SPEAKING TODAY
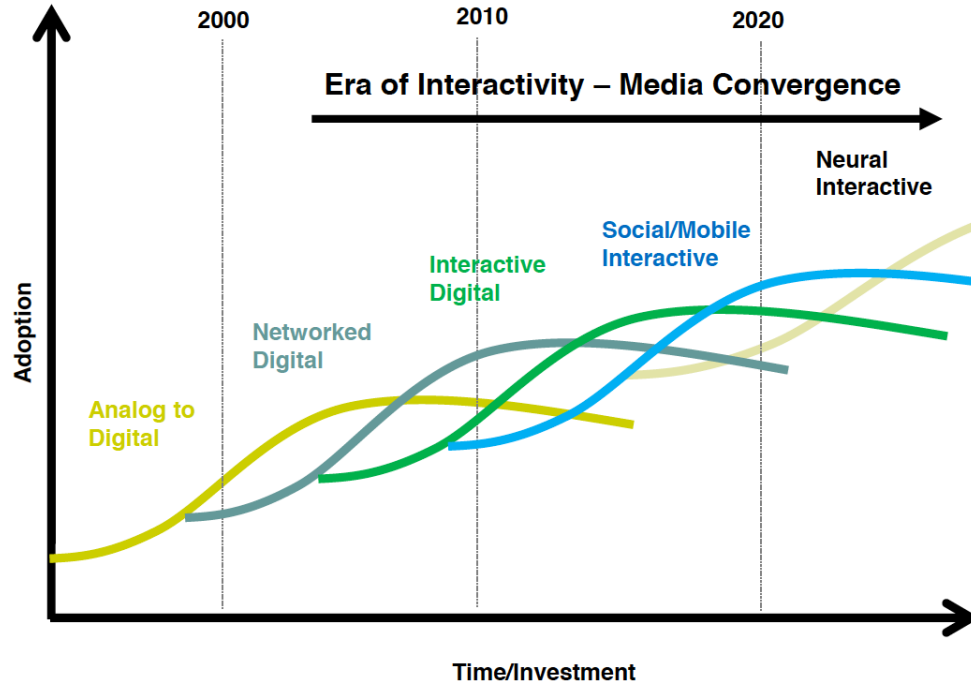
David L. Zwang
Zwang & Company

Inkjet opportunities are here, but…..

- Procurement requirements are changing

- New client engagement models

- Maximize value from equipment

- Labor challenges abound

- Streamline and automate production and
  business systems

Evolution of Workflows

Source: Adapted from NPES Workflow Dynamics Study, Mills Davis, 1996
Source: PRIMIR 2011 study "Transformative Workflow Strategies for Print Applications" by InfoTrends.

Where do you fit?

Commercial Printers	• Direct Mail, Brochures, Forms, Security, Sign and Display
Publishing Printers	• Newspapers, Magazines, Catalogs, Books
Packaging Printers	• Labels, Cartons, Corrugated, Flexible
Functional Printers	• Industrial, Decorative, Ceramics, Textile, Wall Coverings, Printed Electronics, 3D
Content Marketing	• Omni Channel, etc.

ZWANG &
COMPANY

inkjet SUMMIT

What do you offer?

