The right way to combine AI and RPA

February 14th, 2018

WorkFusion

Welcome and webinar reminders

Welcome

Thank you for attending

Audio Controls

Please mute your line

Tech Issues

Troubleshooting your connectivity

Asking a question

Who you will be hearing from

Speakers

Sarah Burnett
Vice President
The Everest Group

Anthony Russo
Head of Product Marketing
Work Fusion

Our Agenda

Combining RPA + AI

How RPA + AI create a path to a digital workforce

A data first approach to AI

By focusing on data WorkFusion enables a path to AI in the enterprise

Questions

Q&A Session

The right way to combine AI and RPA

Sarah Burnett
February 2018

Everest Group is a leading global services research and advisory firm

Range of services

Strategy
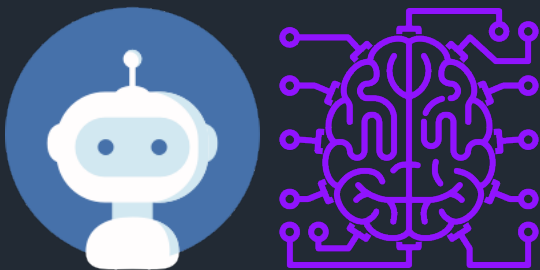Consulting and research services to turn insights into decisions

Syndicated Research
Research reports, data sets, customized tracking services, analyst inquiries, thought partnering

Implementation
Consulting services to capture value from decisions

Custom Decision-support Research
Market-facing thought leadership, webinars, research-driven strategic market studies, competitive assessments

Everest Group
Research has served

137 unique service provider clients

115 unique enterprise clients

in the past 2 years

Everest Group
25 years

120 #of Fortune 500 companies our consulting group has served in the past 3 years

Ongoing coverage of

44 functions across BPS and ITS

Headquarters Dallas, TX

New Delhi Bangalore

New York, NY

6 #of Everest Group global locations

Toronto, Canada

London, England

207 #of employees

200+ global cities

We track

150+ service providers

Enterprises are changing their service delivery models to meet new expectations from customers

	Arbitrage-first — Decline	Digital-first — Hypergrowth
Value	• Cost savings • Efficient process • SLA reporting	• Elimination of manual work • Reimagined processes • Focus on business metrics
Levers	• Labor arbitrage • Lean six-sigma • Legacy tools & wrappers	• Deep domain expertise • Design thinking • Digital tools & technologies
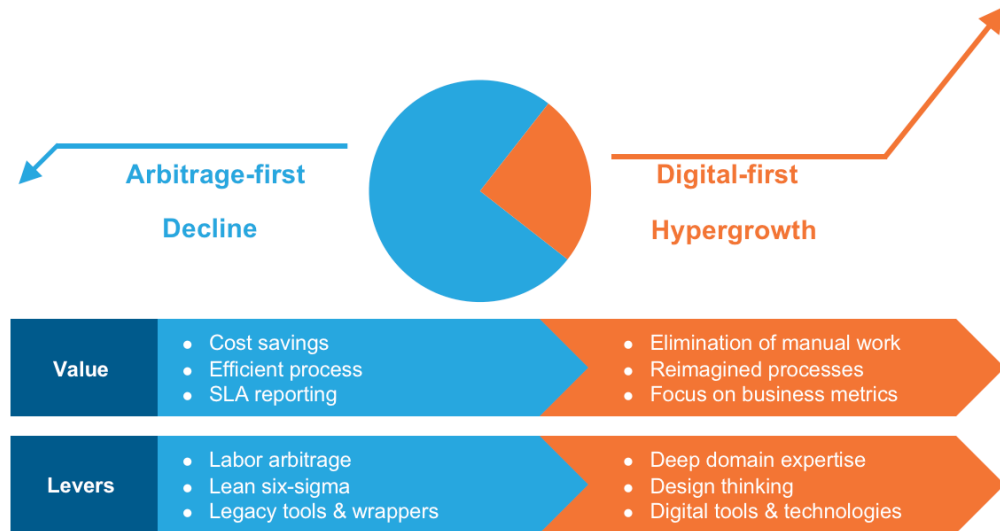
DEEPDIVE | Everest Group

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Among the various next-generation technology levers in global services, Service Delivery Automation (SDA) is the most powerful

Current maturity level (High / Low)

High
- Digitization
- Reconciliation/matching solutions
- Workflow
- Data management
- Interaction solutions
- Reporting

Traditional technology levers

Next-gen technology (digital) levers
- Analytics
- RPA
- BPaaS
- SDA solutions
- Cognitive/AI
- IoT
- Blockchain??

Low

Impact on business outcome (Low / High)

Blockchain is likely to have the most dramatic impact on the BPS industry, but only if it fulfills its promise.

Source: Everest Group

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RPA and AI are the key components of SDA with different approaches to solve business problems

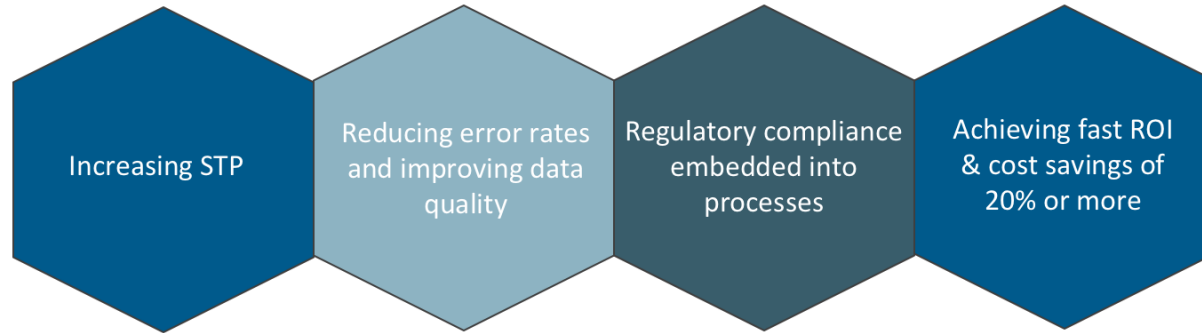| Robotic Process Automation (RPA)	Cognitive / AI
Mimics a user's activities – non-invasive approach to system integration	Mimics human thought process through vision, language, and pattern detection
Can process structured and some semi-structured data	Can process structured, semi-structured, and unstructured data
Highly rules-based; No learning capabilities	Can "learn" or change its behavior over time
Highly deterministic	Probabilistic but can have safeguards to make it deterministic
Bridges the gap between enterprise systems	Point solutions for specific requirements

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SDA solutions can result in significant operational benefits

Increasing STP

Reducing error rates and improving data quality

Regulatory compliance embedded into processes

Achieving fast ROI & cost savings of 20% or more

The RPA software market is growing fast

RPA market size[1]
US$ million

XX CAGR (2017-2019)

