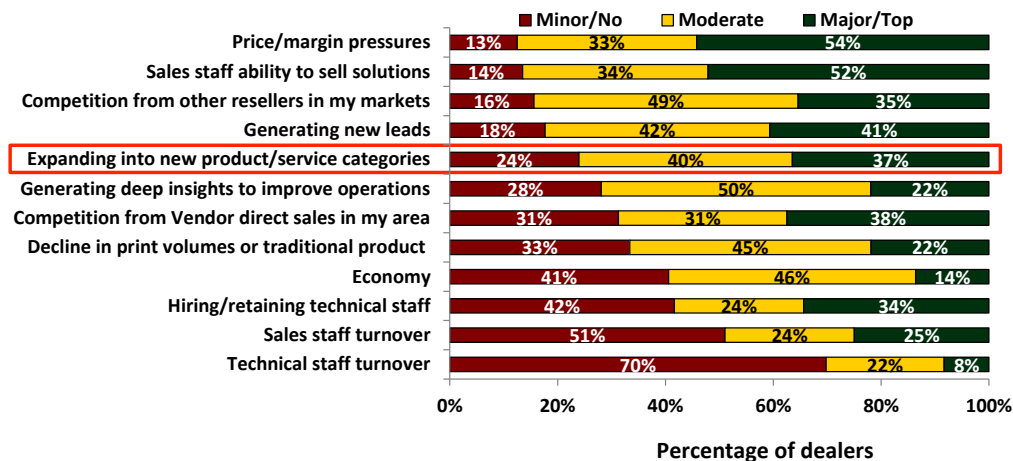
- **Office Equipment \$32.4 billion in 2015**
 - value of office equipment, supplies, and service (break/fix)
 - declining about \$1 billion in next five years
- **Production Equipment \$9.0 billion in 2015**
 - product equipment, supplies, and service (break/fix) sold to commercial printers and in-plant operations
 - This market will increase by about \$900 over the next five years.
- **Office Equipment dealer channel accounted for ~\$12.3 billion of the office revenue and \$1.1 billion of the production revenue.**



The Pressure Is On...!

- **Continued slight decline for office equipment and page volume**
- **Price and margin pressures continue**
- **Dealer M&A activity continues**
- **Most dealers are exposed to threats from Cloud/IT Services/ Mobility vs. positioned to take advantage**
- **Services & Software becomes the new Service & Supplies**

How challenging are the following items for growing your business.



Source: InfoTrends State of the Channel Report

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1926-2016

Obstacles to Product Expansion

- Existing/new competition
- Financial resources
- Sales expertise
- Customer base
- Management experience and knowledge
 - Pricing, marketing, business metrics, sales

Source: InfoTrends State of the Channel Report

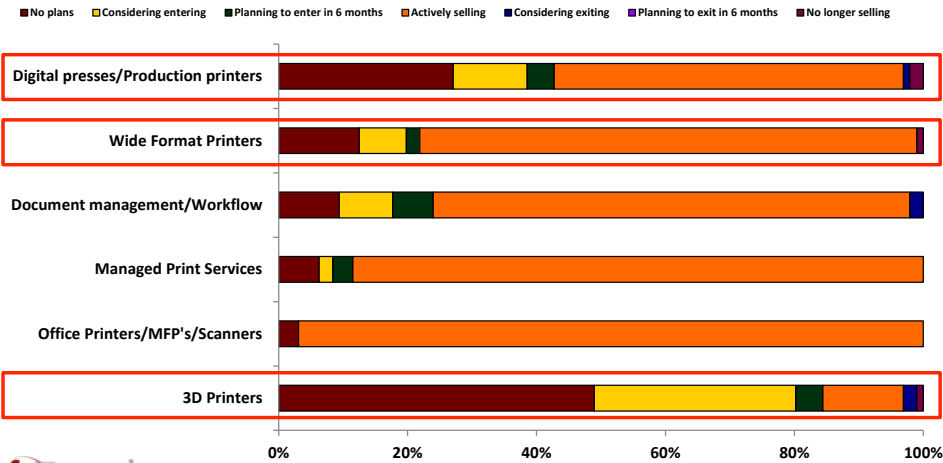
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Company's Plan or Activity to Sell Technology/Services

Q26: For each area, please indicate your company's plan or activity to sell technology or services.



