



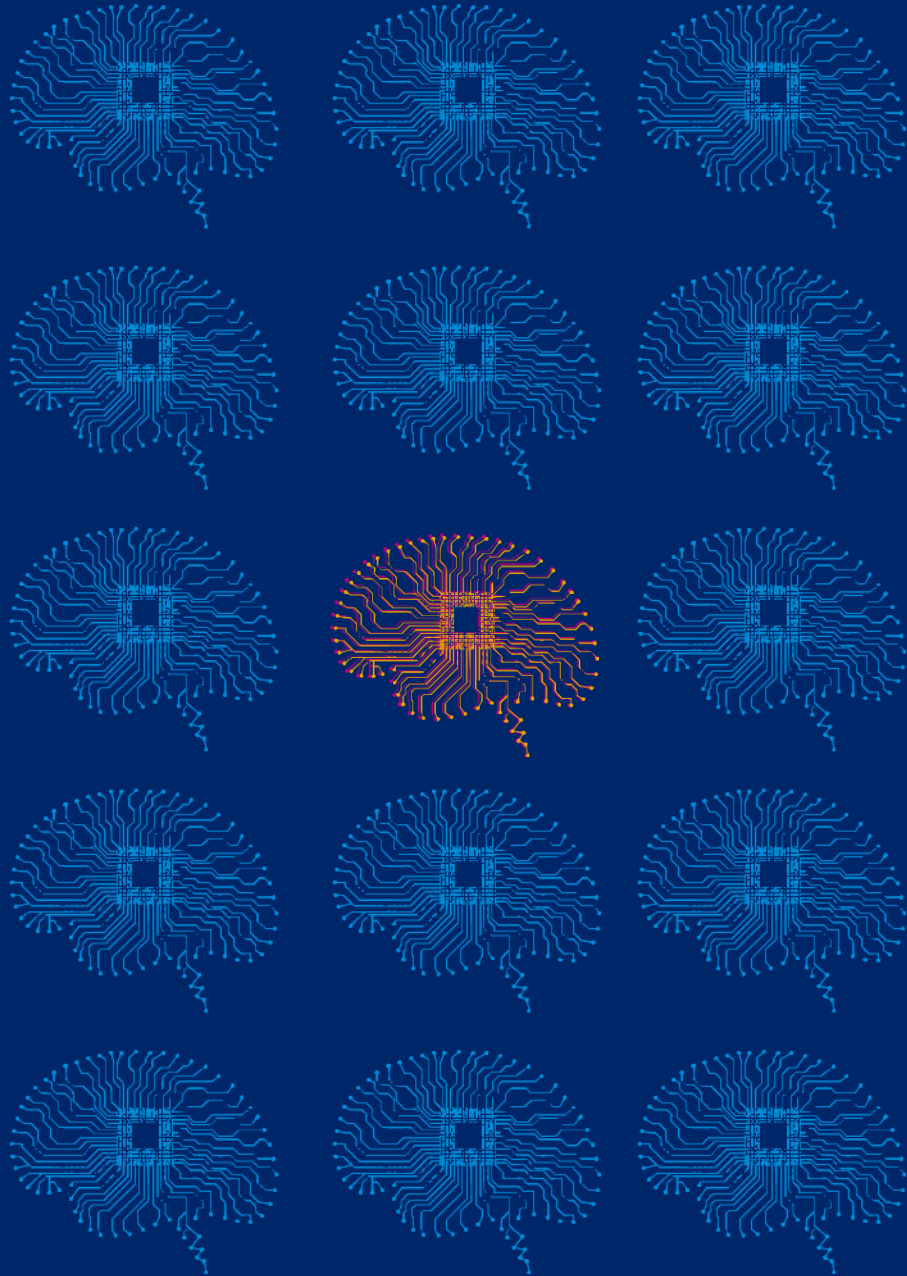
Getting started with digital labor

September 2017



Agenda

- Digital Labor Overview
- Use Cases in Healthcare and other functions
- Demos



Cognitive Technology and Digital labor

Cognitive systems are an application of **interpreting and learning systems** and **redefine the relationship** between human and machine

47%

Oxford economists Michael Osborne and Carl Frey warn that 47% of all US jobs are in play for computerization and automation

Knowledge work represents

\$9 trillion per year or 27% of all labor costs*

* McKinsey Global Institute: Disruptive technologies: Advances that will transform life, business and the global economy, May 2013