1,200-1,500

70-90%

92-97%

450-490

~220-260

2016   2017   2019E
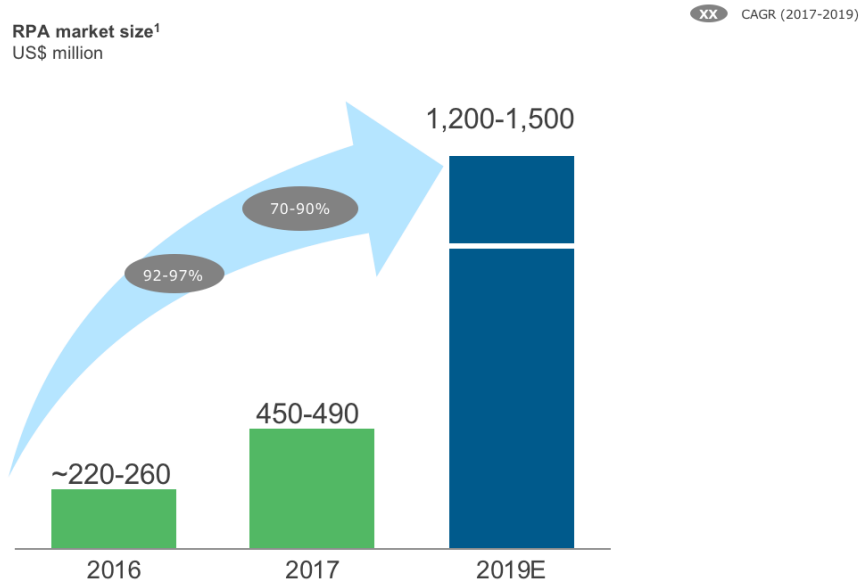
1 RPA market is calculated based on the revenue that independent technology vendors have generated from RPA licenses as well as professional services. Does not include revenue generated by cognitive technology vendors, IT automation vendors, service providers, consultancy firms, or system integrators

Everest Group

The AI software market for global services is exhibiting high growth and is expected to further accelerate in the future

AI ISV market size and growth[1]
2016-2020(E); US$ billion

X-Y% Compound annual growth rate

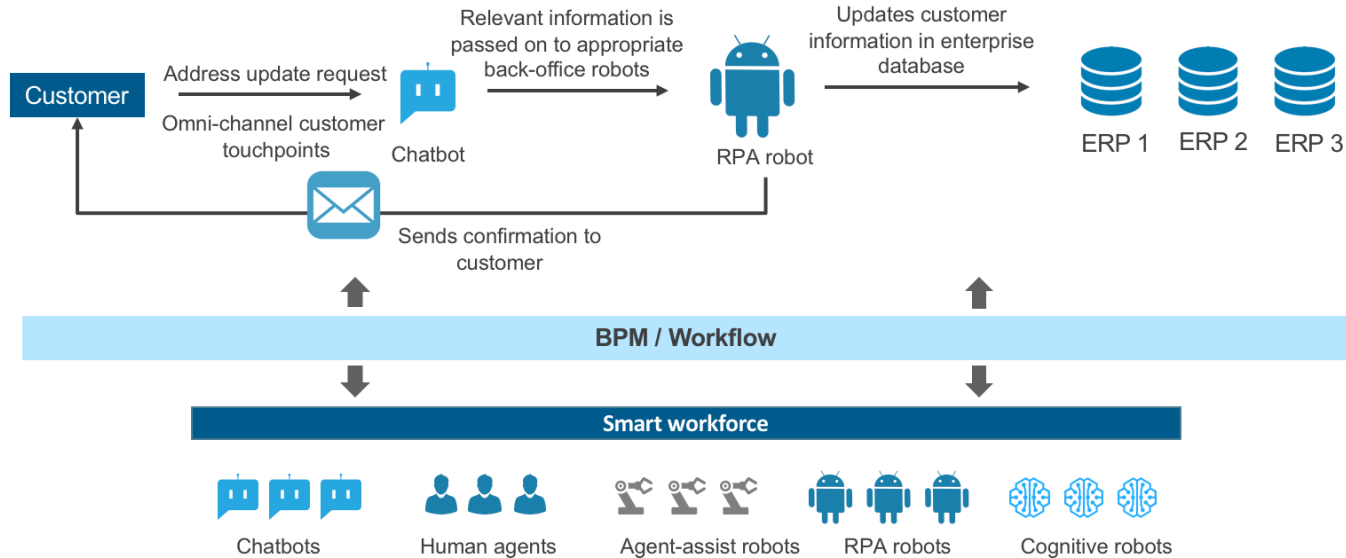2016 — 1.2-1.6

45-55%

2.0-2.4 — 2017E

50-60%

8.1-8.5

2020E

1 Revenue numbers have been extrapolated on the basis of data gathered for a representative set of 40 AI ISVs in global services, as of July 2017
Source Everest Group (2017)

When combined together, RPA and AI create a smart digital workforce and can lead to end-to-end process automation
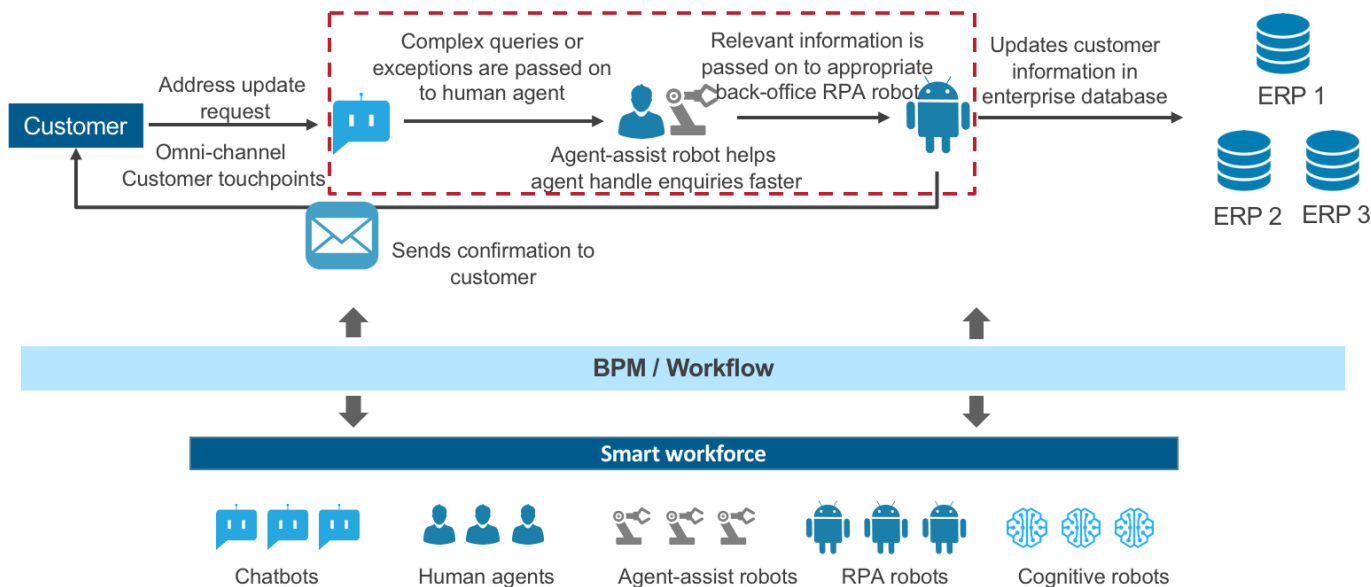
Cognitive/AI　**RPA**

