



Mass General Brigham

# Our RPA Journey

*Department of Intelligent Automation (DIA)*

# Agenda

- Who is Mass General Brigham?
- Department of Intelligent Automation (DIA)
  - Mission/Vision
  - DIA Structure
  - Approach to prioritization
  - Build vs. Buy
  - Lessons Learned

# Who is Mass General Brigham?

Mass General Brigham (MGB) is a not-for-profit health care system that is committed to patient care, research, teaching, and service to the community locally and globally.

- Founded in 1994 by Brigham and Women's Hospital and Massachusetts General Hospital, Mass General Brigham consists of 2 Academic Medical Centers, Mass Eye and Ear specialty hospital, 7 community hospitals, 3 rehabilitation hospitals, skilled nursing facilities, home health services, over 6,500 providers, and an insurance company
- Several Entities are Harvard Medical School teaching hospitals
- Largest private employer in Massachusetts with over 75,000 active employees

# Vision/ Mission

## Vision

To expedite delivery of Robotics Process Automation (RPA) capabilities while simultaneously managing risk and implementing a “best practices” approach.

Investing in our workforce by training employees to become developers in this new technology throughout Mass General Brigham.

Develop automations to help improve workflow by removing the repetitive, high-volume tasks, and freeing up our employees to focus on more interesting, creative aspects of their work.

## Mission

Integrate a scalable Robotic Process Automation (RPA) solution to achieve improved efficiency, accuracy and cost savings.



# Intelligent Automation Spectrum

RPA is **class 1** technology – Intelligent Automation encompasses a full spectrum of modern automation technologies from rules-based Class 1 automation to cognitive automation that thinks like a human.

# ACT

like a human



*Class 1*  
**RULES**

**Basic process automation**

- ✓ Macro-based applets
- ✓ Screen level and OCR data collection
- ✓ Workflow automation
- ✓ Process mapping
- ✓ Self executing

*Class 2*  
**LEARN**

**Enhanced automation**

- ✓ Built-in knowledge repository
- ✓ Learning capabilities
- ✓ Ability to work with unstructured data
- ✓ Pattern recognition
- ✓ Reading source data manuals
- ✓ Natural language processing

*Class 3*  
**REASON**

**Cognitive automation**

- ✓ Artificial intelligence
- ✓ Natural language recognition and processing
- ✓ Self-learning (sometimes self optimizing)
- ✓ Processing of super data sets
- ✓ Predictive analytics/hypothesis generation
- ✓ Evidence-based learning






# THINK

like a human



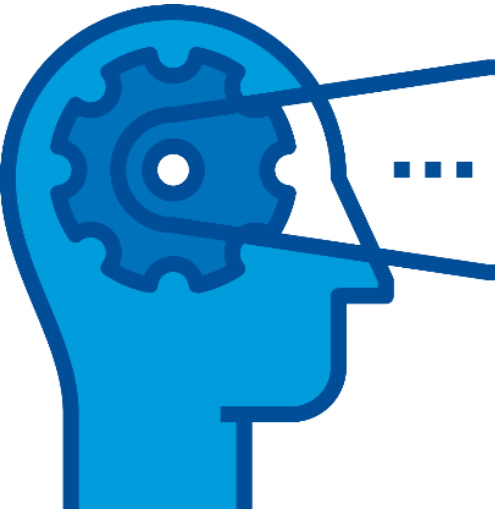
# Benefits of Robotics Process Automation (RPA)

Automation benefits transactional business processes in the following key ways:

 Privacy and compliance	 Quality and accuracy	 Process improvement and efficiency	 Speed	 Employee satisfaction
<ul style="list-style-type: none"> <li>— Reduce error in transactional tasks</li> <li>— Increase security and governance tasks</li> <li>— Limits exposure to sensitive data</li> <li>— Monitors regulatory environments</li> </ul>	<ul style="list-style-type: none"> <li>— Detects poor data integrity</li> <li>— Deploy new “no-labor” data integrity routines</li> <li>— Reduce the need for re-work</li> <li>— Fully auditable</li> </ul>	<ul style="list-style-type: none"> <li>— Lower cost and speed of implementation</li> <li>— Non-invasive, can work with existing IT systems</li> <li>— Can perform tasks 365 days a year at 24/7 availability</li> <li>— Enables standardization of processes</li> </ul>	<ul style="list-style-type: none"> <li>— Leverage digitized process data to increase the speed and accuracy of service delivery</li> <li>— Accelerate completion rates of certain tasks</li> <li>— Rapidly scale up/down operations</li> <li>— Respond quickly to regulatory and policy changes</li> </ul>	<ul style="list-style-type: none"> <li>— Enable resources to focus on higher-level, higher value-add activities</li> <li>— Reduce amount of repetitive, administrative tasks</li> <li>— Automation tools can be employees’ personal assistants</li> </ul>

# Key considerations for identifying automation opportunities

Below is a list of questions to consider when brainstorming candidates for automation.



- Is the process/task highly manual and repetitive?
- Is the process/task prone to errors or re-work?
- Does the process/task require "stare and compare" activities with multiple systems?
- Does the process/task require "copy and paste" activities between multiple systems?
- Does the process/task require "swivel-chair" navigation of multiple screens? (e.g., using several different systems to complete the process)
- Does the process/task require searching, collating, researching and/or updating information?
- Can the process/task be decomposed into unambiguous rules?
- Is the technology/application environment relatively stable for the process in question?
- Does the process involve complex calculations and/or logic (judgment based decisions)?
- Is there extensive internal company knowledge needed to process the transaction?

# Approach to prioritizing automation opportunities

Intelligent Automation Opportunity		Automation Fit						Implementation Effort					Augmented Hours				Additional Value Levers								
Opportunity Name	Opportunity Description	Weighted Score	Weighted Score	Weighted Score	Weighted Score	Weighted Score	Weighted Score	Weighted Score	Weighted Score	Weighted Score	Weighted Score	Weighted Score	Weighted Score	Weighted Score	Weighted Score	Weighted Score	Weighted Score	Weighted Score	Weighted Score	Weighted Score	Weighted Score	Weighted Score	Weighted Score	Weighted Score	
HR21	Expand License to E-Place	5	5	5	5	4	5	4.85	5	5	4	5	5	4.90	Annual	1	109.18	95%	497	1	5	5	5	3.80	Note: 4.8 Multiplier - Average Check per License

Scored process candidates can be catalogued and managed for detailed assessment and implementation.

## Automation Candidates

- List of automation opportunity candidates
- Description of the opportunity

## Automation Fit

- Measures how good an opportunity is for a basic automation solution
- Set of six attributes to determine fit for each opportunity

## Implementation Effort

- Measures the effort required to implement the automation solution
- Five attributes to help evaluate the effort needed

## Augmented Hours

- Measures the potential capacity in hours that employees can direct towards other strategic tasks
- Set of four data points to help determine the gain that can be achieved through automation