Cognitive Technology + Digital Work = Digital Labor



Cognitive Technology

(aka Artificial Intelligence:

simulate the way humans perceive, learn, reason and respond



Digital Work

is the human task of

organizing data and applying human context



Digital Labor

is the valorization of digital

work to automate activities and tasks that previously required human labor*

**Influenced by works of Christian Fuchs and Sebastian Sevignani of the University of Westminster*

Digital Labor is changing the way business is done

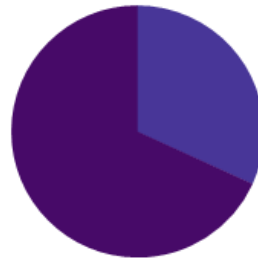
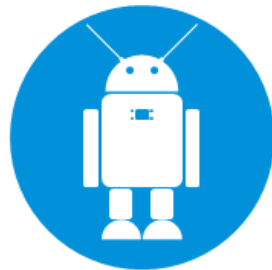
Digital Labor as a label, refers to the broad continuum of technologies that augment human judgment and automate physical tasks.

In spite of enormous investments in business enabling technologies, significant manual effort remains in the workplace – so called “swivel chair” activities



Additionally, knowledge workers in high-skill professions are being challenged to be able to fully access and take advantage of the vast, and expanding, amounts of information available to them.

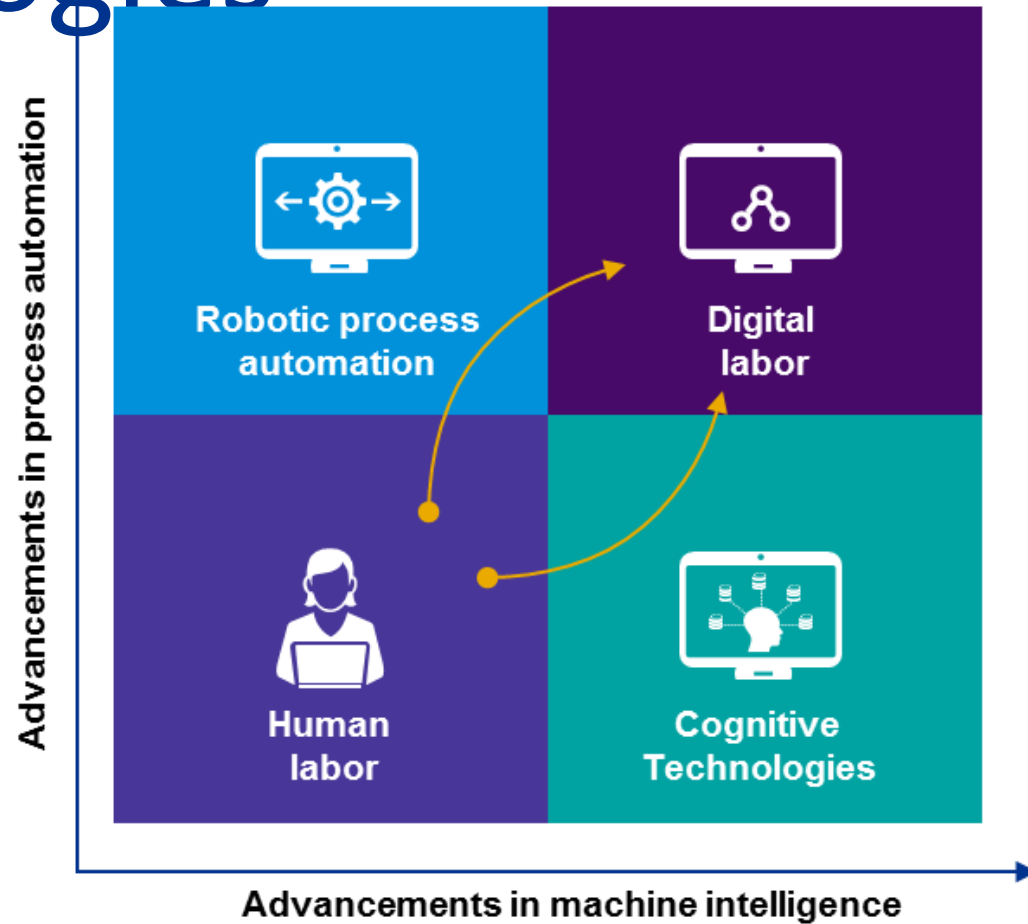
Robotic process automation, machine learning, and cognitive technologies are increasingly taking over or complimenting these roles