Printed Products

Predefined

Constrained design

Printing Services

Ad hoc/Custom design

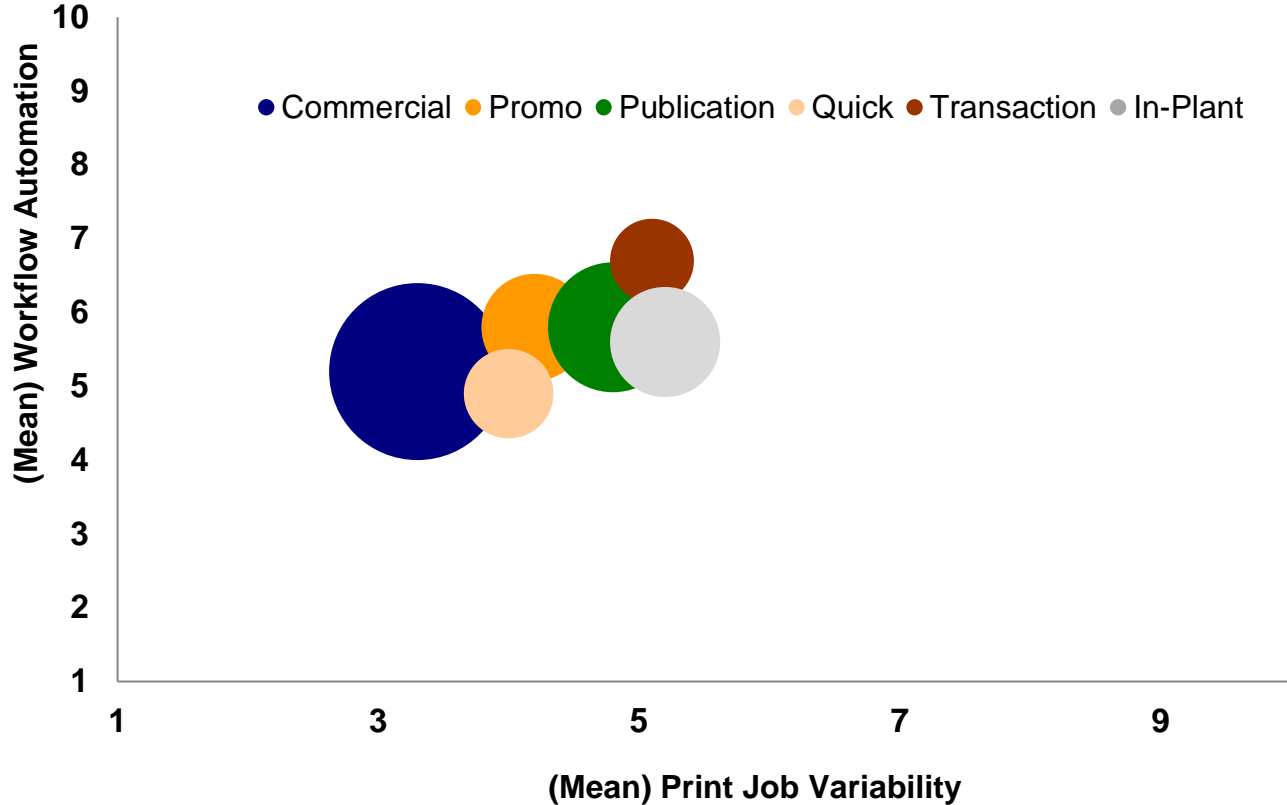Variable production techniques

inkjet
SUMMIT

The State of Automation Today

Left pie chart:
- Fully automated after job onboarding 2%
- All manual processes 18%
- Mostly manual processes in more than one department, but not all 25%
- Some automation, but manual processes in many departments 43%
- Mostly automated in more than one department, but not all 13%
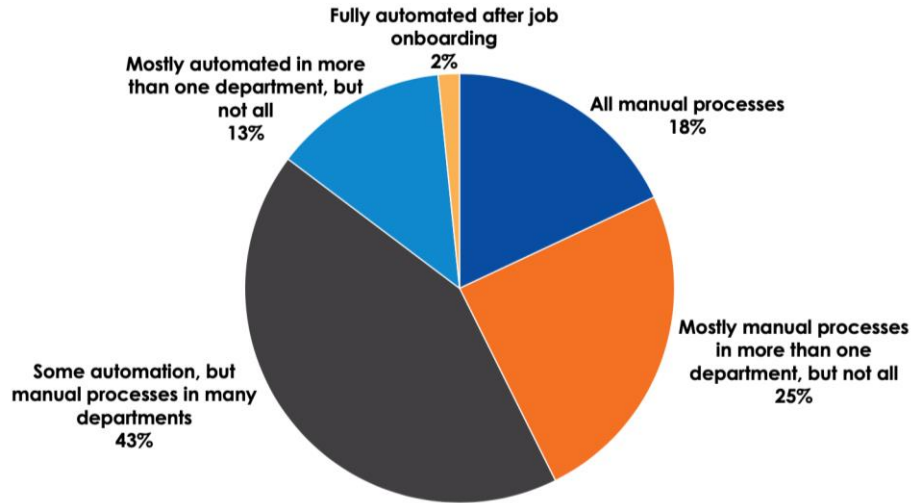
N = 122 respondents
Source: *NA Software Investment Outlook, KPI-InfoTrends 2019*