ILLUSTRATIVE

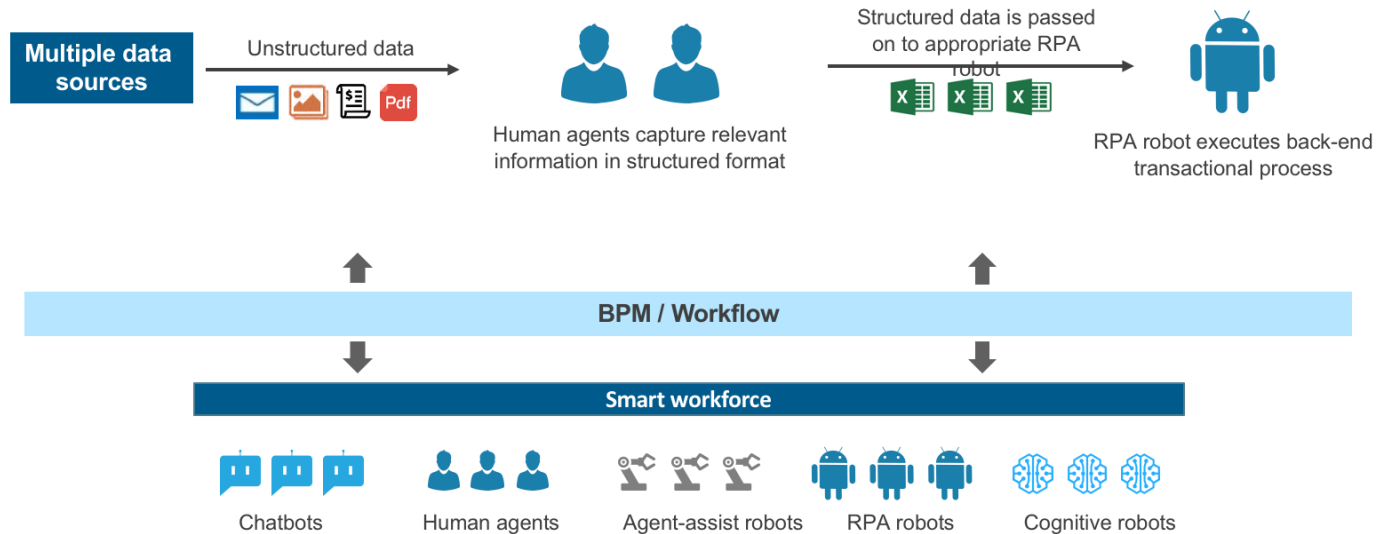| Digital workforce	Activity	SDA solution
Chatbots	Identifying the intent and resolving customer enquiries in natural language over voice or text	
Agent-assist robots	Automating various applications on agent's desktop or virtual applications and learning from past customer interactions to suggest the next best action	
Data entry robots	Gathering data from structured or unstructured documents and entering into systems	
Copy-paste robots	Executing rules-based processes involving copying data from one application to another	
Reconciliation robots	Matching transactions across disparate systems	

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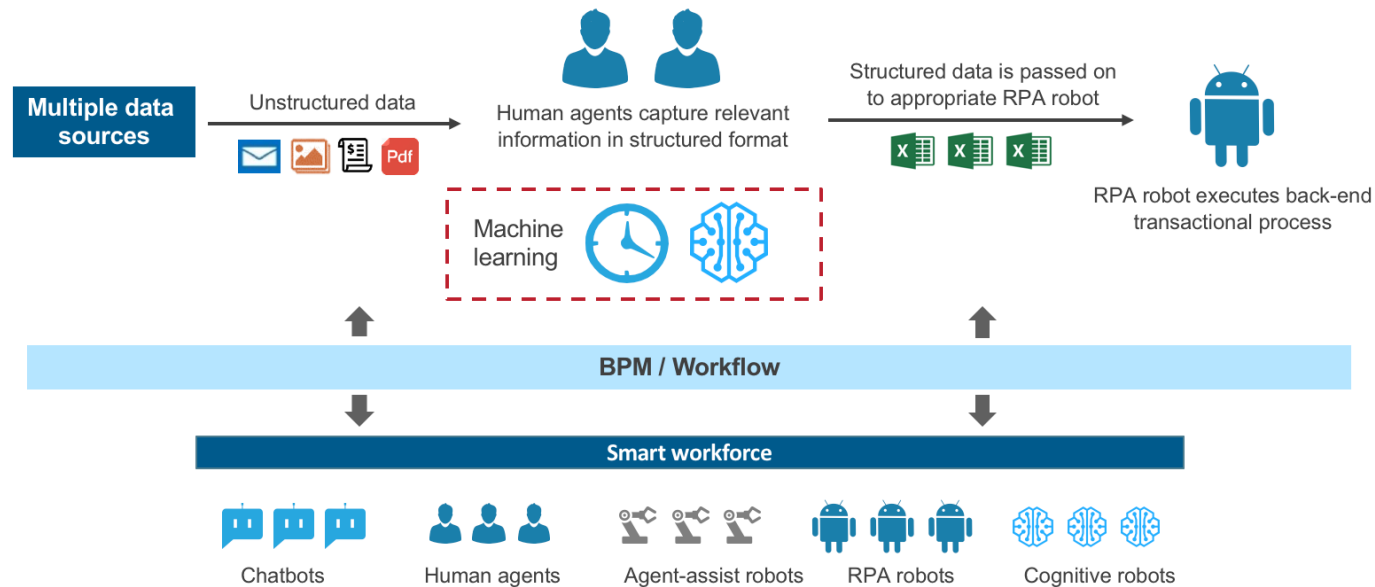# Smart workforce is leveraged for digital transformation of business operations

Relevant information is passed on to appropriate back-office robots

Updates customer information in enterprise database

Address update request

Omni-channel customer touchpoints

Customer

Chatbot

RPA robot

ERP 1   ERP 2   ERP 3

Sends confirmation to customer

BPM / Workflow

Smart workforce

Chatbots   Human agents   Agent-assist robots   RPA robots   Cognitive robots

Smart workforce is leveraged for digital transformation of business operations

Customer

Address update request

Omni-channel Customer touchpoints

Complex queries or exceptions are passed on to human agent

Agent-assist robot helps agent handle enquiries faster

Relevant information is passed on to appropriate back-office RPA robot

Updates customer information in enterprise database

ERP 1

ERP 2   ERP 3

Sends confirmation to customer

BPM / Workflow

Smart workforce

Chatbots

Human agents

Agent-assist robots

RPA robots

Cognitive robots

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Smart workforce is leveraged for digital transformation of business operations

Multiple data sources

Unstructured data

Human agents capture relevant information in structured format

Structured data is passed on to appropriate RPA robot

RPA robot executes back-end transactional process

BPM / Workflow

Smart workforce

Chatbots · Human agents · Agent-assist robots · RPA robots · Cognitive robots

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Smart workforce is leveraged for digital transformation of business operations

Multiple data sources

Unstructured data

Human agents capture relevant information in structured format

Structured data is passed on to appropriate RPA robot

RPA robot executes back-end transactional process

Machine learning

BPM / Workflow

Smart workforce

Chatbots

Human agents

Agent-assist robots

RPA robots

Cognitive robots

Smart workforce is leveraged for digital transformation of business operations

Multiple data sources

Unstructured data

Human agents and **cognitive robots** capture relevant information in structured format