Gartner, predicts that by 2025, 1 of every 3 U.S. jobs will be in a category that has the potential for automation

Convergence of Cognitive & Robotic Technologies

- Automation of transactional, rule-based, and repeatable processes
- Technologies include OCR, rules engine, macros
- Benefits include FTE reduction, cycle time



- Sometimes referred to as “smart bots”
- Algorithms powering applications which execute judgement oriented tasks that require evidence and reasoning
- Interaction with humans is more natural
- Machine learning and adaptive technologies, which typically evaluate unstructured data, text, video and images
- Designed to perceive context and infer probabilistic answers
- Uses data and analytics technologies

What is a BOT?

Not...



Not...



The economics are compelling



Wave 1: Labor arbitrage



15 – 30 percent
Cost take out



Model is scalable to the extent that you can scale labor



Custom/complex, **legacy**:
“Your Mess for Less”



Access to **low cost labor** necessary to provide continuous value



Revenue/profit correlated to people



Wave 2: Labor automation



40 – 75 percent
Cost take out for relevant functions



Model is scalable, and is **largely independent of labor growth**



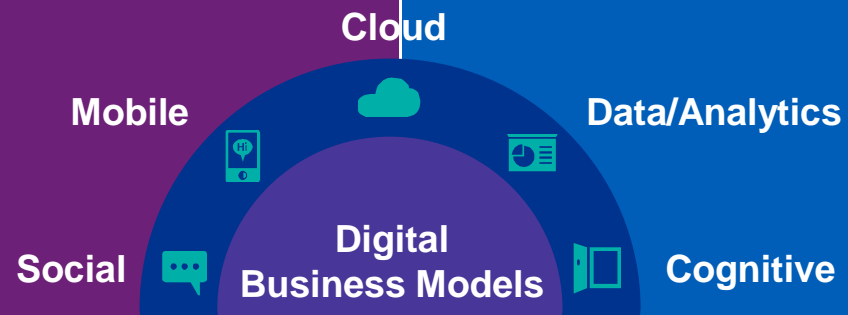
Transformative – new way of doing business



Access to “**rocket scientists**” who can codify manual processes



Revenue/profit **not** correlated to people



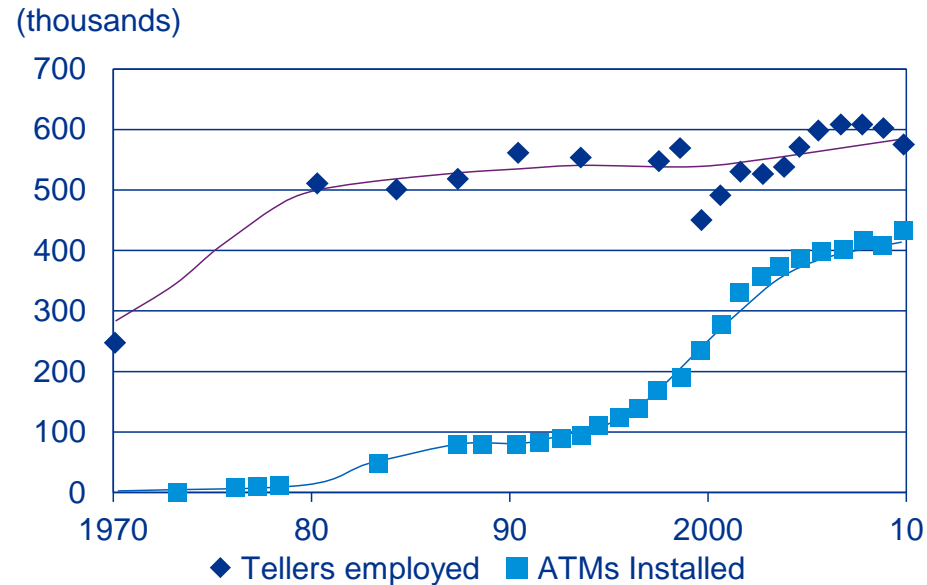
Myth: Digital Labor threatens human labor

As the availability and use of ATMs expanded, one would have expected the number of tellers employed to drop.

Interestingly the number of tellers employed continued to expand.

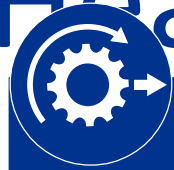
A number of factors could explain this result, including a growth in the number of smaller bank branches, expansion of banking services and products and a change in the traditional role of bank tellers.