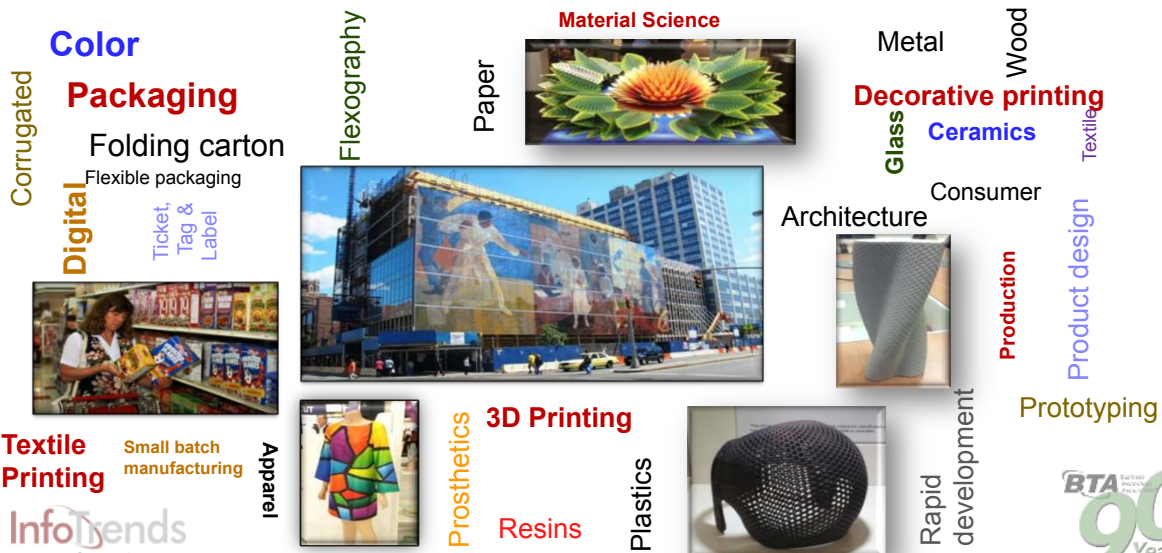
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N = 96 All respondents