Structured data is passed on to appropriate RPA robot

RPA robot executes back-end transactional process

Cognitive robot developed and added to the resource pool

BPM / Workflow

Smart workforce

Chatbots

Human agents

Agent-assist robots

RPA robots

Cognitive robots

Case study | Customer on-boarding in a retail bank

Business problem:

- The bank was looking at opportunities to improve their customer experience as part of the efforts to digitize bank operations
- One of the processes that required to be optimized was customer onboarding, which typically took 16 days for completion
- The bank had several disparate legacy systems that needed to be integrated to optimize the entire customer onboarding process

Solution:

- The bank engaged with a smart automation solution provider to optimize their customer onboarding process
- The solution implemented was an enterprise-wide automation platform which helped to transform the operations of the bank
- The solution included SDA capabilities such as RPA, OCR, workflow, cognitive automation, and analytics with a process-centric software subscription model (vs. per bot licensing)

Business outcomes:

- The bank reduced the average customer onboarding time from 16 days to 9 minutes
- Achieved STP rates of 60-100% across various processes where solution is implemented
- Customer onboarding process is optimized to be completed when the customer is online and interacting with Standard Bank

Thank You

Everest Group®

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www.everestgrp.com

The world is becoming too complex for rules

Software is eating the world, AI is eating software

World   Software   AI
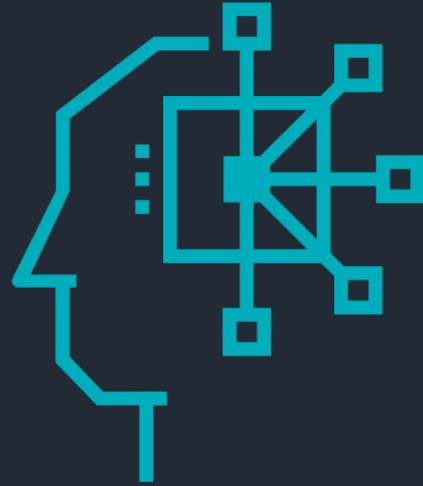
WorkFusion

Why do we need a new way?
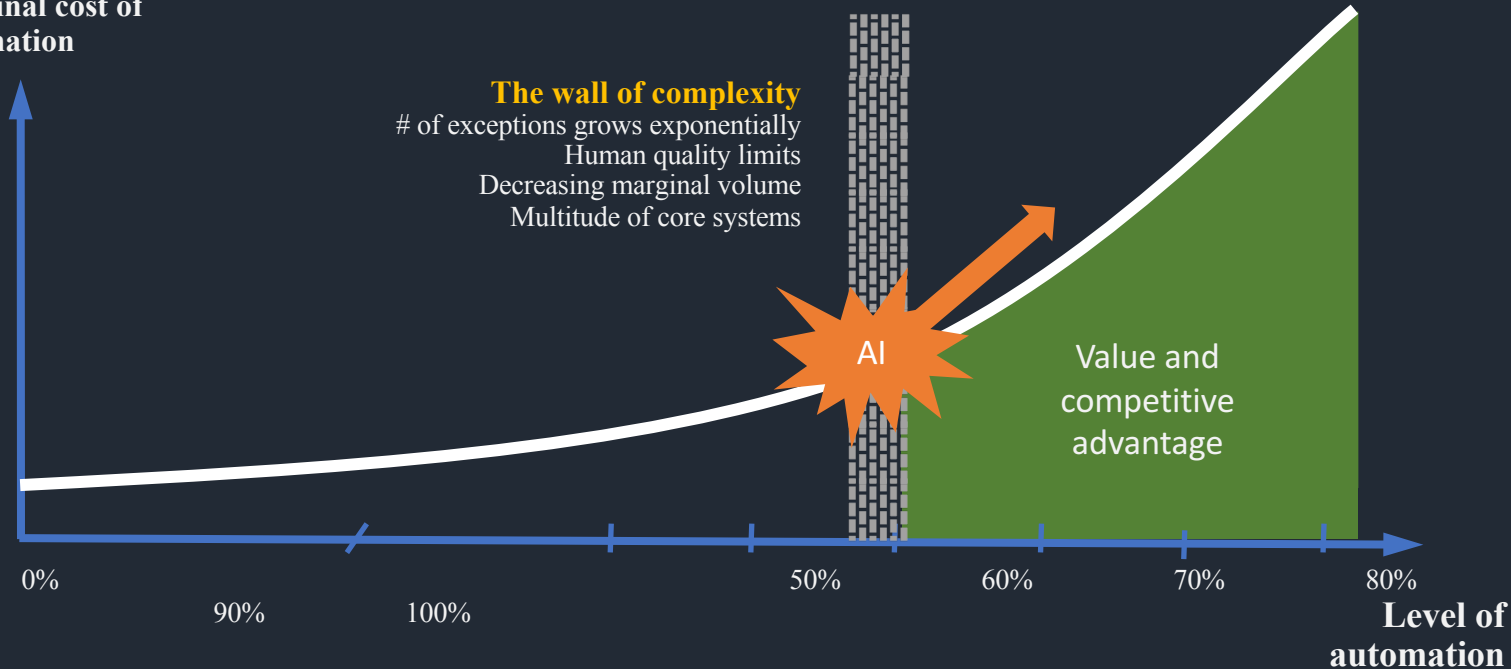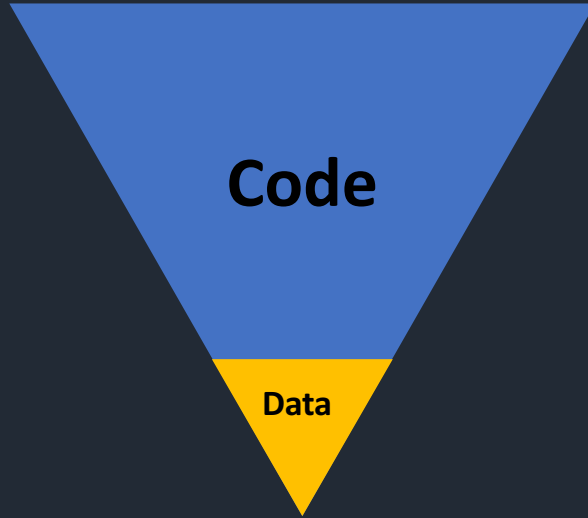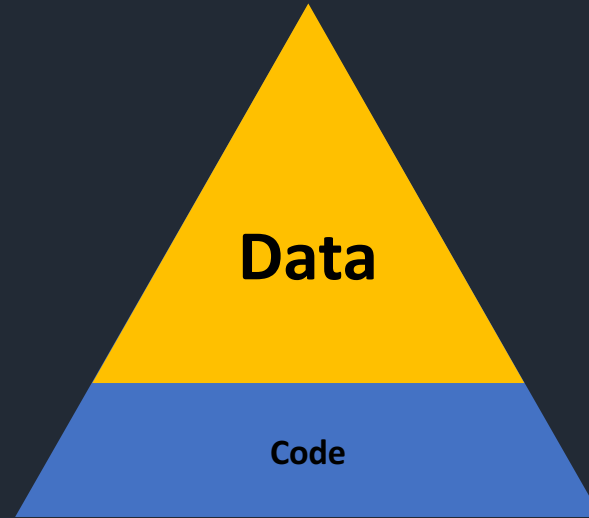
Software 2.0