Right pie chart:
- Fully automated 1%
- Completely manual 20%
- Mostly manual 19%
- Some automation 47%
- Mostly automated 13%
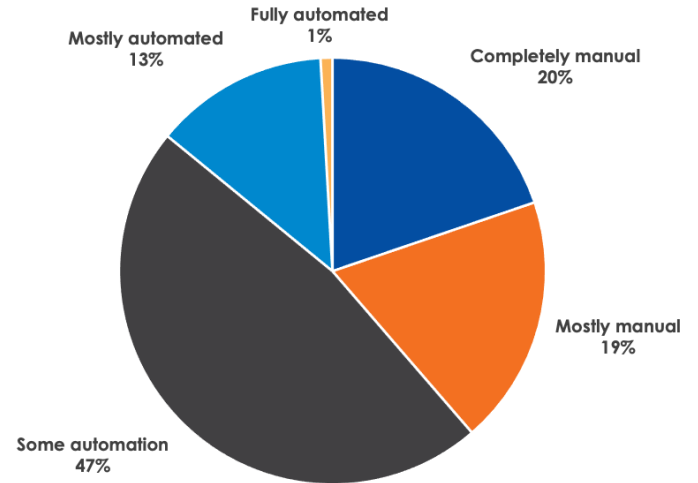
N = 106 respondents
Source: NA Software Investment Outlook 2021

ZWANG &
COMPANY

inkjet
SUMMIT

Automation prospects vary by application

Bubble chart titled "Automation prospects vary by application" plotting (Mean) Workflow Automation (y-axis, 1–10) against (Mean) Print Job Variability (x-axis, 1–9). Legend: Commercial, Promo, Publication, Quick, Transaction, In-Plant.

ZWANG & COMPANY

inkjet SUMMIT

Transformative Workflow Reference Model
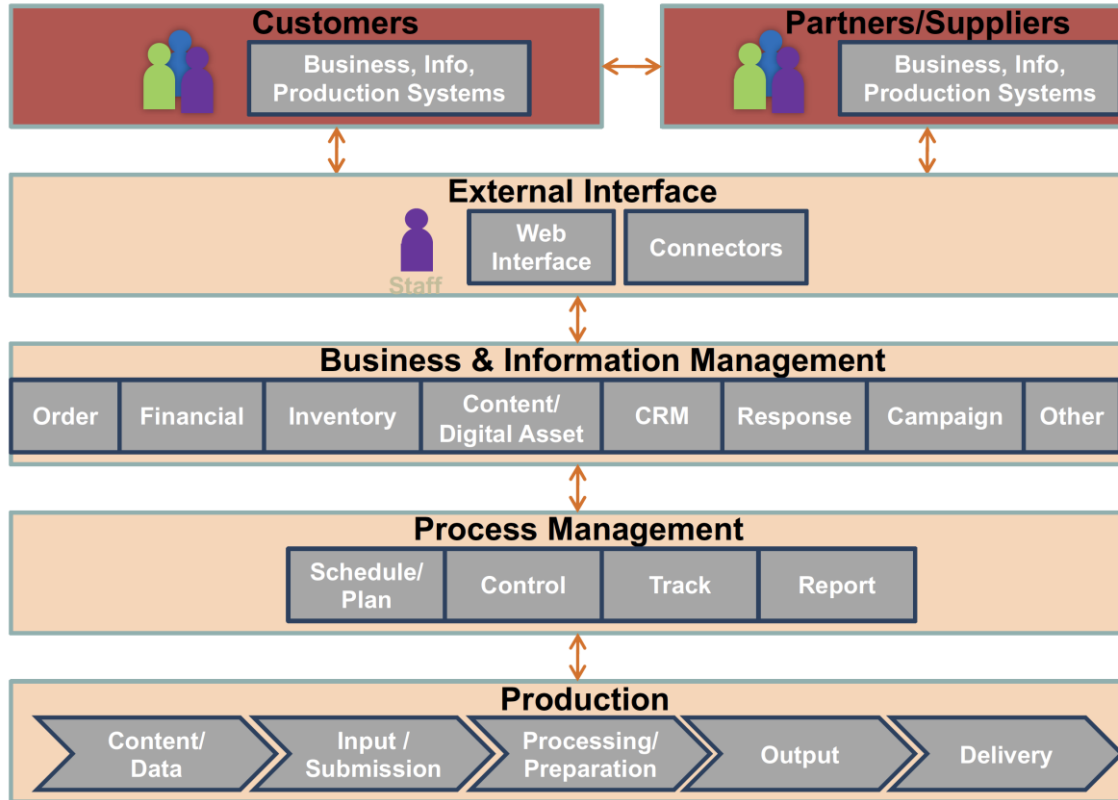
Source: PRIMIR 2011 study "Transformative Workflow Strategies for Print Applications"