Bank tellers vs. ATMs installed, U.S.



Sources: Ruggles and others, Integrated Public Use Microdata Series: Version 5.0; Bureau of Labor Statistics, Occupational Employment Survey; and Bank for International Settlements, Committee on Payment and Settlement Systems, various publications.

The classes of digital labor – Healthcare Providers



Class 1 Basic Process Automation

Automation of entry-level, transactional, rule-based, & repeatable processes. Low investment barrier for significant reward

Key Features	Macro based	Unstructured Data	Natural Language Processing	Knowledge Base	Adaptive Alteration
	✓				
Key Features	Predictive Analytics	Machine Learning	Reasoning	Large-scale Processing	Big Data Analytics

Example: A hospital system used an online scheduling portal for patients. The system verifies eligibility and alerts for referrals or authorizations needed prior to appointments.



Class 2 Enhanced Process Automation

Processing of unstructured data and base knowledge

Key Features	Macro based	Unstructured Data	Natural Language Processing	Knowledge Base	Adaptive Alteration
			✓	✓	✓
Key Features	Predictive Analytics	Machine Learning	Reasoning	Large-scale Processing	Big Data Analytics
		✓		✓	

Example: A provider can use advanced semantic reasoning to allow small balance claims to be processed and resolved by RPA. The system is set to understand the steps to resolve each denial code, will automatically resubmit claims for payment, and escalate to humans if needed



Class 3 Cognitive Automation

Automation driven by self learning and adaptive technologies

Key Features	Macro based	Unstructured Data	Natural Language Processing	Knowledge Base	Adaptive Alteration
			✓	✓	✓
Key Features	Predictive Analytics	Machine Learning	Reasoning	Large-scale Processing	Big Data Analytics
	✓	✓	✓	✓	✓

Example: Health Plans are using language processing, machine learning, pattern recognition and probabilistic reasoning algorithms to aid skilled employees with assessing prior authorization requests before submission

Transformation and Innovation leveraging Automation

Cost Efficiency
Estimated ROI:
40-80% cost take out for relevant functions
1 Automated FTE equivalent to 2-7 FTE
Onshore return: ~10x Offshore return: ~3x

Consistency & Predictability

Software robots do not make inconsistent decisions. They are configured to **solve a problem the same way every time.**

Scalability

Cognitive systems can **learn from top company performers** and quickly transfer learnings to other employees. This knowledge scaling is invaluable.

Transformation and Innovation

Quality & Reliability

Software robots do what you tell them to do. When properly configured they **do not make mistakes** and thereby eliminate human error.

Employee Satisfaction

Eliminating repetitive tasks allows employees to **focus on more profound strategic initiatives**, increasing job satisfaction

Productivity & Performance

Software robots **work 24/7, 365.** They do not take vacations, get sick, suffer from work/life balance, and perform tasks at digital speed.

Auditability

Software robots **keep the perfect audit trail** – a file built by the software that documents every action it took and the corresponding result.



Digital Labor Usecases

- **Demonstration**
– TBD
- **Process
Decomposition**

Key Driver of Revenue Cycle – Account Stratification

# of Accounts	\$ Value of Accounts
1%	35%
20%	80%
80%	20%

- Stratification of accounts is a powerful driver of accounts receivable (A/R) processing in the Revenue Cycle
- Historically, Revenue Cycle performance improvement efforts have focused on the 20% of accounts – for most organizations, this was enough given the 80% of the dollar value.
- As the Revenue Cycle consulting industry has evolved, it is no longer enough to focus only on the higher value accounts

Demonstration



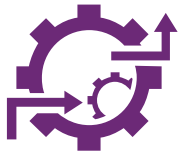
Opportunities for Digital Labor – Other Functions



Many Companies Take These Steps to Get Started



“Size the Prize” – Evaluating processes by suitability for automation and effort to estimate overall benefit potential

