

# **The Evolution of Document Automation or A Quick History of Paper, Print, and Personalization**

D. Gail Nickel-Kailing  
August 13, 2000



# A Brief History of Paper and Print

- From carvings on slabs of rock to paper, humans have been able to devise a form of communication that goes beyond speech.
- 200,000 BC - hand prints on cave walls
- 4,000 BC - cuneiform writing, Mesopotamia
- Papyrus - developed before 2,200 BC by the Egyptians



## History - continued

- In ancient Rome, commercial publishers issued editions of as many as 5000 copies works such as the epigrams of the Roman poet Martial - copied by literate slaves
- 105 AD - paper as we know it invented by Ts'ai Lun, a Chinese court official
- 200 AD - Earliest surviving printed texts



## History - continued

- 972 - Sacred Buddhist scriptures of more than 130,000 pages printed from wood blocks
- Late 900's - playing cards invented
- 1453 - Gutenberg invented the movable type printing press
- 17th Century - springs lifting the platen added - up to 300 impressions per hour



## History - continued

- End of 18th Century - offset lithography
- 1889-1900 - mass produced paper
- Modern Printing - multiple printing methods: lithography, letterpress, flexography, gravure and screen printing
- Since 1960 - photo-mechanical composition, cathode ray tubes, and laser technologies



# Changing Print Media

- Stone
- Metal
- Ceramics
- Wood
- Bark
- Leaves
- Cloth
- Papyrus
- Parchment
- Paper
- Other media - plastic, glass, etc.
- “Bits”



# A Document - What is it Really?

- What is a document?
  - Is it a letter?
  - Is it a book?
  - Is it a report?
  - Is it all of the above?
  - Is it none of the above?



# What do People do with Documents?

- Fill out and process forms
- Create and sign legal documents
- Edit and publish manuscripts
- Memos: send, receive, copy, file...
- Letters, bills, junk mail, magazines, Post-It notes...



# Document Processing ...

- Signing: approving, authorizing...
- Storing: indexing, filing, stacking, boxing...
- Retrieving: searching, skimming...
- Excerpting, annotating, summarizing...
- Presenting, performing, parodying...
- Deleting, shredding...



# The Document as Communication

- Computers changed things - documents became data
- Data becomes information becomes knowledge...
- Knowledge created, captured, consolidated and communicated



# The Document as Container

- With its freight, the document makes its way from writer to reader to be unpacked at the other end
- Viewing documents as mere information carriers overlooks the fact that documents help make it, structure it, and validate it.
- Reading the “background”



# The Document as Relationship

- Dynamic and organic
- Knowledge-generating conversation



# What is the “purpose” of a document?

- Influence
- Educate
- Entertain
- Inspire
- Empower
- Move to action



# Industry Enablers for Personalization

- Business Enablers
  - Revenue Growth/ROI
  - JIT/Time to Market
  - Customer Service
  - Target Marketing
  - CRM Programs



# Industry Enablers for Personalization

- Process Enablers
  - Computer/Network-based Operations
  - Performance Measurement
  - Data Gathering/Development Analysis
  - Systems Integration
  - Document Management



# Industry Enablers for Personalization

- Technology Enablers
  - Data Mining Software
  - Automated Composition Systems
  - High Speed RIPs
  - Faster Print Engines
  - The Internet