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BTA
90
Years
1926-2016

Growth in Digitally Enabled Opportunities

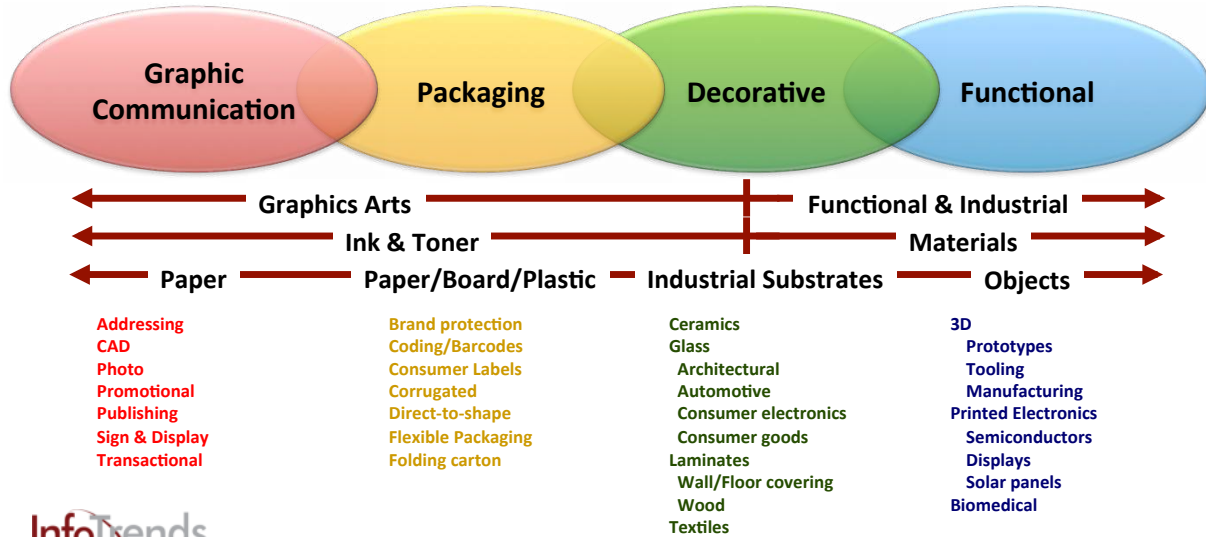