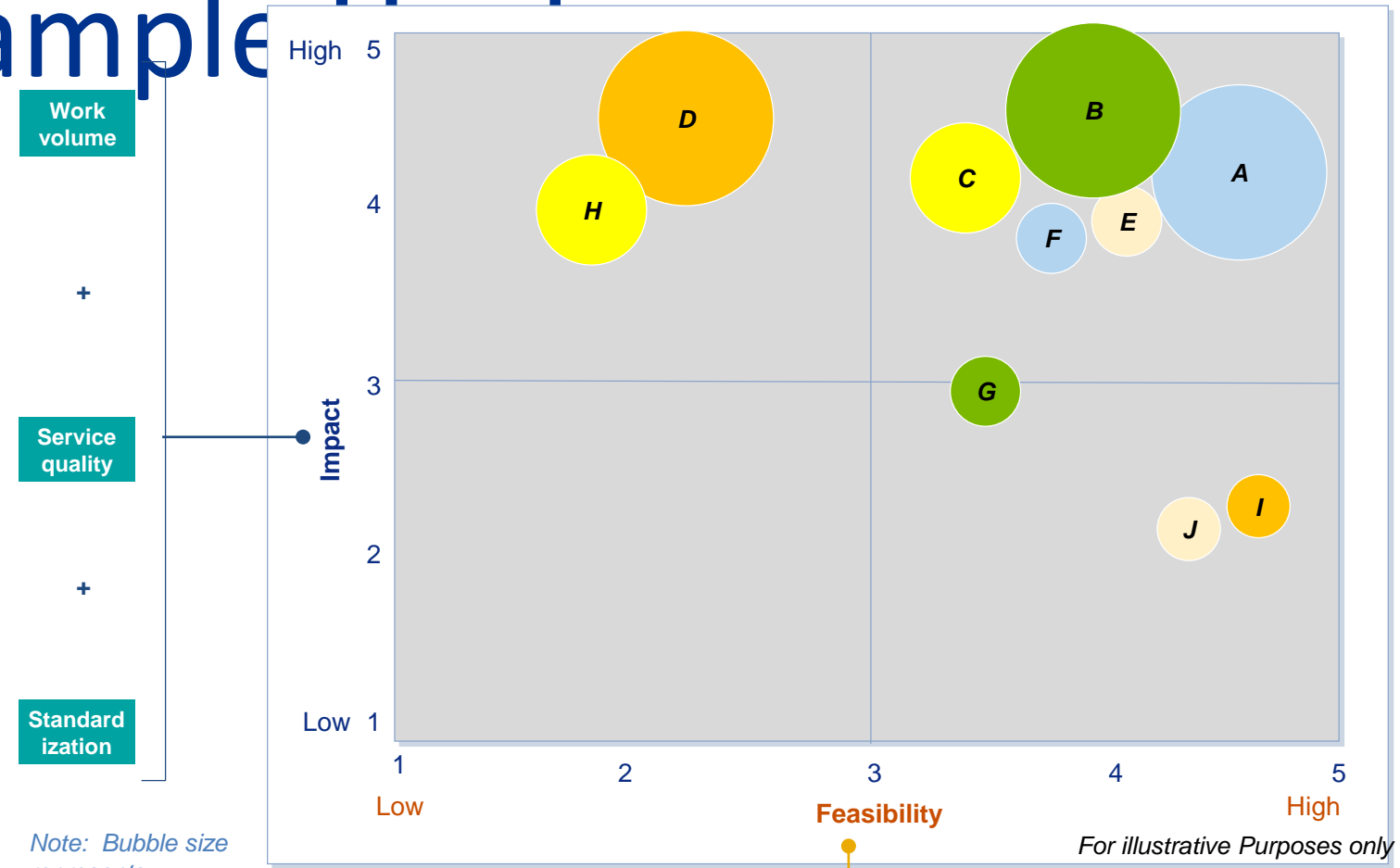


Conduct a Proof-of-Concept – Demonstrating the technology effectiveness and validating performance



Define a Deployment Roadmap – Outlining steps to stand up a Digital Labor capability and begin to capture the benefits