Consists of simple Software 1.0 components

Highly portable from problem to problem

Adapts to changes

Always uses same resources

Easy to optimize for performance

Deals with complexity effectively

Intelligence is not about moving form tech to tech
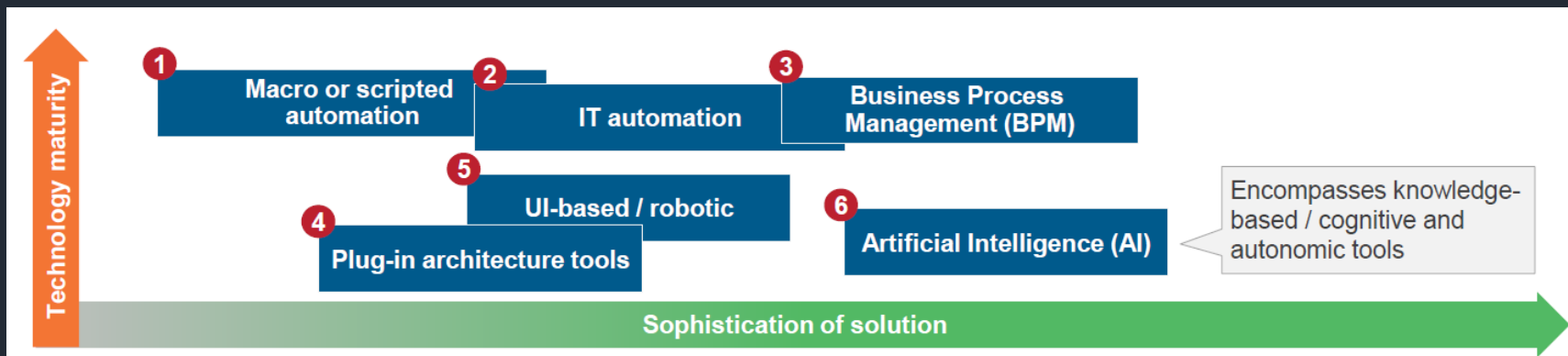
Software 2.0

Model Boundary Erosion

Entanglement

Correction Cascades

Undeclared Consumers

Data Dependencies

Unstable Dependencies

Underutilized Dependencies

Static Analysis

Feedback Loops

Direct Loops

Hidden Loops

Anti-patterns

Glue code

Pipeline Jungles

Dead Experiment Code

Configuration Debt

Feature Configs

Algo Configs

Pre- & Post Configs

External Systems

Fixed Thresholds

Monitoring & Testing

Process Management
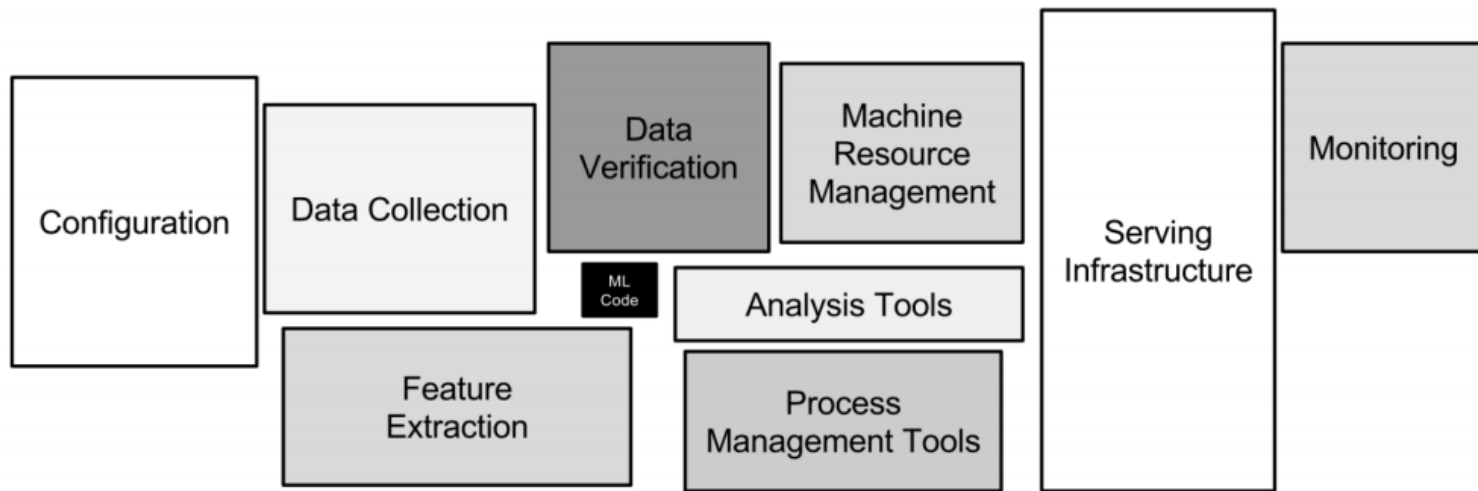
Infrastructure 2.0

Infra 3.0

Data Acquisition, Preparation & Feature Engineering

Model Training & Evaluation

Deployment, Inference & Monitoring

Feature Store	Metadata Store

Configuration	Experiment Management	Tuning / Optimization

Feature Engineering

Machine Learning Framework
(TensorFlow, Caffe, PyTorch, etc.)

Data Transformation	Data Validation	Versioning

Distributed Computing Framework
(Spark, Ray, etc.)

Pipeline Storage – Batch (Hadoop, S3, etc.)	Streaming – Real-time (Spark, Heron, etc.)

Cluster Management
(Kubernetes, Mesos, etc.)

Systems Software
(Drivers, Libraries, Toolkits, etc.)

Data Ingest
(Kafka, etc.)

Hardware
(CPU, GPU, FPGA, TPU, etc.)

Serving Infrastructure

Observability (Monitoring / Logging)