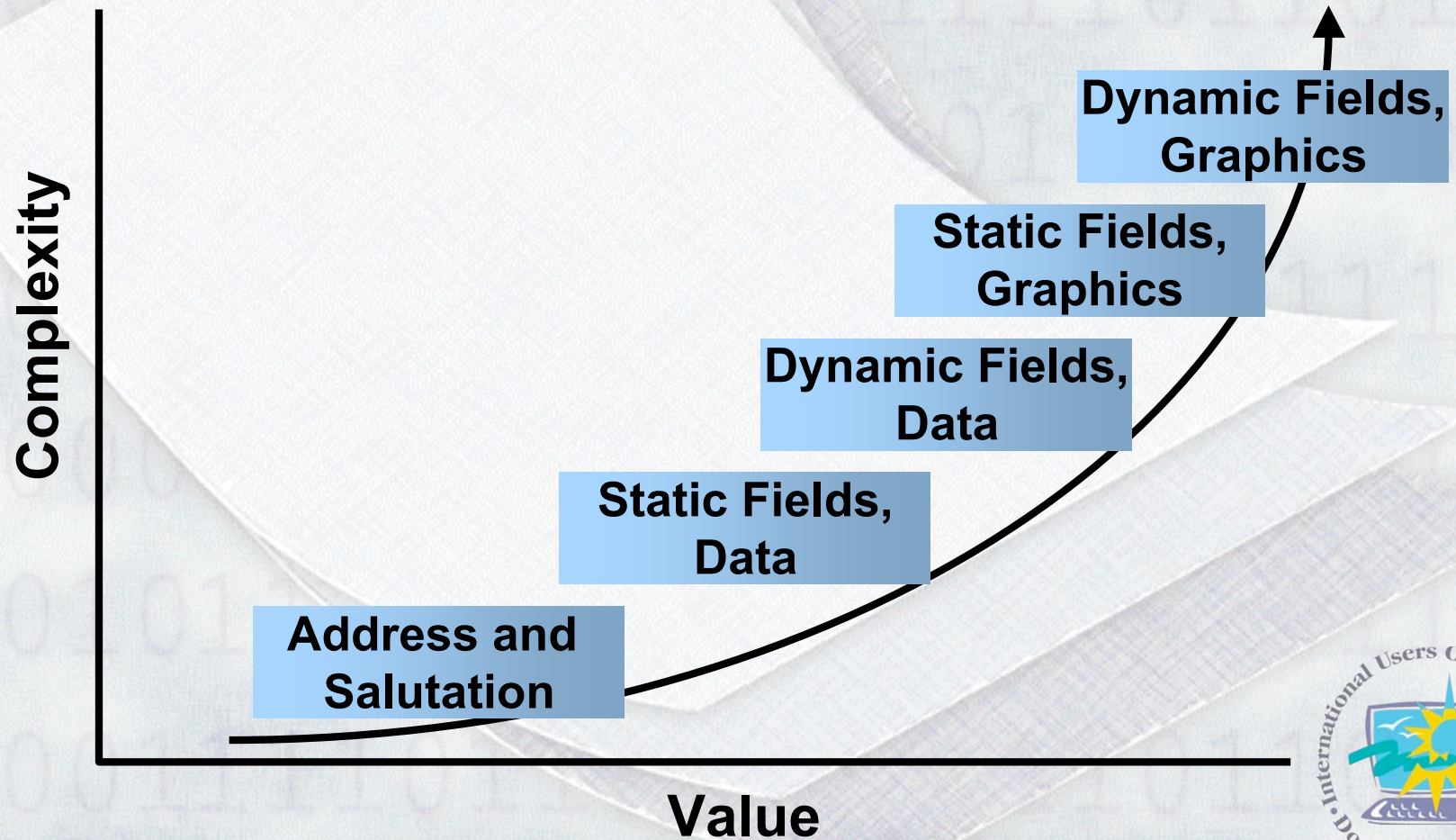


# Variable Data Publishing...

- What does that really mean?
- Versionalization - adding a salesman's name to the back of a brochure
- Personalization - inserting name and address fields in a document
- Customization - variable text and graphics driven by conditional logic



# Complexity of Personalization



# Value of a Personalization/Customization Program

- 48% - Increase in Repeat Orders/Customer Retention
- 34% - Improvement in Response Time
- 36% - Improvement in Response Rate
- 32% - Increase in Overall Revenue/Profit
- 25% - Increase in Order Size/Value



Source: Personalized On-Demand Printing and Publishing: Targeting the Right Opportunity, (C) 1997, CAP Ventures, Inc.

# The Internet - What does it Mean?

- What is it?
  - Marketing medium
  - Sales channel
  - Ubiquitous wide-area network
  - Computer platform
- An intelligent network of dumb documents or a network of intelligent documents?

