

CREATING FUTURE PRINT THROUGH TECHNOLOGY AND INNOVATION



Impact of Electronic Technologies on Print

Print Business Outlook Conference 2016
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Mumbai, India



About the Researcher/Author

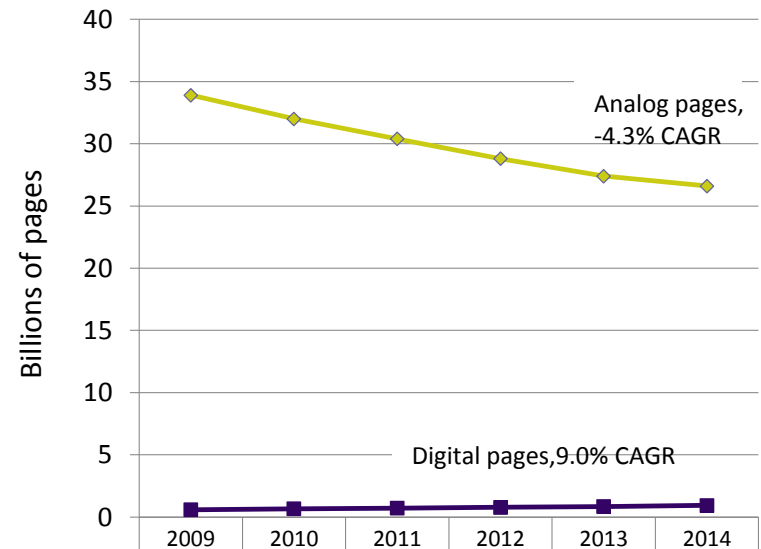
- Founded 1992
- 15+ years of market research and product development in non-consumer/general office printing markets
- Strong emphasis on qualitative, deep research on future trends
- Noted for independence of thought and analysis



Megatrends in Digital Printing Applications: Digital Print will not Replace Offset

- A Tipping Point from analog to digital production page volumes (where it exists) is decades away for the production print market overall
 - Few applications will have tipped by 2014, some have strong momentum to tip by 2020, but the tipping point for most applications is unforeseeable
- Analog production page volume is shrinking independently of digital production print volume growth
- Is it electronic technologies that cause document print to decline?

Trillions of letter-size, simplex production document pages, WW (Excluding Packaging)



◆ Analog Pages	33.9	32.0	30.4	28.8	27.4	26.6
■ Digital Pages	0.6	0.7	0.7	0.8	0.8	0.9