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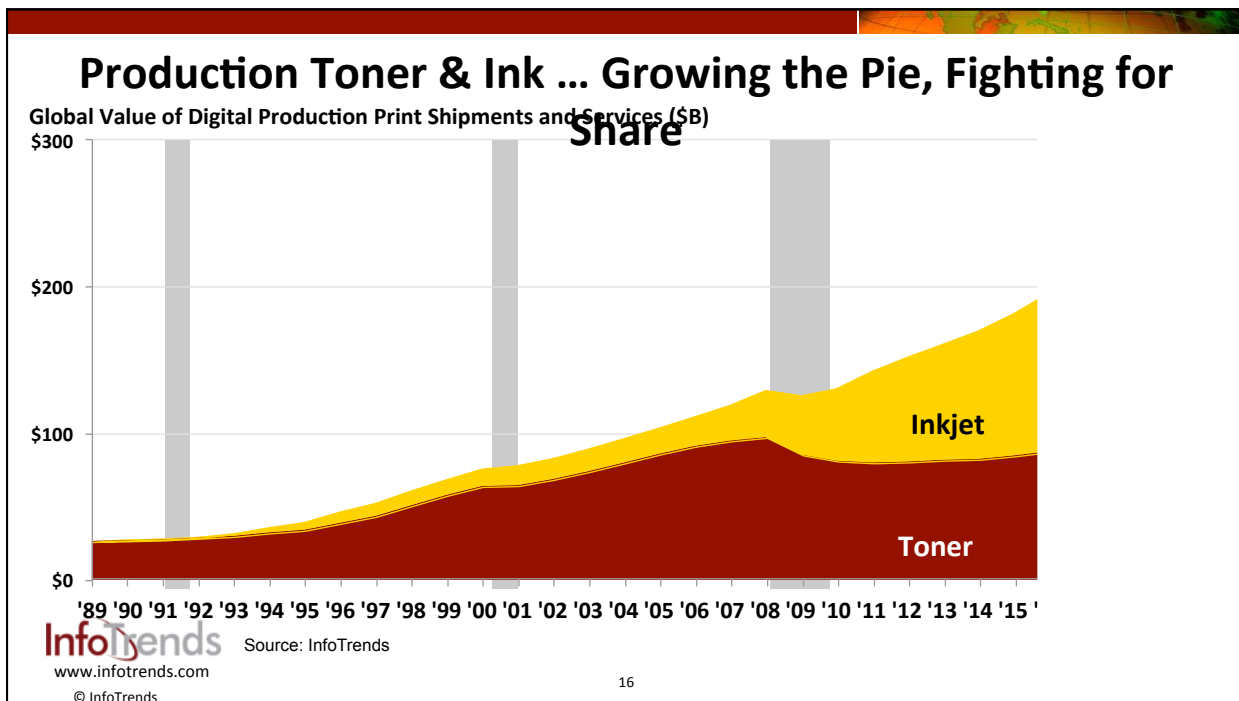
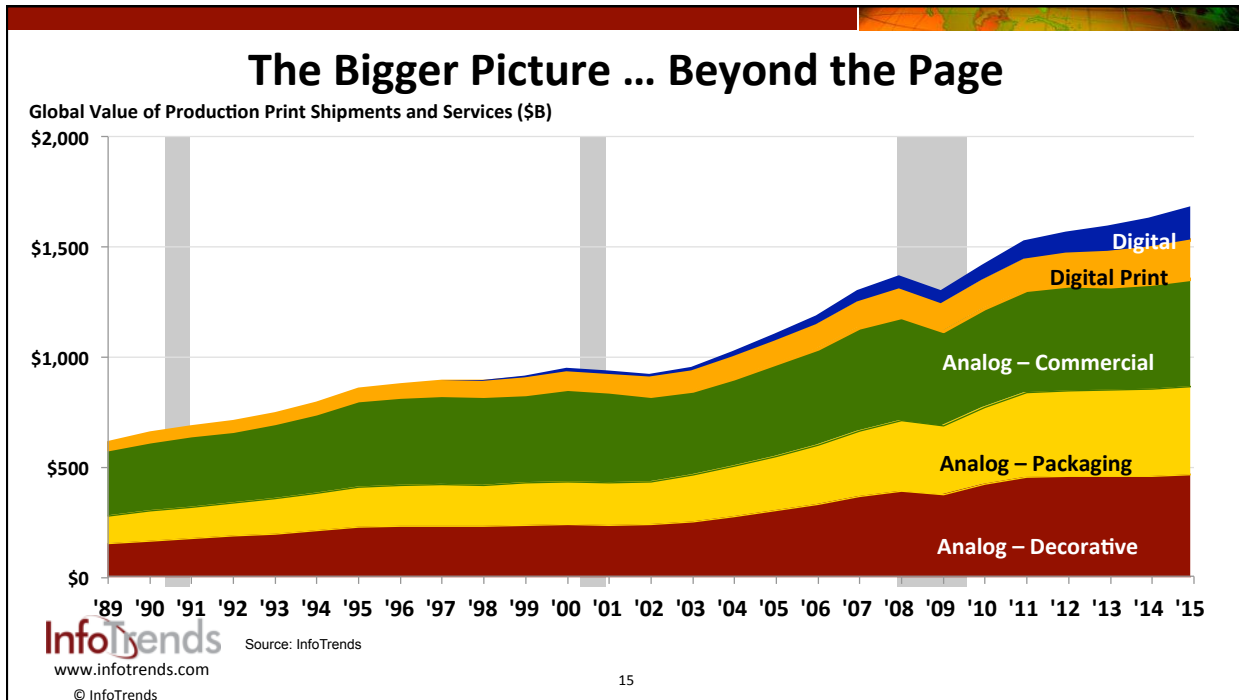
BTA
90
Years
1926-2016