## Additional Value Levers

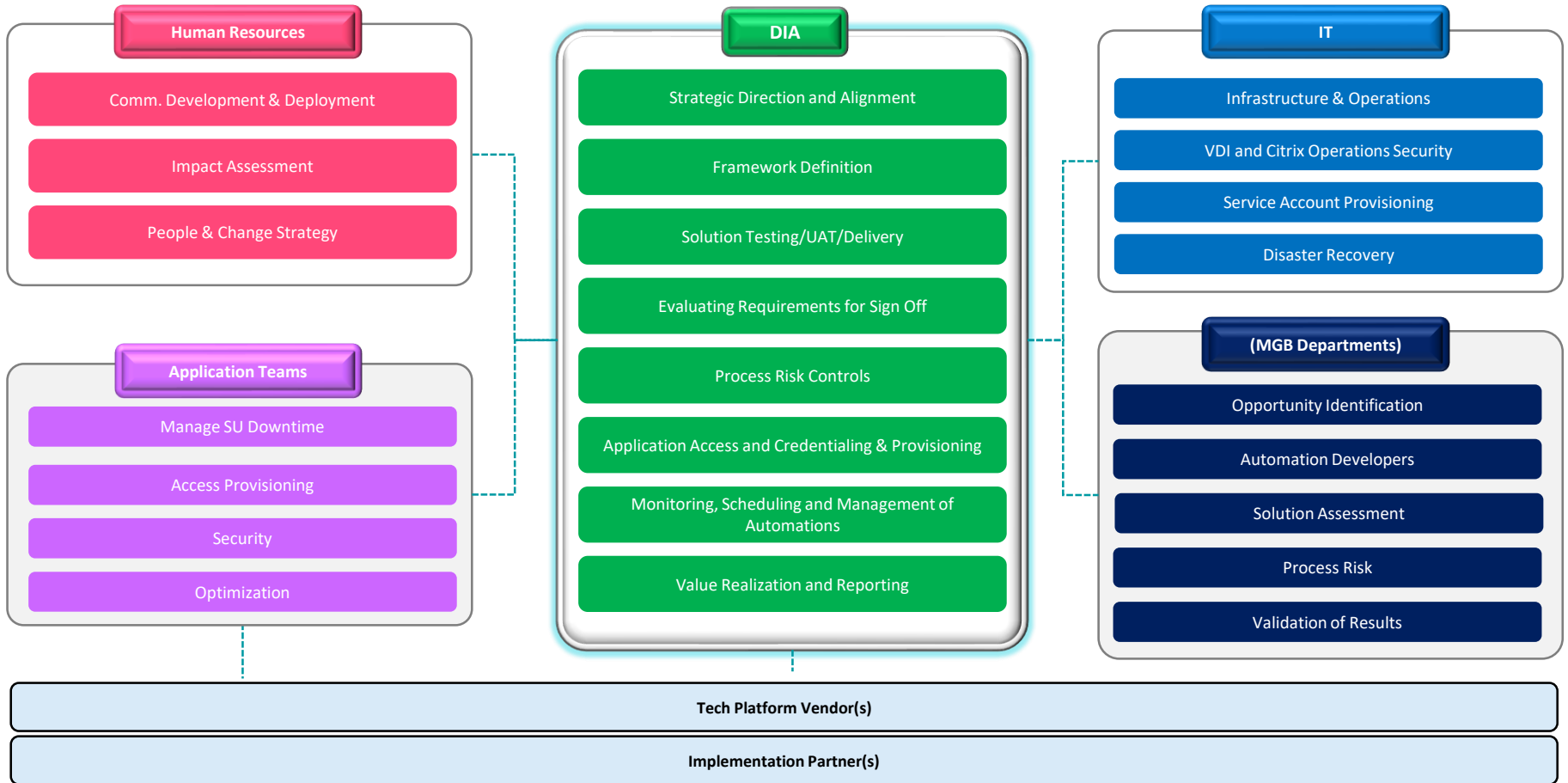
- Measures the additional value of each opportunity besides saved hours
- Set of four data points to help determine the additional value that can be achieved through automation





# Department of Intelligent Automation Org Chart

The DIA will provide core resources and will coordinate with multiple areas to enable the success of the Intelligent Automation program



# Build vs. Buy

## Key points to consider:

- MGB has used both Contractors, Internal Resources, and External partners to build RPA processes
- In our experience the build process has been easier for departments and the COE to manage
- Consultants have been useful to help departments “Think” like an automation
- Expertise can be brought in for tougher builds as needed
- Access to systems for outsider contractors a challenge
- In house knowledgebase has allowed for faster development
- Depending on how you structure-cost could decide the approach

## Build

IP ownership

Reuse of Objects

Release Control

IS Support

Cost

## Buy

Build Time

On Boarding

Maintenance

Upgrades

Cost

# Automation Examples:

Currently have 25 automations live in 9 departments

Federal and State Tax Payments

Licensure Verification

Cost Reporting

Research Award Set Up

Direct Cost Reconciliation

Travel Auditing

Leverage additional technology (OCR, ML, or AI) to augment or enhance RPA processes where there is unstructured data