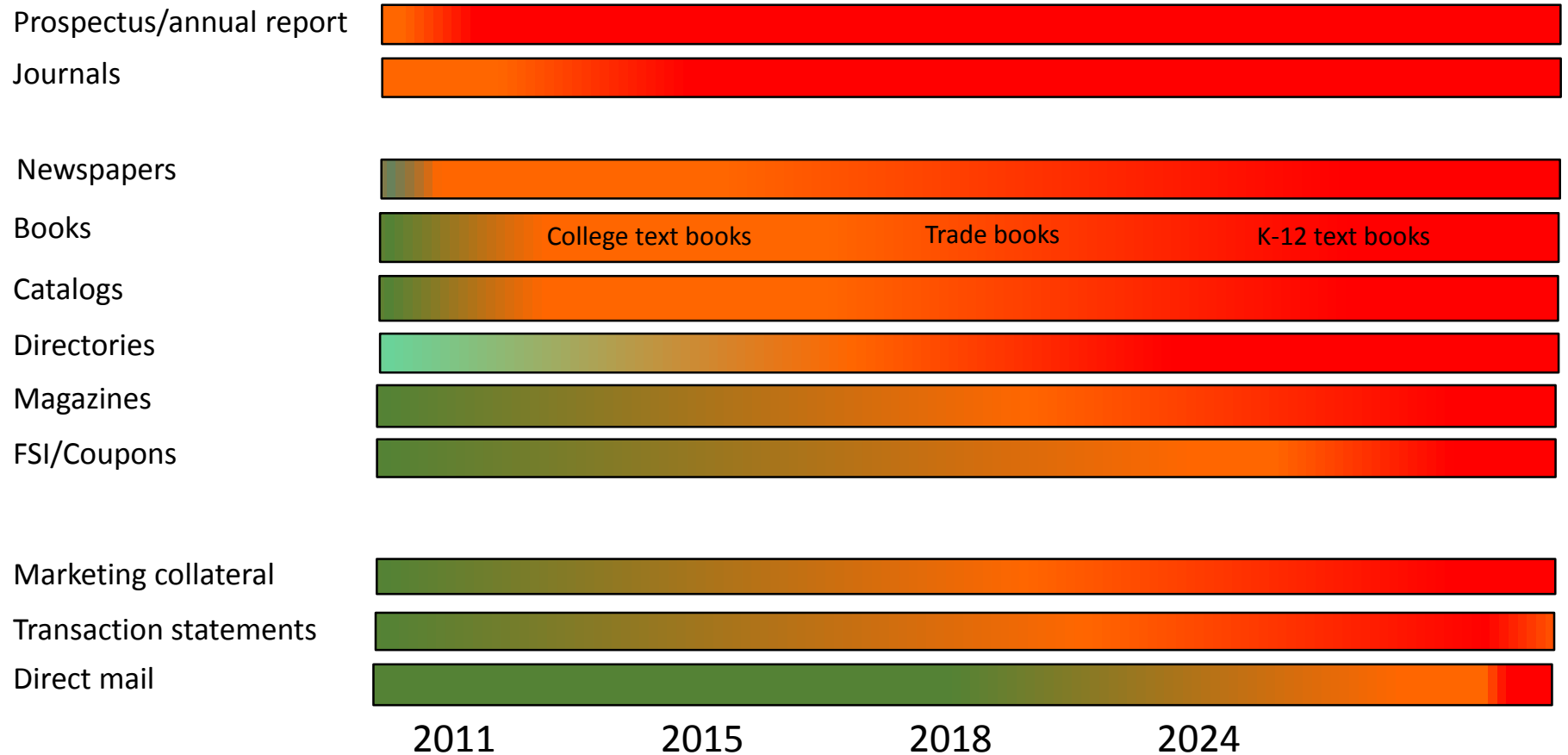


Study Methodology:

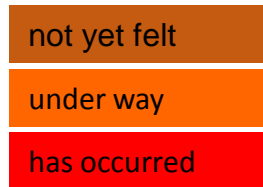
- Primary and Secondary Research
- 55 expert interviews (5/application in US)
 - Books
 - Catalogs
 - Directories
 - Freestanding Inserts/Coupons
 - Direct Mail
 - Journals
 - Magazines
 - Marketing collateral
 - Newspapers
 - Prospectuses/annual reports
 - Transaction statements
- 5+ electronic eco-system player interviews
 - Leading Silicon Valley thinkers
- 750 US respondent consumer opinion e-mail survey
- Published in 2012, but remains very valid today