Going Digital – Diverse Markets



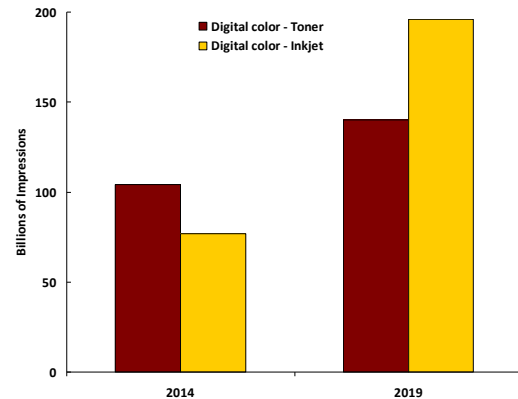
Mass Customization – Drives Adoption of Digital Printing



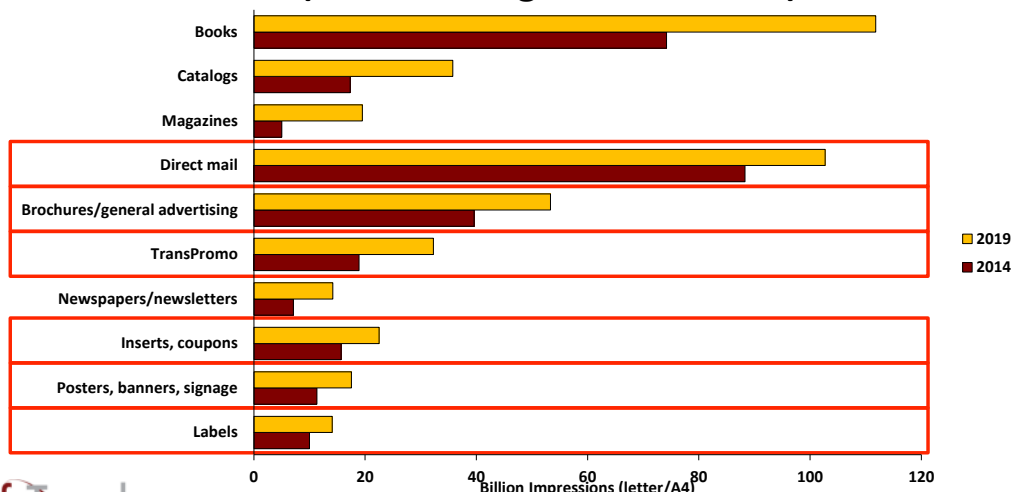


U.S. Digital Production Color Print Volume by Technology

- U.S. digital production color volumes totaled about 180 billion impressions in 2014
- InfoTrends expects them to reach 336 billion by 2019
 - Production color inkjet accounted for 43% of the total production digital color volume in 2014 and will account for 58% in 2019
 - This occurs despite the fact that digital color toner is also growing at a 6% rate



10 Fastest Growing Production Digital Print Applications (Absolute Page Growth, U.S.)

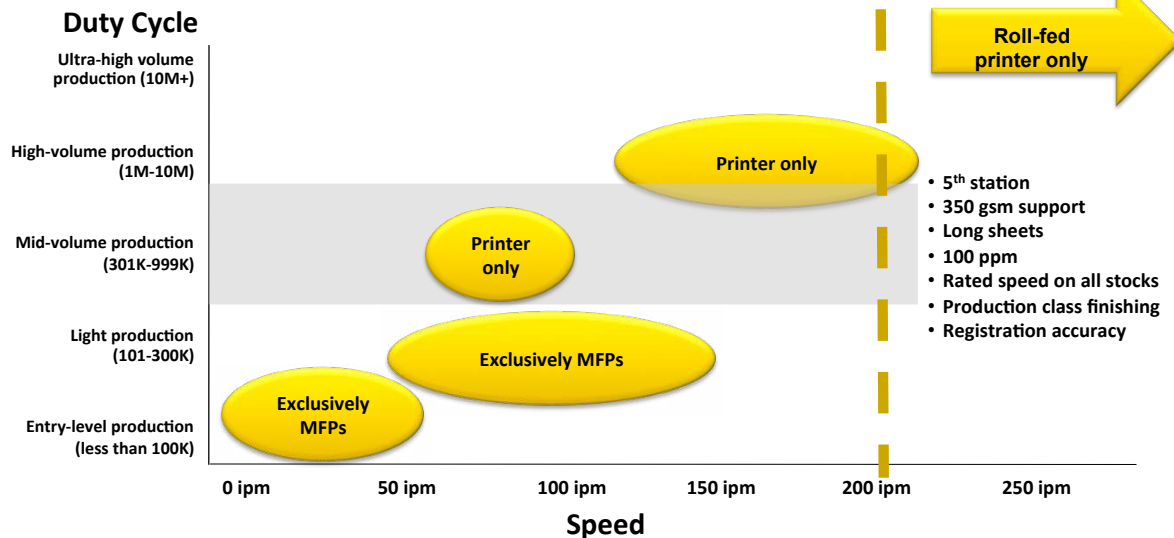


Digital Print Facilitates Compelling Business Transformations

- **Printer = a virtual document warehouse**
 - On demand printing
 - Just-in-time manufacturing
- **Process automation**
 - Web-to-print fulfillment
- **Mass customization**
 - 1:1 and segmented communications
 - Mail optimization
- **Cost effective use of static or variable color**
 - Including forms replacement