Capturing, Segregating and Managing Data

PRODUCTION DATA FILES

PDF

PRODUCTION DATA INSTRUCTIONS

JDF

BUSINESS DATA

JANUARY 12

VARIABLE DATA

<NAME>
<EMAIL ADDRESS>
<PHONE NUMBER>

©Canon Solutions America, Inc."Inkjet Workflow: How to Make your Work Flow Efficiently"

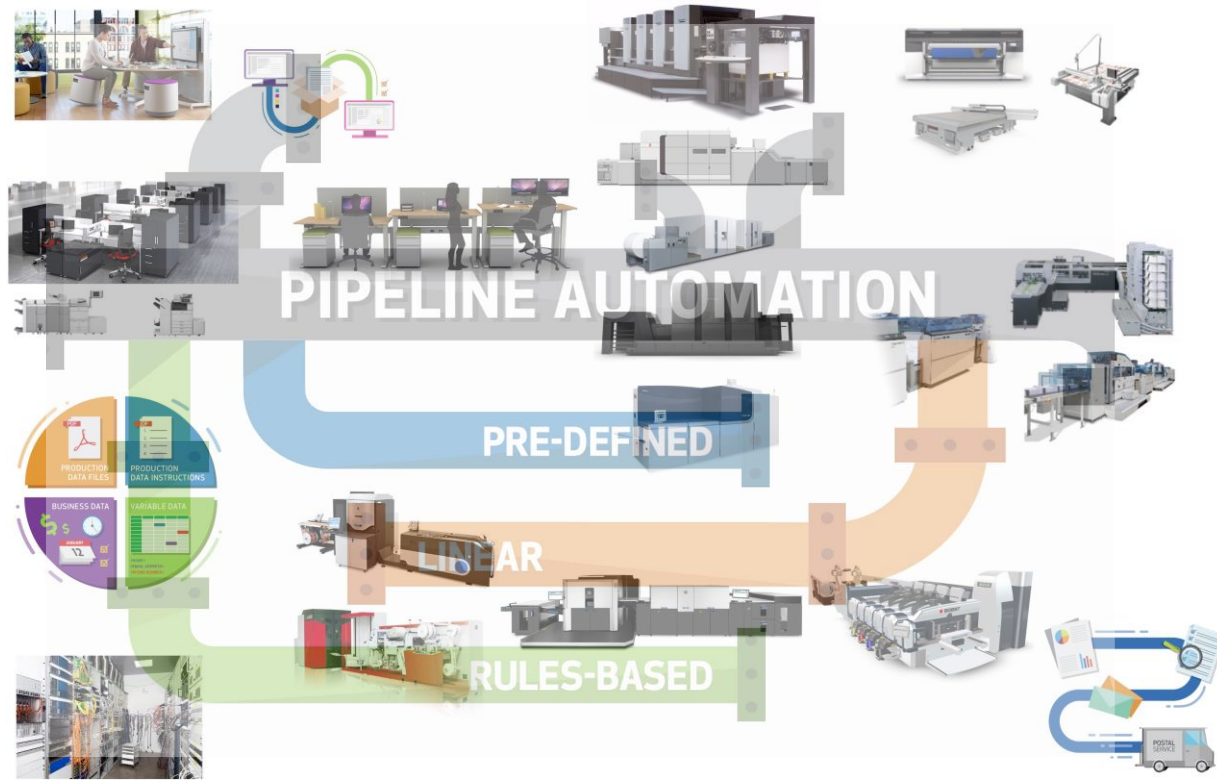inkjet SUMMIT

Integrated platform with disparate systems

Hybrid

- Printing as an integral part of manufacturing and marketing…
- Multiple connected printing and finishing technologies