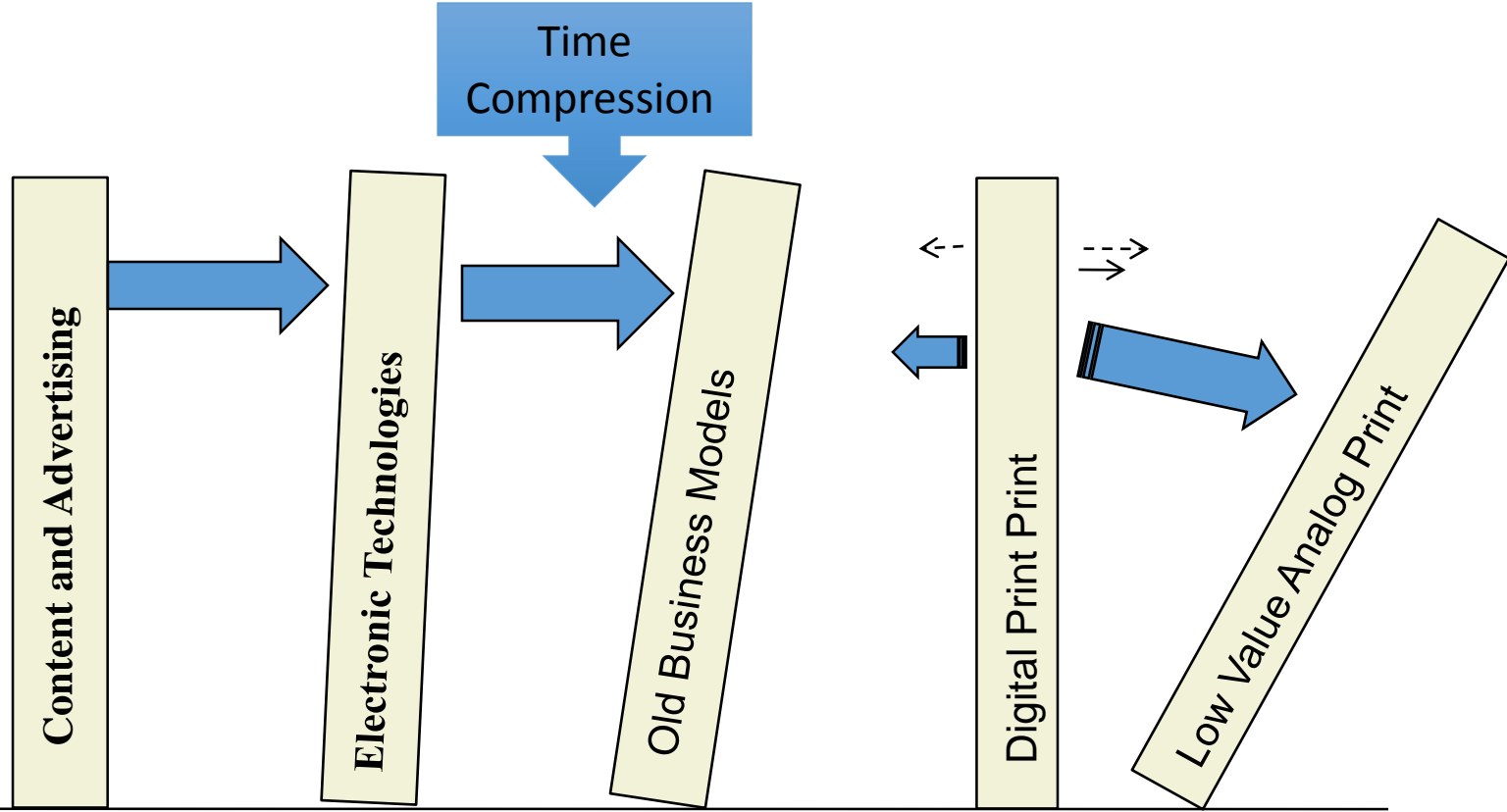
Impact of Electronic Technologies on Print Volumes: Comparative Summary