The Production Color Digital Market



Note: MFP stands for multi-function peripheral, in other words, a copier/printer

Example of a Broad Product Landscape 101-300K AMPV



Konica Minolta
bizhub PRESS C70hc



Ricoh Pro C751EX



Xerox Versant 80 Basic

Vendor	Model
Canon	imagePRESS C60, imageRUNNER Advance C9270/C9280 Pro
Heidelberg	LinoPrint C751, CE
Konica Minolta	bizhub PRESS C1060/1070, C70/C71hc
	bizhub PRO C754
Ricoh	Aficio MP C6502, C8002
	Pro C5100s/C5110s, C550EX, C651EX
	Pro C751/C751EX
Sharp	MX-M6500N, MX-7040N, MX-7500N
Xerox	700 Digital Press, C60/C70, C75
	Color 550, 560, 570
	Versant 80 Basic

Typical prices may range from under \$100's to mid \$200's

Wide Format Printing



How Can I Grow? Wide Format Printing ...

New Applications



New Services



M & A

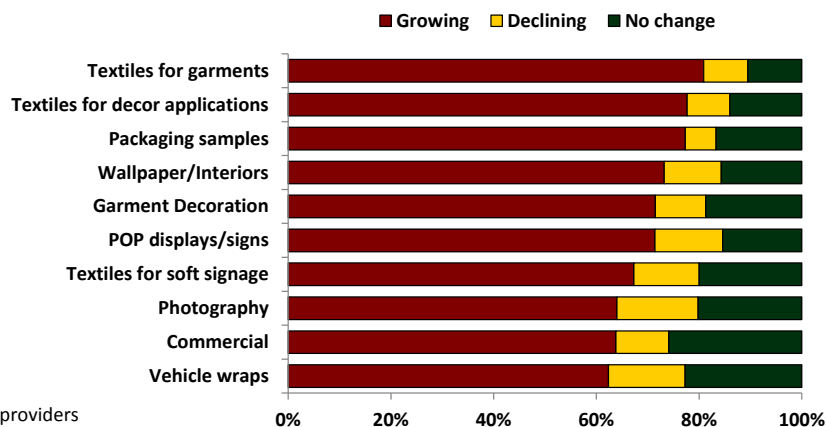


Innovation



Top 10 Growing Applications

Q25: Which of these applications are growing and which are declining as a percentage of your wide format printing business?

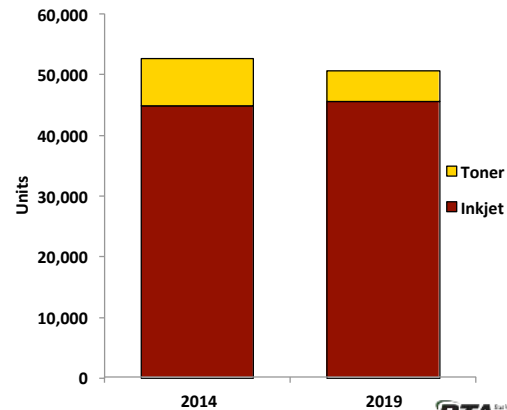


Base: Print service providers

Source: FESPA 2015 Census by InfoTrends

2014-2019 North America Wide Format Print – Unit Placements Technical & Creative Units Adding to

- Technical (CAD / AEC) is a massive market with over 230,000 units installed
- Technical (CAD) market continued its transition to inkjet color representing 88% of the total
- Toner devices continue to decline
- New entry level color units and single pass devices are changing the market landscape