Amplify Partners

Intelligent Automation dilemma: old vs new

Projects

Intelligent Automation

Infrastructure 2.0
VMs

Software 1.0
Coding apps

SoI

SoI

Software 2.0
Training

Infrastructure 3.0
Machine Learning Stack
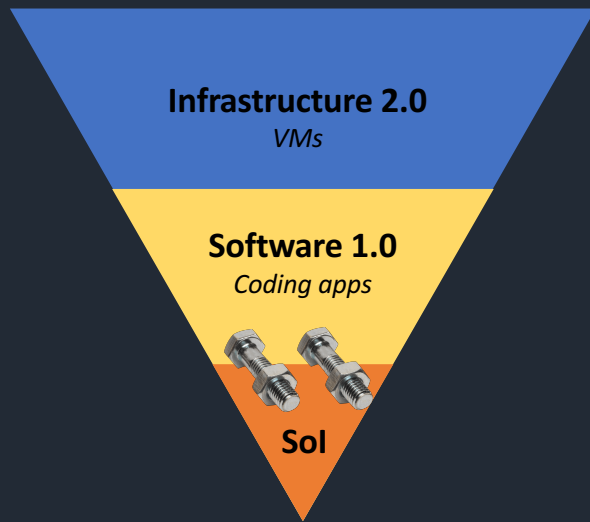
"Automation"
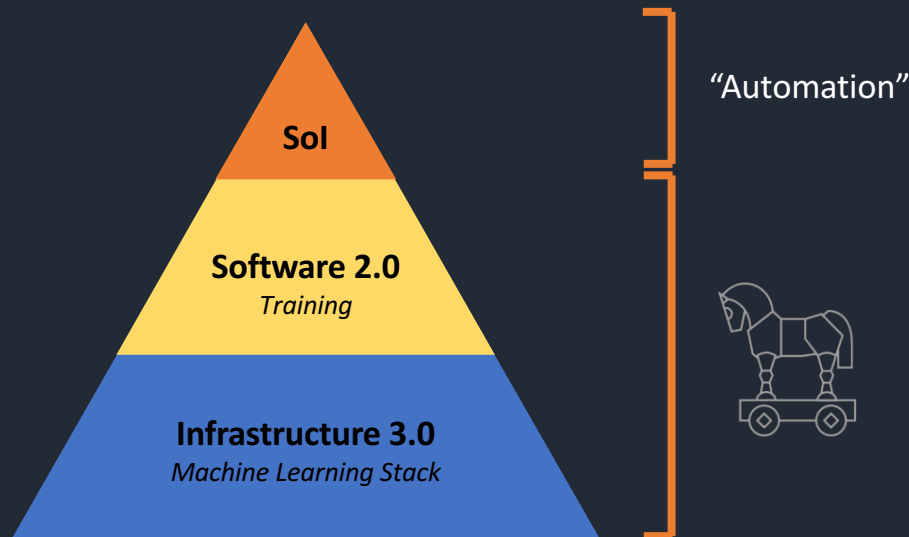
WorkFusion

WorkFusion is an AI-native full-stack automation
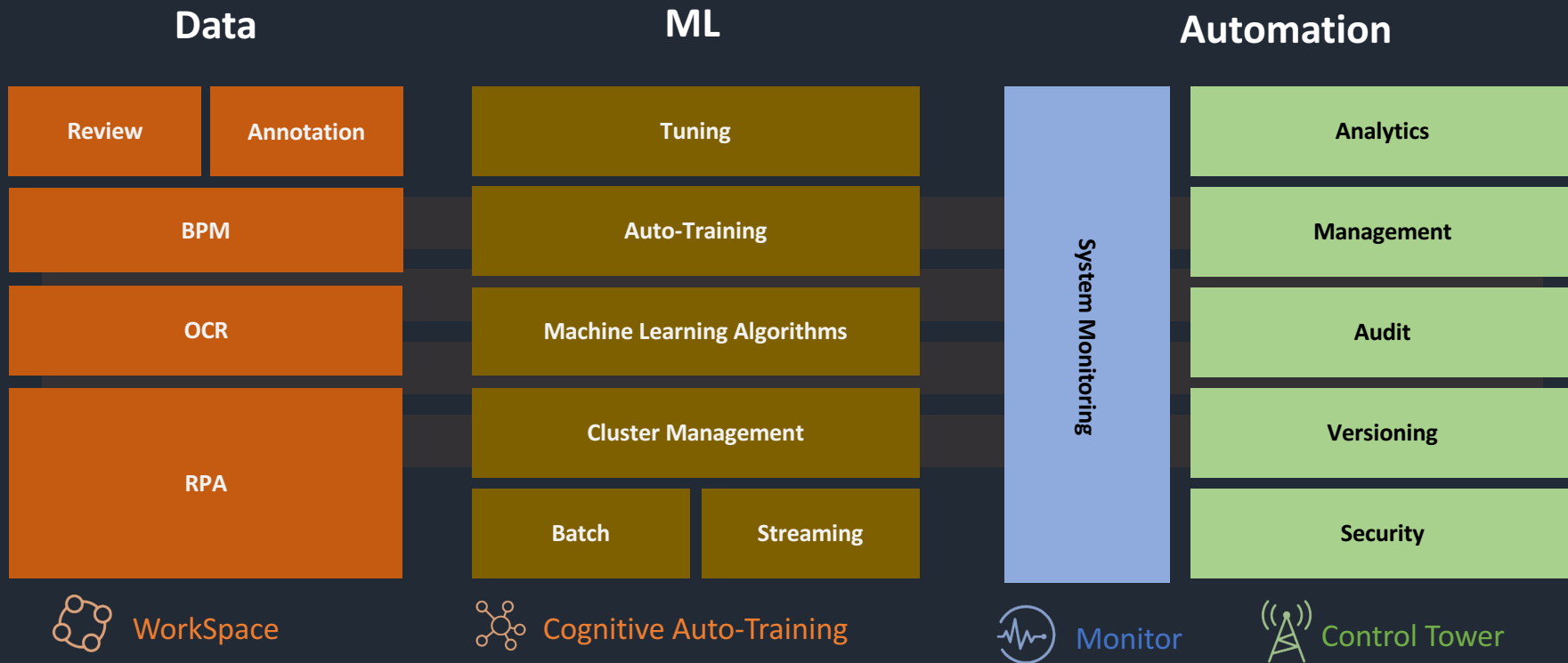
Data	ML	Automation	

Data

Review	Annotation
BPM	
OCR	
RPA	

ML

Tuning
Auto-Training
Machine Learning Algorithms
Cluster Management

Batch	Streaming

Automation

System Monitoring

Analytics
Management
Audit
Versioning
Security

WorkSpace

Cognitive Auto-Training

Monitor

Control Tower

WorkFusion

Appeal Handing

Robotics and cognitive

Head work

i.e. extracting information from unstructured sources

Cognitive Automation

Hand work

i.e. entering data from one application into another

Robotics
"aka" RPA

Appeal Handling

A member submits a
policy compliant or
appeal

Appeal Handling

A member submits a
policy compliant or
appeal

Information extracted from
the documents

Appeal Handling

A member submits a policy compliant or appeal

Information extracted from the documents

Information is recorded in various systems is routed to the correct team

Problems to Address

Finding and extracting a date from a policy today is a manual process

WorkFusion

Automated 89% of a manual process

A member submits a policy compliant

The provider makes a decision on the compliant

The decision and date is recorded on the policy

OCR

RPA

BPM

Digitization policy with the complaint and recorded date

Rules to extract data from the policy

Manage process exceptions

WorkFusion

Automated 89% of a manual process

A member submits a
policy compliant

The provider makes a
decision on the
compliant

The decision and date is
recorded on the policy

Automation
Rate

89%

Accuracy
Rate

99%

```
OCR  →  RPA  →  BPM
```

Digitization
policy with the
complaint and
recorded date

Rules to
extract data
from the policy

Manage
process
exceptions

Improved accuracy of time stamp
and other data extracted from
62% to 99%

Automated **89%** of the manual
process for extracting a date
from a policy decision

WorkFusion

Trade
Finance

Let's look under the hood of Trade Finance automation

Identify documents	OCR	Process Cover Letter	Process Invoice	Scrutiny match	Enter into trade app