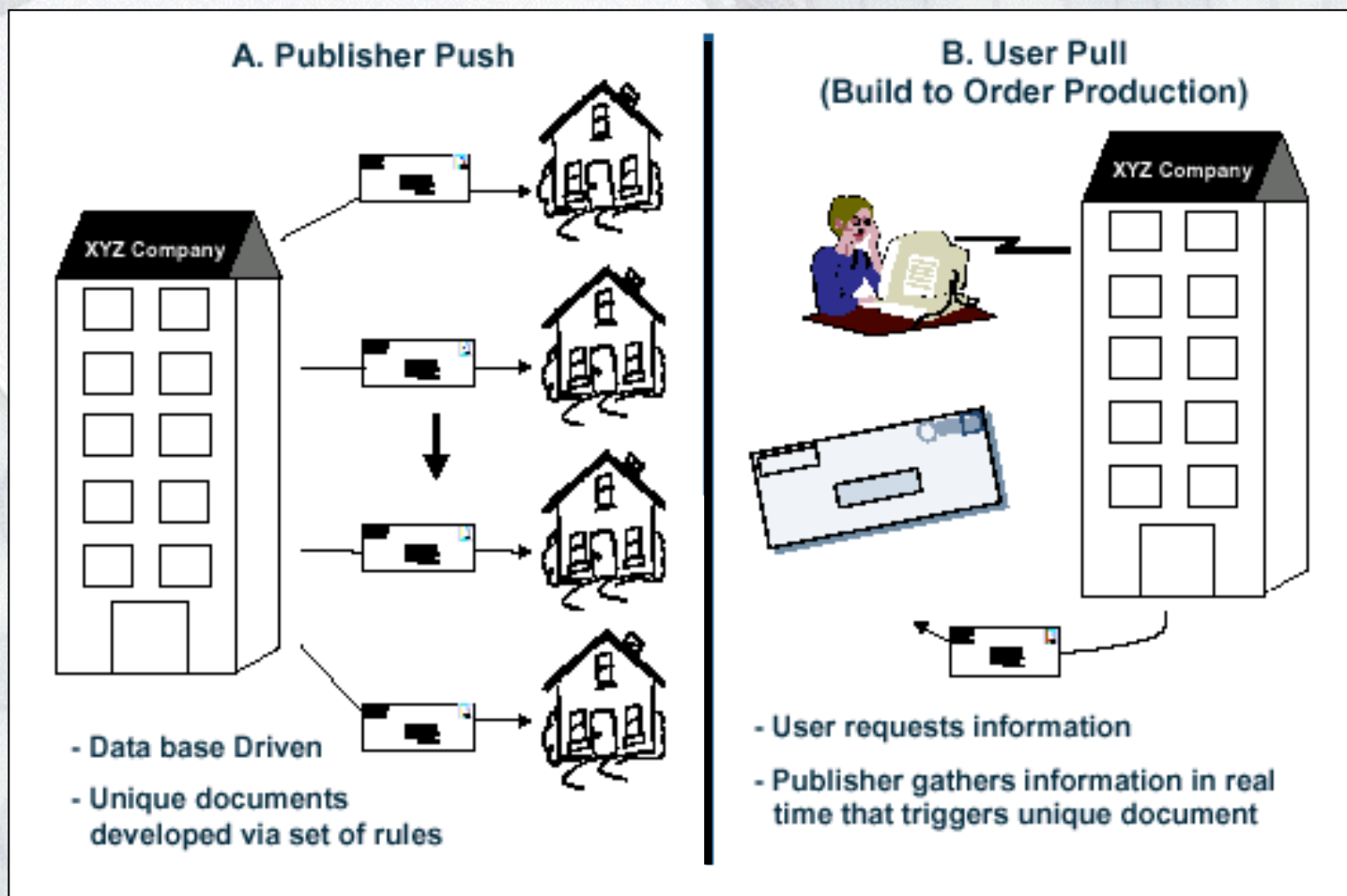


# The Emergence of “Real Time” Documents

- Document composition on the fly
- Instant information delivery
- “Pull” vs. “Push” documents
  - Self-service
  - ... the customer becomes the “author”



# “Push” vs. “Pull” Documents



# Fixity vs. Fluidity - Immutable Mobiles

- One quality of documents is their mobility – the ability to circulate.
- The other is their immutability – we expect the document to arrive unchanged, so that what reaches you is the same as what left the writer



# To Print or Not to Print ...

- Does it mean that something actually gets printed?
  - “print and distribute”
  - “distribute and print”
  - “distribute and view”
- Driven by many variables, including mutability...



# Delivering a Personalized Message

## Promotional

Brochures  
Catalogs  
Credit Card Solicitations  
Coupons  
Direct Mail Programs  
Sell Sheets

## Published

Technical Manuals  
Newsletters  
Financial Prospectuses  
Directories  
User Guides  
Service Documentation  
Support Documentation

## Transaction

Invoices  
Statements  
Contracts  
Loans  
Sales Orders  
Forms



# Most Effective Fulfillment Method for Personalized Documents

- 51% - Printed material that is mailed to the customer/client
- 47% - A combination of material on the web and printed material sent to the customer/client
- 3% - Personalized materials over the web

(C) 2000 CAP Ventures, Inc.

N=162



# Balance Between Print and Web Presentment

- 51% - Print is primary and the Web is secondary
- 30% - The Web and print are equal
- 10% - The Web is not important at all
- 8% - The Web is primary and print is secondary
- 1% - The Web is all important

N=180

(C) 2000 CAP Ventures, Inc.



# **“One-to-one” – Is there such a thing?**

- Dynamic documents on demand
- Strengthening loyalty
- Protecting privacy



**Change is Good ...**



# Changing Culture

- **Changing culture**
  - *Increasing amount of content*
  - *Shrinking world*
  - *Shorter attention spans*
  - *Quicker delivery*



# Changing Technology

- Unified communication
  - Device and media independent...
  - Personalized AND automated...
  - Wireless – phone, browser, PDA?
- I want it all and I want it my way and I want it now...!



# Where are we now? The Paperless Office ...

- **In 1975 Business Week predicted the paperless office was fast approaching!**
- **There will be a paperless office when there are no more offices ... paper!**
- **Remember however - we are in the business of words and sentences and pictures and ideas ... paper is just one vehicle!**



# The Future of the document ...

- Separate the content from the container
- From analog to digital and back again
  - Business 2.0
  - Digimarc
  - E-Ink



# Delivering it all

- End game...information value chain
  - Consistent
  - Seamless
  - Immediate
  - Personal
- Extended enterprise
  - Unified, real-time, 2-way
    - Right content, right form, right time, right place...



**The Future is Now ... You Have the  
Tools!**