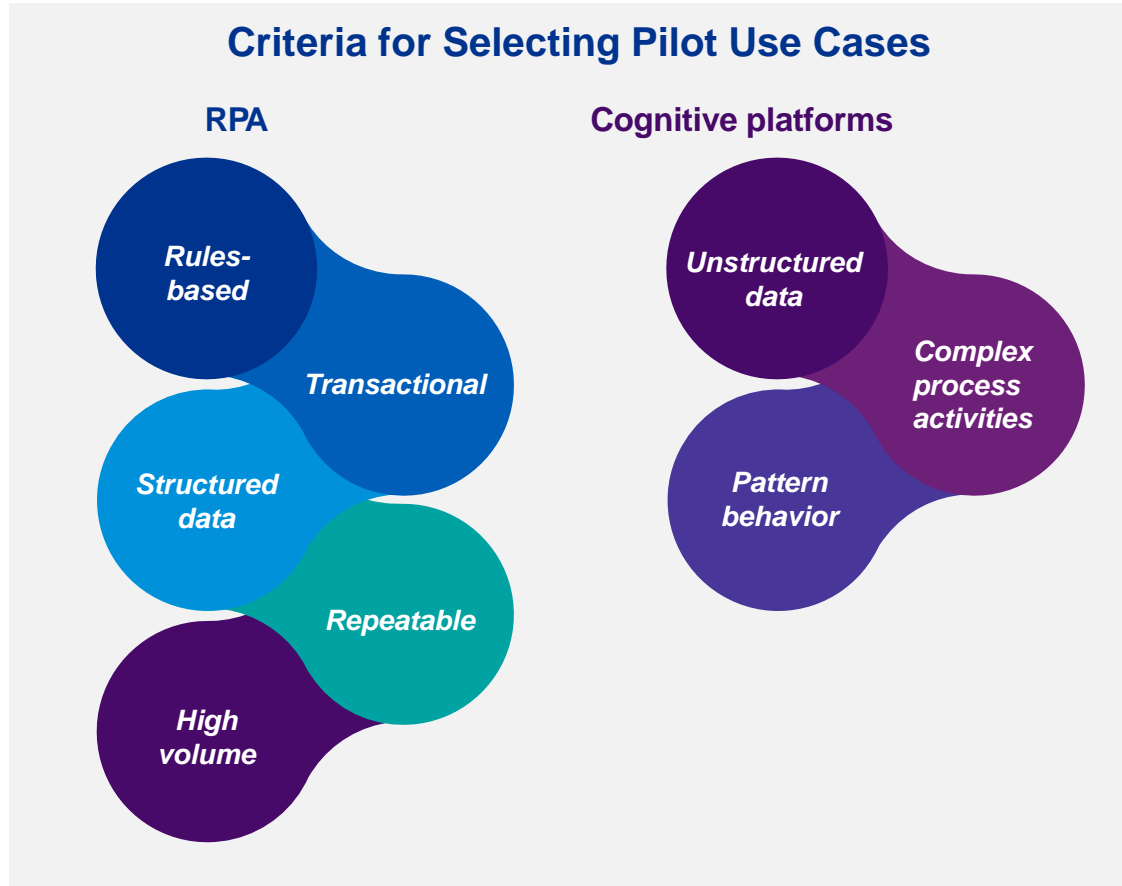
Opportunities for Digital Labor – Sample



Item	Description
A	PA Scheduling Agent
B	Small Balance Claims
C	Procurement Assistan
D	Denials Assistant
E	Credentialing Agent
F	AP Exception Agent
G	IT Help Desk Agent
H	Coding/Doc ME Agent
I	IT Security Agent
J	IT Incident Resolver