- Inline cutting, folding, embellishment, etc.

Bespoke

- Printing as an integral part of manufacturing and marketing…
- Custom designed application-based production
- Part of a manufacturing or marketing process
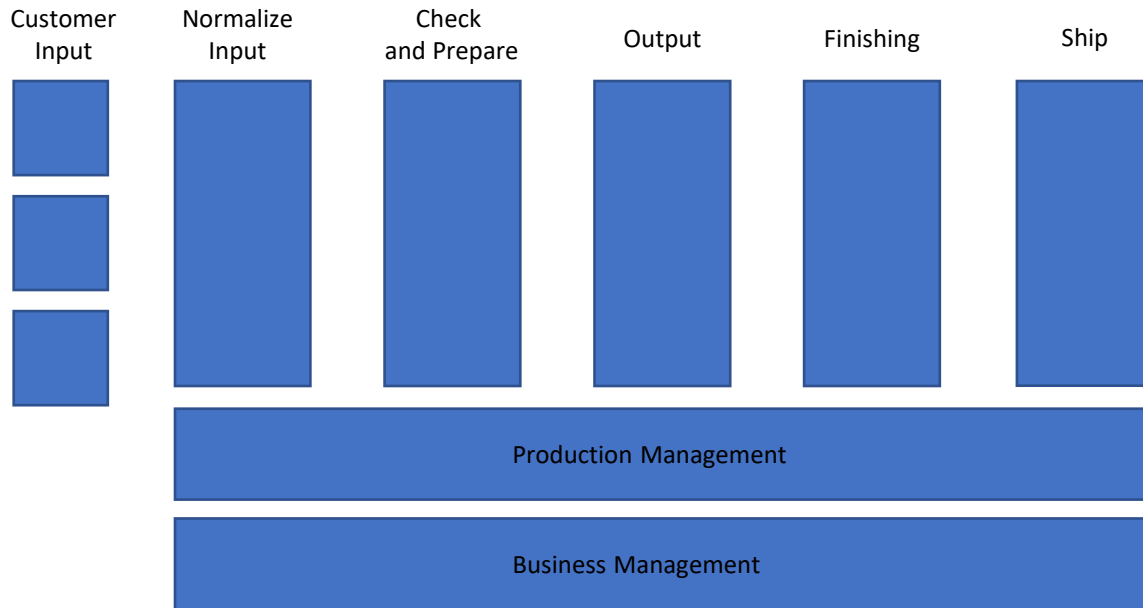
inkjet SUMMIT

Process connectivity

PIPELINE AUTOMATION

PRE-DEFINED

LINEAR

RULES-BASED

ZWANG & COMPANY

inkjet SUMMIT

Process Integration and Process Modularity

ZWANG & COMPANY

inkjet SUMMIT

Where do you start internally?