Legend: Significant impact

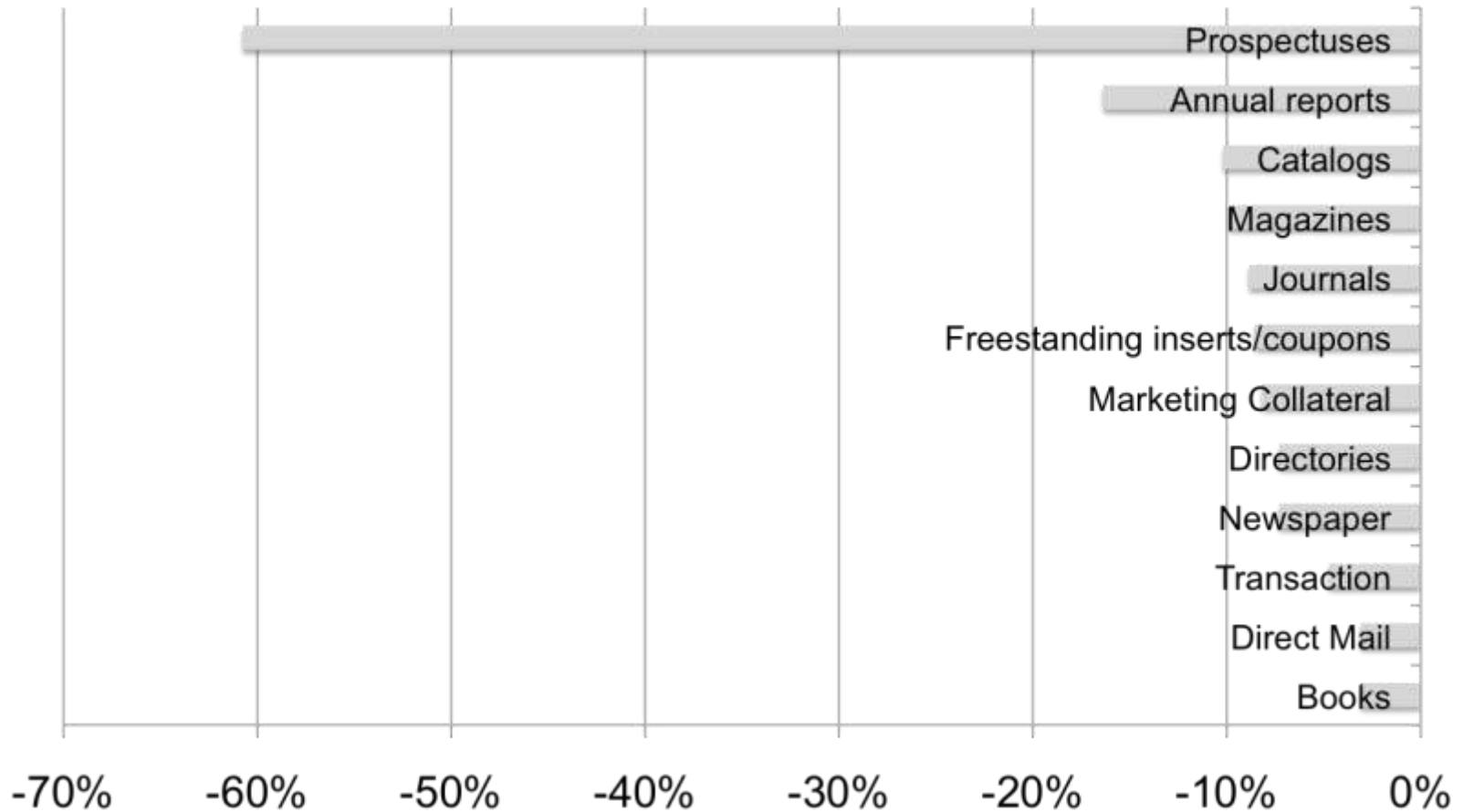


Content and advertising pressure



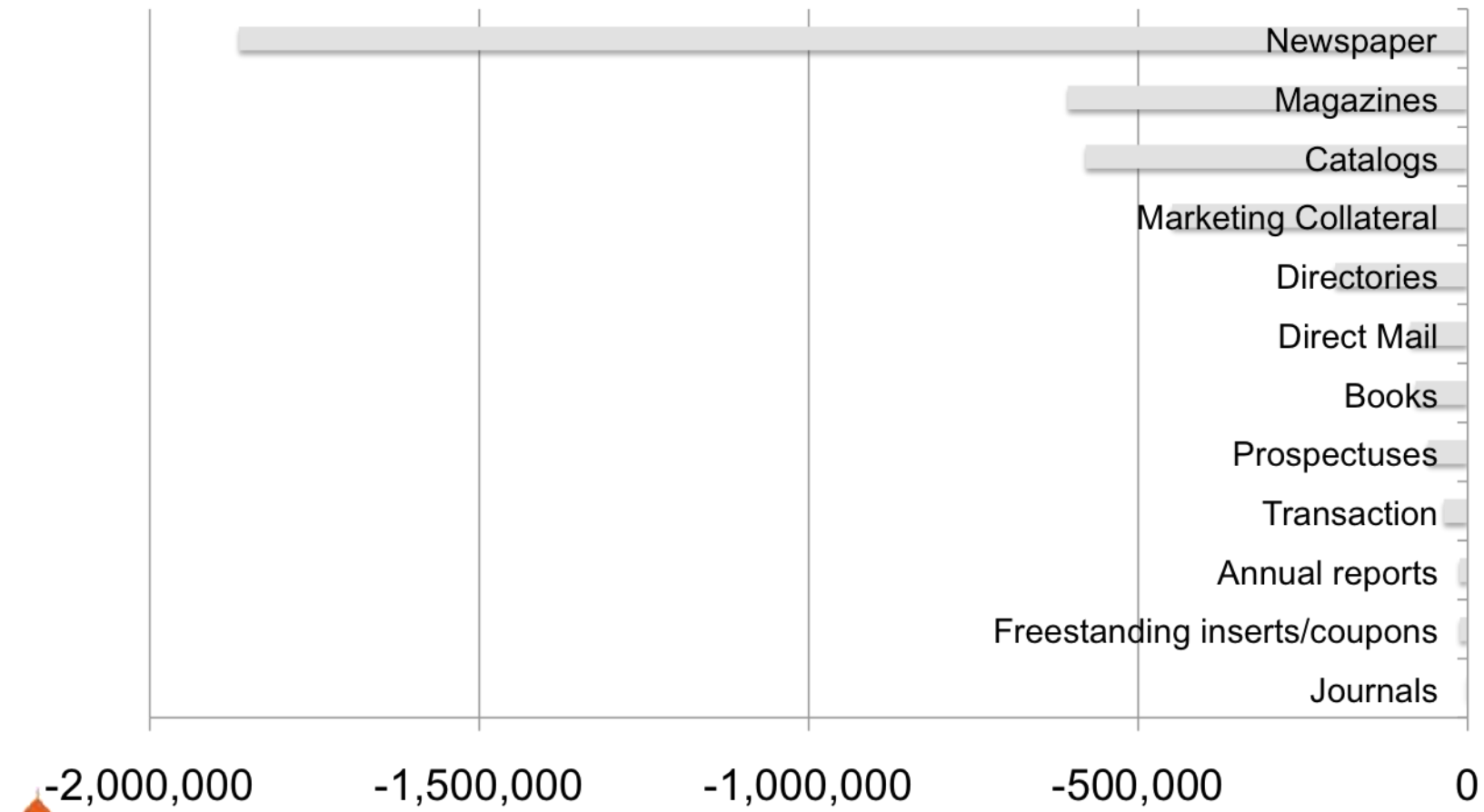
Electronic Technology Impact by Application: Relative Feel of Pain 2009-2014

Percent page volume decline for respective application



Actual Impact on NPES/PRIMIR Members

Page Volume Decline cumulative 2009-2014



Implication for India

	India	US
Households with Landline telephone	2%	41%
Mobile phones/inhabitant	76/100	100/100
1 st class letter/inhabitant	5/year	540/year
Direct mail pieces/inhabitant	1/year	254/year