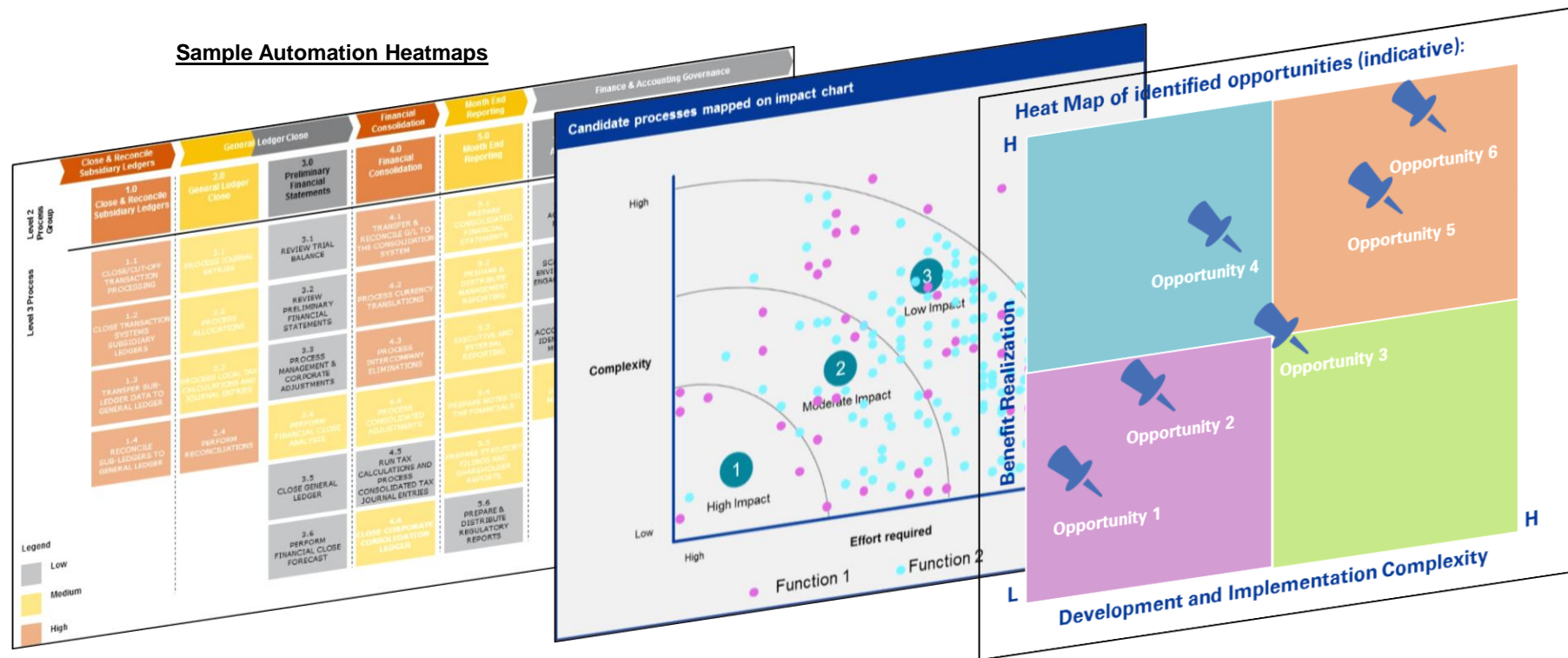
Pilot Idea Discussion



Idea	Description

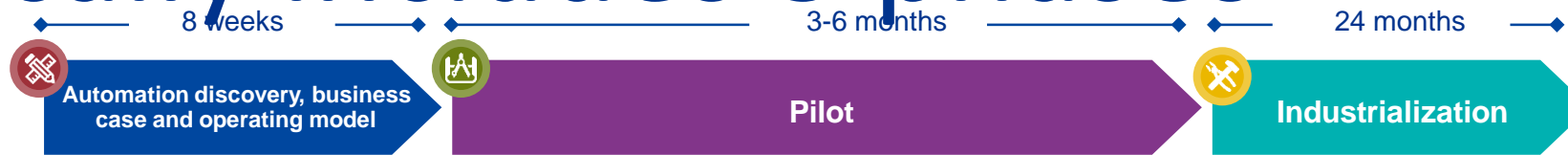
Approach – Opportunity Identification - Continued

Process performance metrics, FTE allocations, time & motion studies, if available are used to develop opportunity heat maps and size of the prize.



A Digital labor transformation typically includes 3 phases

Our approach is part of the full lifecycle methodology to deliver robotics and automation solutions



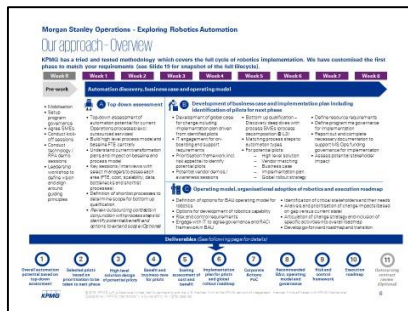
Build

Run

- Finalise the design and requirements based on vendor selection
- Identify solution technical requirements for hardware and software
- Build and/or configuration of the chosen solutions
- Plan and conduct system testing of the solutions
- Plan and conduct Acceptance testing of the solutions

- Roll out solutions to pilot areas
- Conduct user training
- Monitor and gather efficiency metrics
- Identify limitations and improvement
- Design, tweak and delivery changes / improvements to the automation solutions
- Enhance and improve training framework
- Identify required Business Model changes

- Roll out of solutions to remaining Operations areas and production scale
- Implement the required Business Operating Model changes
- Roll out the solutions training to all appropriate Operations areas
- Implement ongoing efficiency monitoring for each solution
- Roll out of ongoing development / improvement programme for solutions



This model is refined and customised further depending on the portfolio of technologies that are being implemented as part of the overall solution.



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