Divide into high level processes

Customer Input	Normalize Input	Check and Prepare	Output	Finishing	Ship

Production Management

Business Management

inkjet SUMMIT

Onboarding is the bridge to customer

Ad hoc

- Manual process
  - Email
  - FTP
  - Etc.
- Most flexible
- Labor intensive
- Disconnected

Webshops

- Window into your business
  - Transactional
  - Service offerings
- Opportunities for process integration
- Exception handling

EDI

- Customer to PSP system integration
- Most efficient
- Limits to flexibility

ZWANG & COMPANY

inkjet SUMMIT

Tying it together
System Modularity

Open, cloud-based, and highly functional components are changing the way companies view and implement MIS/ERP and Workflow solutions and are increasingly a harbinger of a different approach
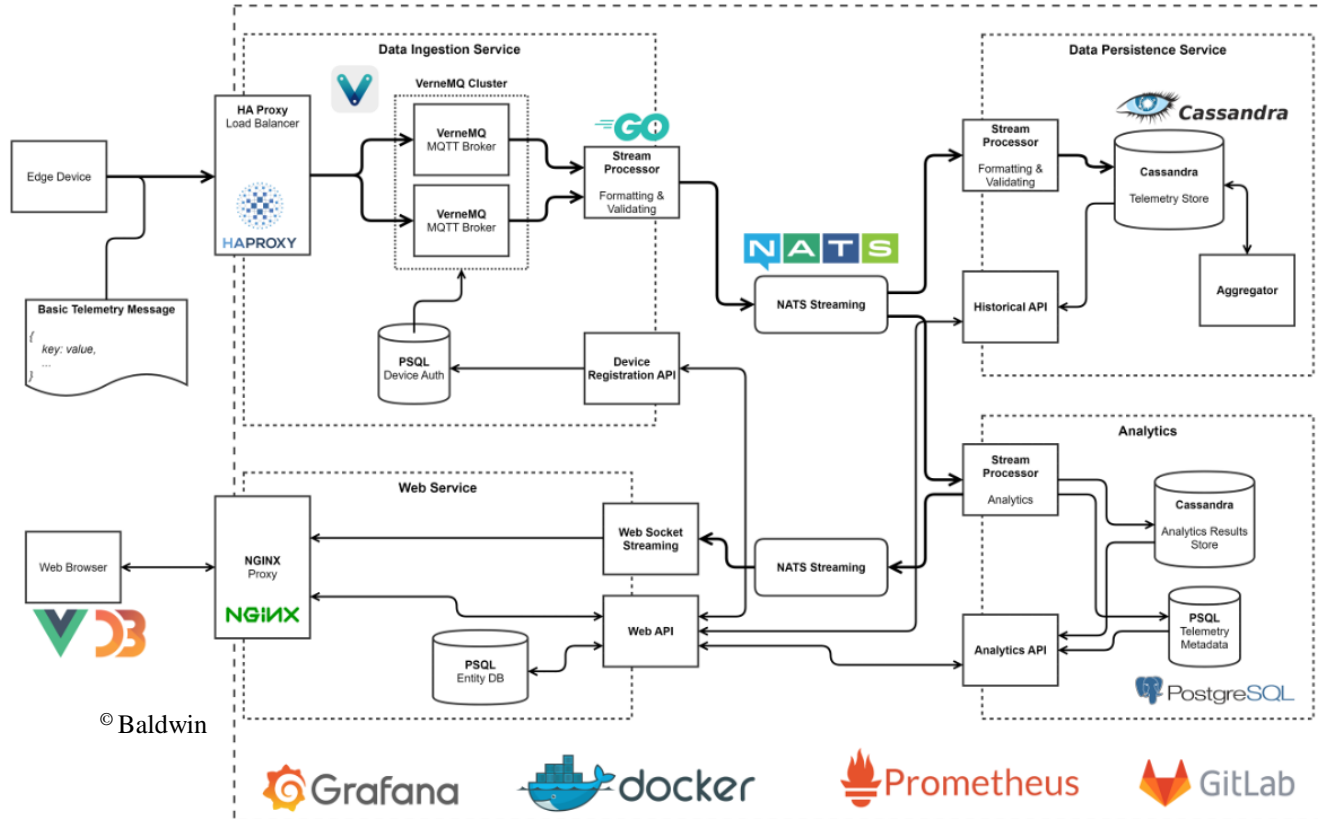
inkjet
SUMMIT