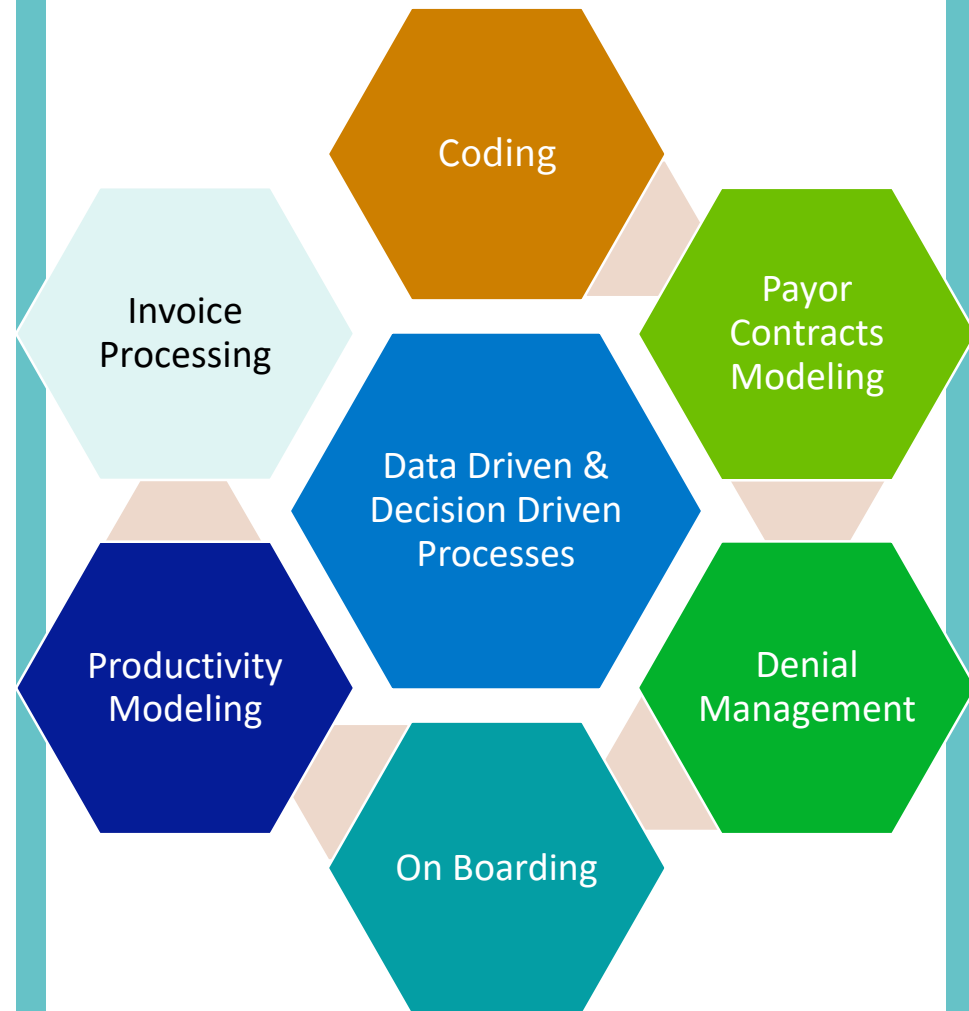
Utilize Natural Language processing to create chatbots to interact with patients or employees.

Enhanced OCR with ML could augment many legal/document review processes

Facial recognition software could be utilized to register new employees or visitors in our facilities.

AI could further enhance the patient experience creating a more seamless discharge experience.

## What Does The Future Look Like?



# Mass General Brigham Approach to Intelligent Automation

## LESSONS LEARNED

- There were many lessons in our RPA journey but most importantly our “bots” can automate tasks that are repetitive and have structured data
  - The IT/Application team(s) interaction is significant
  - Automations will need to be maintained as systems get upgraded/change
- RPA Development requires detailed understanding of workflow and subject matter experts input is essential
- Data driven decisions will find new opportunities in the future.
- Some workflows need process redesign, not automation; need to partner with the PI team
- Workflows selected included mind-numbing work and employees celebrated the automation
- Humans are still required! While RPA automates routine tasks and creates capacity, we can't teach RPA how healthcare works
- HR plays a key role in workforce planning, training, redeployment and communication



**Mass General Brigham**