Wide Format Technical & AEC Graphics

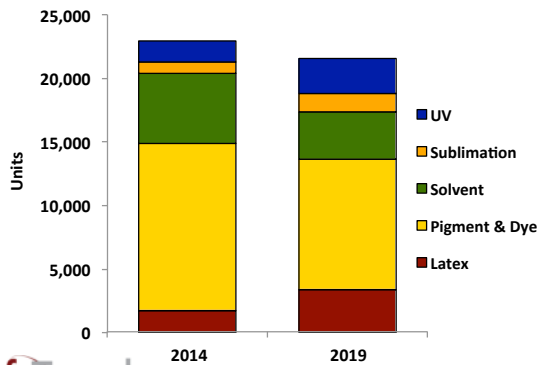
Technical/AEC Graphics are available as Toner, Inkjet B & W and Color Devices.

A new class of lower priced Inkjet Technical machines are moving into the market.

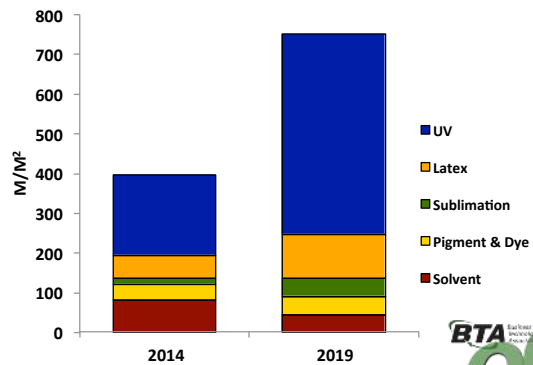


North America Wide Format Print – Production Graphics Trends

Unit Placements (Units)

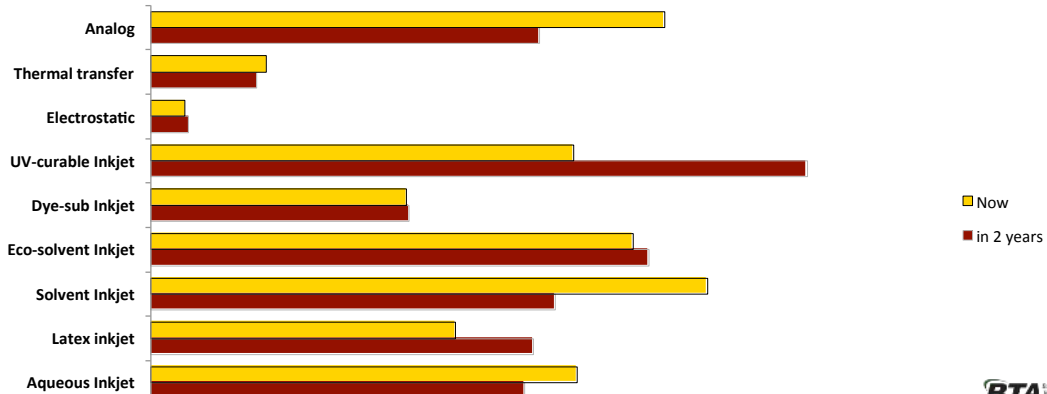


Print Volume (M/M2)



Respondents Expect WF Graphics Production Technology Shift, Out of Solvent, in to Latex & UV-curable

Thinking just about wide format graphics printing, approximately what percentage is produced using the following methods?



Aqueous Wide Format Graphics Printing



HP



Canon



EPSON



EPSON

Wide format Printer are available from below \$3,000 and up to \$30,000 for a 60" type of machine. More productive and expensive machines for a range of applications are available

Table Top UV

Large contributor to the <\$75K UV Forecast category comes from a small footprint.

