



Championship Revenue Cycle:

Passion & Purpose



## Getting Started with Digital Labor

Thursday, January 18, 2018

Gillette Stadium Clubhouse

Randy Notes  
Principal  
KPMG

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## Agenda

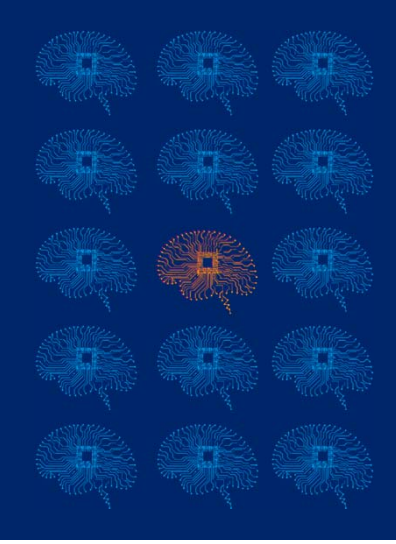
- Digital Labor Overview
- Use Cases in Healthcare and other functions
- Demos



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# 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 a

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

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# Cognitive Technology + Digital Work = Digital Labor



Cognitive Technology  
(aka **Artificial**)  
simulate the way humans perceive, learn,



Digital Work  
is the human task of organizing data and applying human



Digital Labor  
is the valorization of digital work that automate activities and tasks that

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



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# Digital Labor is changing the way business is done

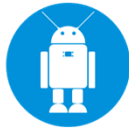
Digital Labor as a label, refers to the broad continuum of technologies that augment human judgment and automate physical tasks.

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

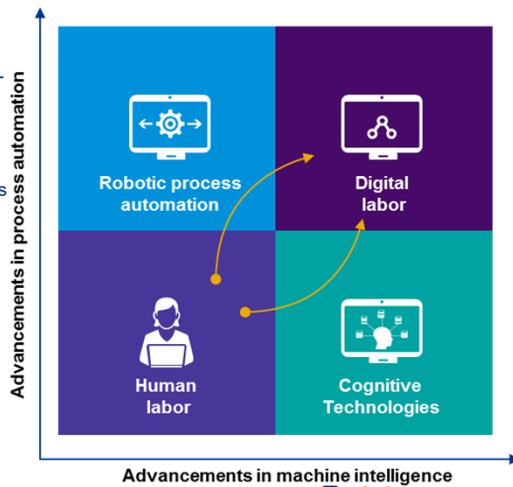


Gartner, predicts that by 2025, 1 of every 3 U.S. jobs will be in a category that has the potential for automation



# 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

-  Cost take out for relevant functions
-  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



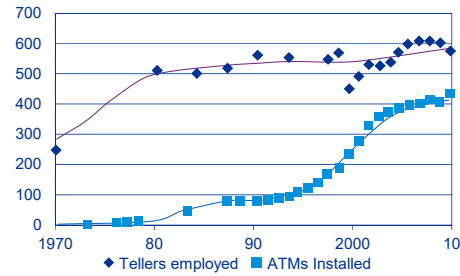


# Myth: Digital Labor threatens human labor

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. (thousands)



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
	✓				
	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
	✓	✓	✓		
	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

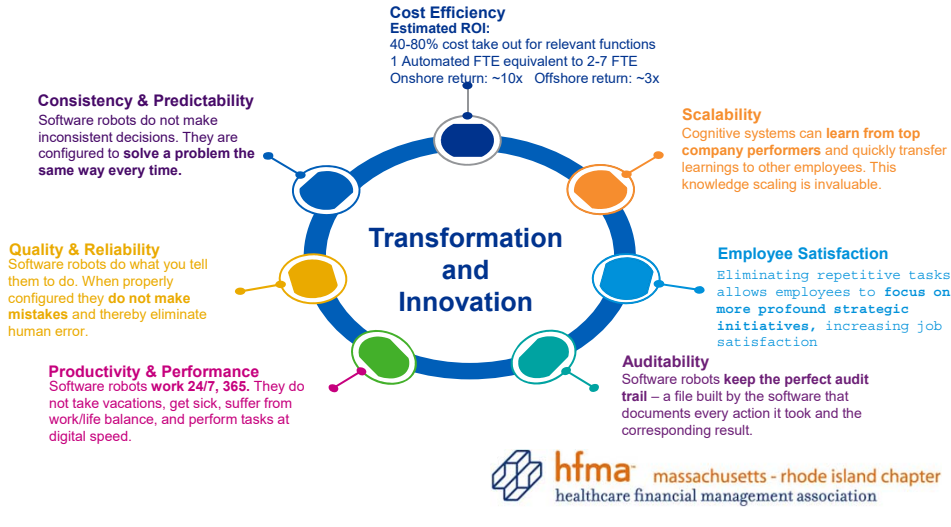
Key Features	Macro based	Unstructured Data	Natural Language Processing	Knowledge Base	Adaptive Alteration
	✓	✓	✓	✓	✓
	Predictive Analytics	Machine Learning	Reasoning	Large-scale Processing	Big Data Analytics
	✓	✓	✓	✓	✓