Starting point: 500 documents / day
12 minutes for maker
6 minutes for checker

Trade data

#	Data Attribute	Present in Cover Letter / Invoice / or Both?
Amount Details		
1	Amount	Both
2	Currency	Both
Party Details		
3	Drawer Name	Both
4	Drawer Country	Both
5	Drawee Name	Both
6	Drawee Account Number	Cover Letter
Payment Details		
7	Bank Name	Both
8	Beneficiary Account #	Both
9	IBAN **(not included in final test)**	Both
10	SWIFT	Both
11	Invoice Number	Both
12	Invoice Date	Invoice
13	Corresponding Bank Charges	Cover Letter

Identify documents	OCR	Process Cover Letter	Process Invoice	Scrutiny match	Enter into trade app

WorkFusion presents input documents

Original PDF

Page: 1 of 11 — + Page Width

Bangalore Branch

DATE: 26/2/2016 REFERENCE NO 797 ICS160 7710 AMOUNT: € L 31,373|00

CUSTOMER: MASTER NO.: 2040996 PRIORITY: URGENT [ ]

RELATED REF. NO. 797

IMPORT PRODUCTS

[ ] IMPORT BILL FOR COLLECTION (IC)   [ ] IMPORT BILL – SIGHT (IN)

[ ] IMPORT BILL – USANCE (IU)

[ ] INVOICE'S CHECKED AND FOUND CORRECT

[ ] TRANSPORT DOCUMENTS IN ORDER | AWB / BL |

✔ RBI REGULATORY / KOP CHECKS DONE   SHIPMENT DATE : ---

DOCUMENT TYPE	ORIGINAL	COPY	SCAN	REMARKS
PRESENTING BANK COVERING LETTER / SUPPLIERS COVERING LETTER				
DRAFTS / BILLS OF EXCHANGE				
COMMERCIAL INVOICE				
PACKING LIST / WEIGHT LIST				
INSURANCE POLICY / CERTIFICATE				
OCEAN BILL OF LADING (B/L)				

DOCUMENTS CHECK REQUIRED [YES / NO]

Multiple Invoices?
☐ Yes

Cover Letter

Cover Letter Start Page
2

Cover Letter End Page
2

Invoice

Invoice Start Page
6

Invoce End Page
6

Person identifies documents

| Identify documents | OCR | Process Cover Letter | Process Invoice | Scrutiny match | Enter into trade app |

WorkFusion digitizes and pre-processes Invoice

Person tags data thereby generating training set

Extract Invoice Data

Click to show/hide instructions

Original PDF

Multiple invoices
Yes

Extract data from invoice

↶ ↷ 👁 Split view ⧉ Popup 🔍 🔍   [ ] 🔍 ∧ ∨ ▤ View answers as a table

INVOICE

Invoice number 102893 Invoice date 06/12/2016 Customer no.: 0000-1293

Bill to: Ship to:
Workfusion Inc. Workfusion Inc.
48 Wall Street New York 48 Wall Street New York
NY, 10007 NY, 10007
Phone number +1 201-999-7777 Phone number +1 201-999-
7778

Model No.	Description	Quantity	Amount
012391010	HF- Adhesive	1	2000.00
019239120	Chemicals	1	544.90
Sub-total			
Total amount (incl. tax)			2544.90

Please Wire Transfer money to following account

Name of beneficiary bank: ABC Services Inc.
Address of beneficiary: 11 Rovakatu, Helinski, Finland Name of the bank: Bank of Finland Address of the bank: Helinski branch Bank account number 10002920192 SWIFT/I BAN Code: BFINHEL10 10002920192

T Total Amount
2544.9

C Currency
set value

PARTY DETAILS (6)

I Drawer
ABC Services Inc.

A Drawer Country
Finland

E Drawee
Workfusion Inc.

N Invoice Number
102893

D Invoice Date
12/06/2016

PAYMENT DETAILS (5)

Q Beneficiary Bank Name
Bank of Finland

S SWIFT code
BFINHEL10 10002920192

L Beneficiary Account Number
10002920192

B IBAN
set value

Submit

Identify documents → OCR → Process Cover Letter → Process Invoice → Scrutiny match → Enter into trade app

WorkFusion performs cognitive matching →

Match Cover Letter vs Invoice

Click to show/hide instructions

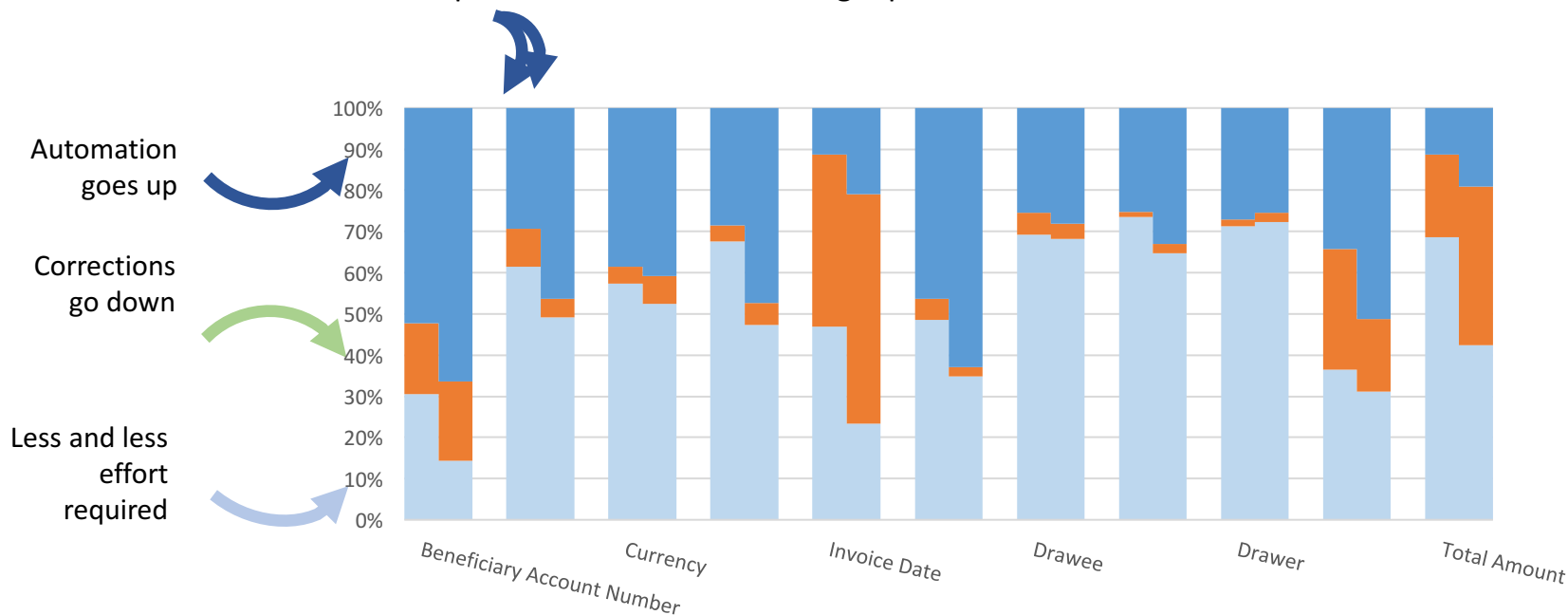**Person validates & corrects matching decisions**