- **Mimaki's the UJF-3042**
 - Priced at approximately \$27K US
- **Roland DG soon followed with the LEF 12**
 - LEF-12, allows you to print on 3D objects with a height of up to 100 mm (3.94").
 - Clear varnish enables to produce unusual and creative users gloss and matte finishes & textures on many high-grade materials.





3D Printing

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3D Printing

- **Additive layering of materials to create closely designed functional three-dimensional objects**
- **New additive deposition technologies and materials that are driving**
 - Capital investment inflow
 - OEM strategic transformation – value, costs, time
- **3D printing a means to**
 - Shorten time to market
 - Rapid prototyping
 - Small batch production
 - Process efficiencies



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US\$ in millions, unless otherwise stated



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- Healthcare (Dental)
- Aerospace
- Automotive
- Engineering
- Personal use
- Education



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graph LR
    AM[additive manufacturing] --> DP[Deposition Processes]
    AM --> SM[Sintering Method]
    AM --> Tech[Technology]
    AM --> Mat[Material]
    
    DP --> JT[Jetting Type]
    DP --> LT[Laser Type]
    DP --> LNT[Laminated Type]
    
    JT --> TB[Thermal Base]
    JT --> GB[Glue Base]
    
    LT --> LS[Liquid solidify]
    LT --> LSR[Laser sintering]
    
    LNT --> GL[Glue Laminate]
    
    TB --> FDM[FDM/FFF]
    TB --> JW[Jet Wax]
    
    GB --> 3DP[3DP/PP]
    
    LS --> PJ[PolyJet]
    LS --> SLA[SLA]
    
    LSR --> SLS[SLS / DMLS]
    
    GL --> LOM[LOM]
    
    FDM --> TP[Thermoplastic]
    JW --> W[Wax]
    3DP --> PG[Powder & Glue]
    PJ --> LPP[Liquid Photopolymer]
    SLA --> LPP
    SLS --> P[Powder]
    LOM --> PFI[Paper / Film]
  
```

Ref: CustomPartNet, WU, AIO Robotics

Ref: CustomPartNet, WU, AIO Robotics

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3D Printing Top Tier Players

- 3D Landscape is dominated by several key players
- Traditional office and production printing brands are entering the 3D market – Canon, HP, Mimaki, Ricoh, Roland

YTD 2015 Rank	Company	Units	Q1-Q3'15 YTD Global Share
1	Stratasys	4,308	49%
2	3D Systems	1,938	22%
3	envisionTEC	866	10%
4	EOS	326	4%
5	mCor	265	3%

Source 3ders.com Q1-3 2015 Unit Placements

Samples of 3D Products

Engineering



Dimensional Display



Medical



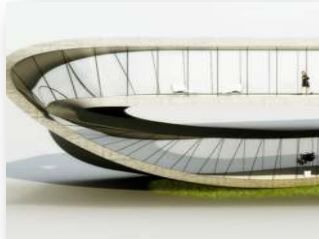
Samples of 3D Products (2)

Footwear Manufacturing

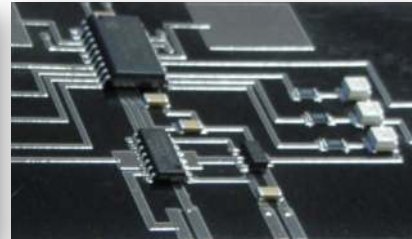


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Architecture



Electronics



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3D Personal Printing!



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We are Still Learning



Getting Started...

- **Realistic business assumptions**
- **Start small with current client adjacencies**
- **Staffing with subject matter experts**
- **Balanced portfolio**
 - Production print – Mid range systems bundled with accessories and production software
 - Wide Format - Tabletop and entry level production opportunities
 - 3D Printing – Keep it simple and focused before venturing into complex engineering or manufacturing

Key Ingredients for Success

- Trained sales and technical support staff are indispensable
- Consultative selling strategy
- Upfront “below the line” investment in growth
- Keen understanding client diversity
- Balanced mix of solutions, supplies and support



Ron.Gilboa@infotrends.com