**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

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# Transformation and Innovation leveraging Automation



## 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

Vendor offer landscape



## Human resources

- Employee on-boarding and off-boarding
- Payroll
- Time recording and compliance
- Repeatable tasks in ERP
- Email notifications
- Populating/aggregating employee information

## Sales and marketing

- NLP enabled analytics
- Social media mining/monitoring
- Predicting high value sales leads
- Manual CRM updates
- Virtual sales agents

## Customer support

- Virtual agents (chat bots)
- Call center "agent assist"
- Task execution

## Finance and accounting

- Month-End reporting
- Invoice processing/exceptions
- AP/AR actions
- Close and reconcile sub-ledgers
- Asset depreciation and impairment
- Fixed asset reporting
- Financial forecasting
- Invoice validation and processing
- Tax filings

## Legal/compliance

- Research/document review
- Document preparation
- Controls automation

## Supply chain

- Order flow through
- Inventory Mgmt.
- Exceptions/fallout

## Procurement

- Process Purchase Order
- Spend Analysis & Report.
- SLA Reporting
- Employee T&E Setup



# 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





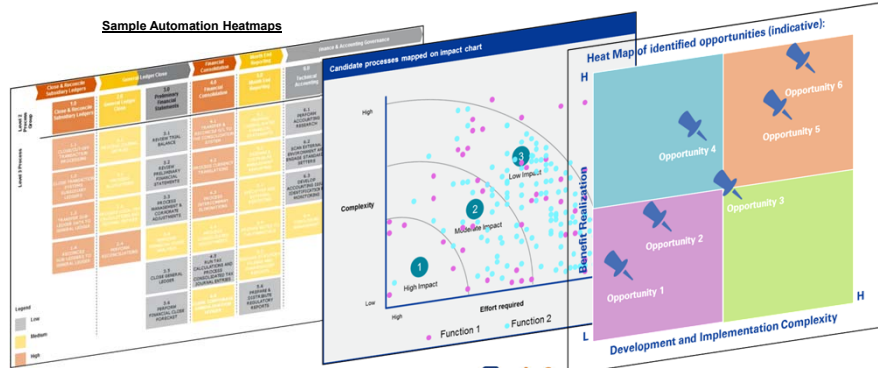
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# Approach - Opportunity Identification - Continued

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

Sample Automation Heatmaps



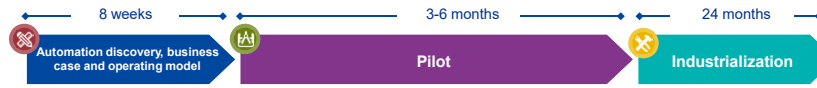
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# A Digital labor transformation typically includes 3 phases

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



- | Build  | Run  |  |
|--|--|--|
| <ul style="list-style-type: none"> <li>Finalise the design and requirements based on vendor selection</li> <li>Identify solution technical requirements for hardware and software</li> <li>Build and/or configuration of the chosen solutions</li> <li>Plan and conduct system testing of the solutions</li> <li>Plan and conduct Acceptance testing of the solutions</li> </ul> | <ul style="list-style-type: none"> <li>Roll out solutions to pilot areas</li> <li>Conduct user training</li> <li>Monitor and gather efficiency metrics</li> <li>Identify limitations and improvement</li> <li>Design, tweak and delivery changes / improvements to the automation solutions</li> <li>Enhance and improve training framework</li> <li>Identify required Business Model changes</li> </ul> | <ul style="list-style-type: none"> <li>Roll out of solutions to remaining Operations areas and production scale</li> <li>Implement the required Business Operating Model changes</li> <li>Roll out the solutions training to all appropriate Operations areas</li> <li>Implement ongoing efficiency monitoring for each solution</li> <li>Roll out of ongoing development / improvement programme for solutions</li> </ul> |

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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# Thank You