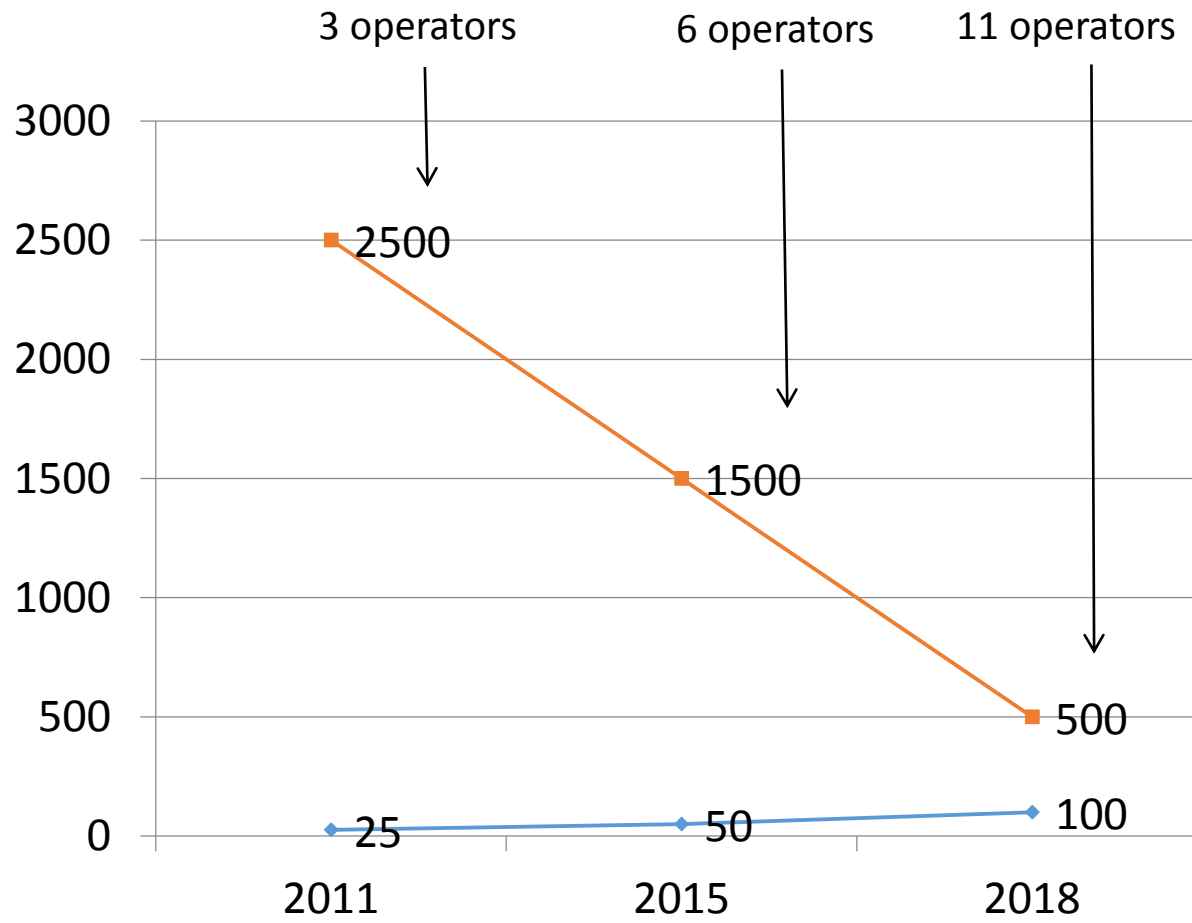
India leapfrogged in communication direct to mobile electronics. Legacy print applications under less threat in India

- But....in print watch:
 - The “efficiency squeeze”
 - Demand for consistent, higher output standards
 - Labor



The Efficiency Squeeze:

Staff Requirements Up as Print Volume Decreases



	2011	2015	2018
Set-up time/job/minutes	20	20	20
Jobs/Day	25	50	100
Total Set-up time (hours)	8	17	33
Hours/Staff for set-up	3	3	3
Staff needed	3	6	11
jobs/day	25	50	100
Ave. run length	2,500	1,500	500
total print volume	62,500	75,000	50,000

◆ Jobs/Day
 ■ Run length/Job



Implications for NPES/ PRIMIR Members

- Page volumes are in irrevocable decline, but offset print won't disappear
- There is an opportunity to grow value and profit with digital production printing; it will co-exist along side electronic technologies
- Rate of change will be different for every Print Application
- Opportunities:
 - Focus on high-value, lower-volume print applications
 - Re-direct into sustainable and growing print applications (packaging, decorative print)
 - High-value niches (printed electronics, etc.)



I believe...

The creation of printing technology is a complex, multi-disciplinary science. It is the continuing process of further extending the marriage of chemistry, physics, mechanical, and electrical engineering to address an ever greater range of applications that can be printed digitally that has me hooked on print.



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