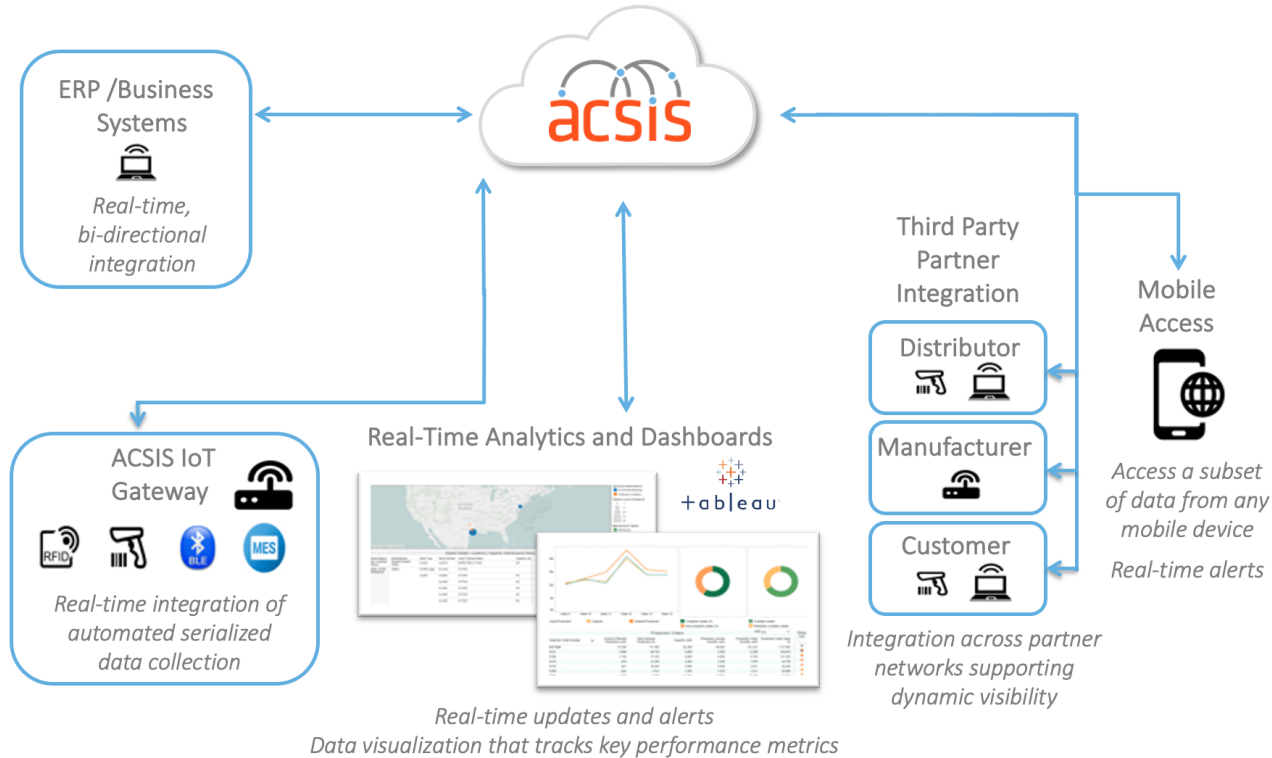# Standard languages facilitate integration

- PDF/X Plus - GWG

- XML – Extensible Markup Language

- JSON – JavaScript Object Notation

- JDF/JMF – Job Description Format/Job Messaging Format

- API's – Application Programing Interface

- CxF - Color eXchange Format

- PQX/PRX – Print Quality eXchange

Machine Learning

© Baldwin

Connected supply chain - i4.0

Yes… and robots too

Adoption is a function of Adaptation

Old Habits Die Hard

Never as fast as you would believe

Key is to know when to embrace change

Embracing it offers a competitive edge

ZWANG & COMPANY

inkjet SUMMIT

THANK YOU!