Trade finance

Results of the cognitive automation

Cognitive automation improvement over 400 documents

Automation improves as more documents get processed

Automation goes up

Corrections go down

Less and less effort required

Beneficiary Account Number

Currency

Invoice Date

Drawee

Drawer

Total Amount

More and more work is eliminated as transactions get processed
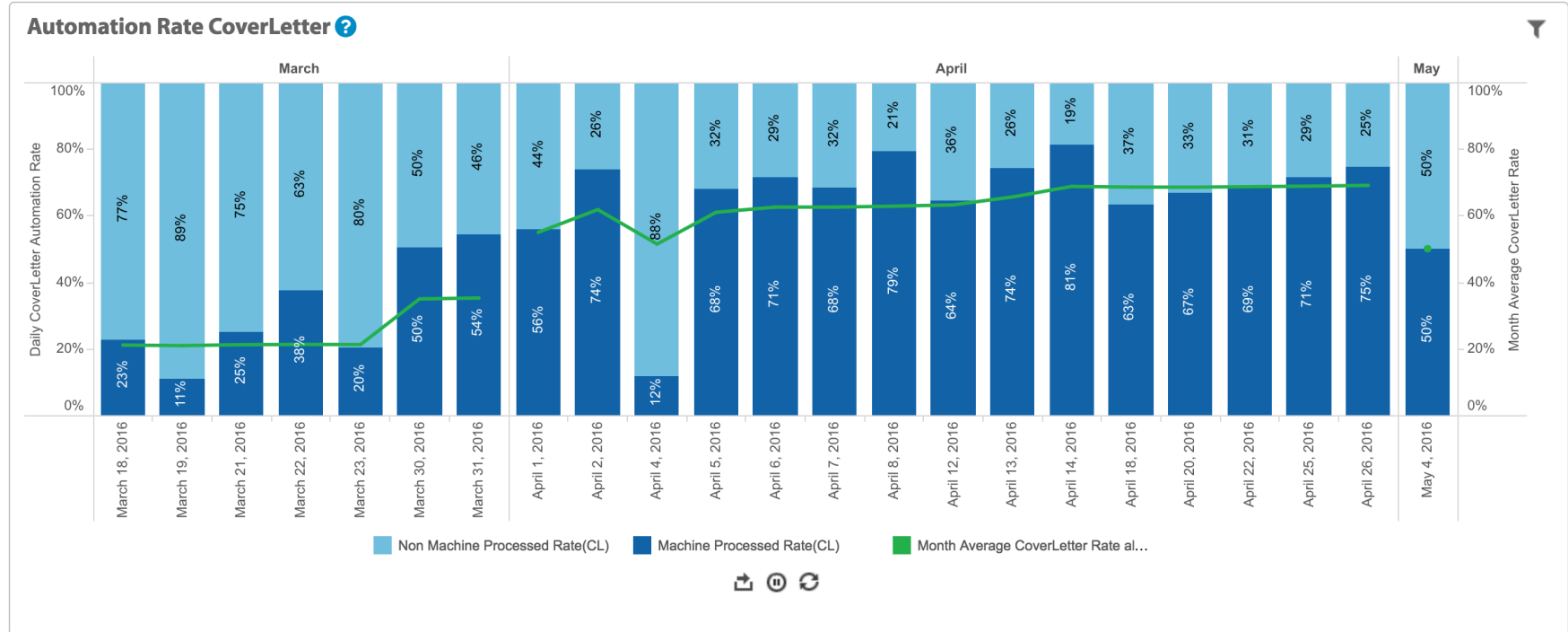
What to remember

How the rise of complexity is requires a data-driven approach and why coding rules will decline

The value of AI to a business is growing exponentially
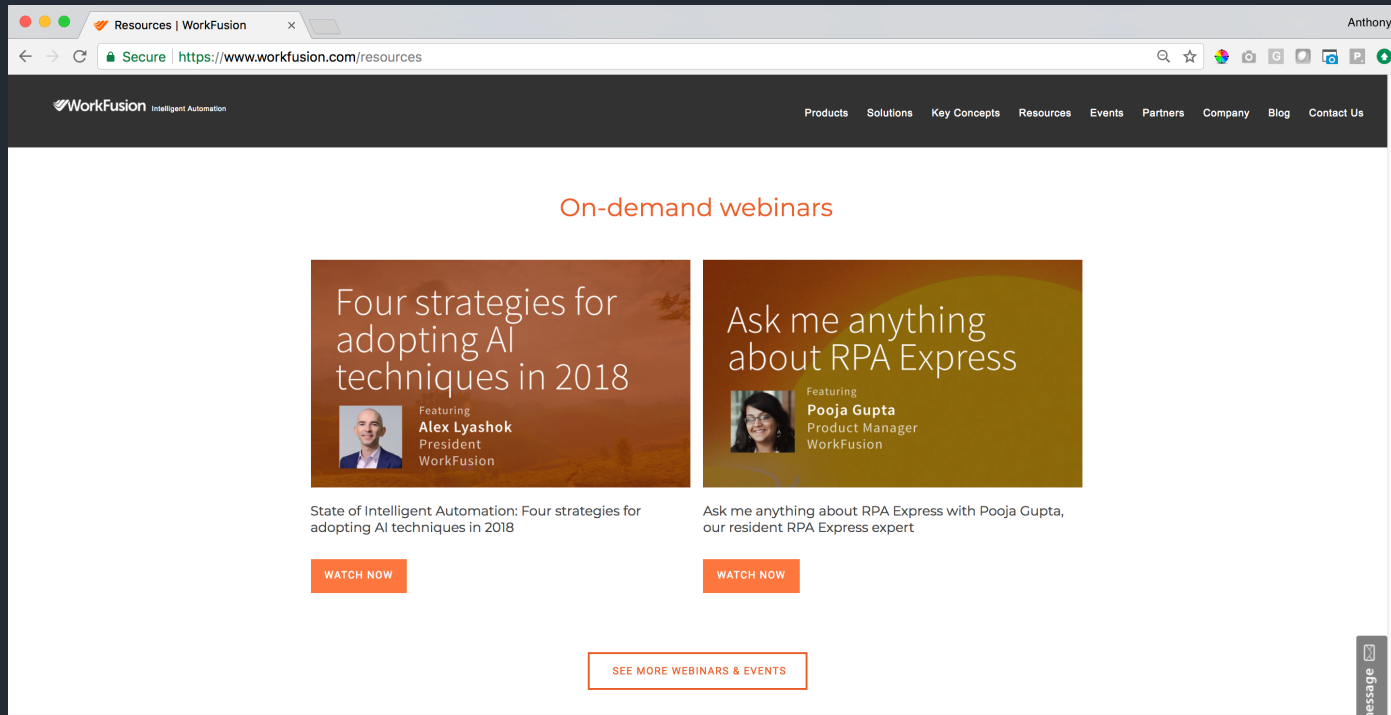
Moving use cases from RPA to AI

Your Questions

Watch our webinar series

www.workfusion.com/resources

Remember to leave us feedback

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Please rate your conference experience.

○10 ○9 ○8 ○7 ○6 ○5 ○4 ○3 ○2 ○1

Very Satisfied   Very Dissatisfied

Name:

Comments (500 char. max):

Feature Requests (500 char. max):

☐ **Please Contact Me**

Send Comments

Learn More

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learn@workfusion.com

Thank you