RPA and AI – The Power of Two

Sarah Burnett
March 2018
Everest Group is a leading global services research and advisory firm

### Range of services

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consulting and research services to turn insights into decisions</td>
<td>Consulting services to capture value from decisions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Syndicated Research</th>
<th>Custom Decision-support Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research reports, data sets, customized tracking services, analyst inquiries, thought partnering</td>
<td>Market-facing thought leadership, webinars, research-driven strategic market studies, competitive assessments</td>
</tr>
</tbody>
</table>

**Everest Group**

Research has served

- **137** unique service provider clients
- **115** unique enterprise clients in the past 2 years

**Everest Group 25 years**

- Ongoing coverage of 120 functions across SPS and IT&S
- 44 global cities
- 200+ global clients
- 150+ service providers
- 207 employees

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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

Source: DeepDive | Everest Group
Among the various next-generation technology levers in global services, Service Delivery Automation (SDA) is the most powerful.
RPA and AI are the key components of SDA with different approaches to solve business problems

<table>
<thead>
<tr>
<th>Robotic Process Automation (RPA)</th>
<th>Cognitive / AI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mimics a user’s activities – non-invasive approach to system integration</td>
<td>Mimics human thought process through vision,</td>
</tr>
<tr>
<td></td>
<td>language, and pattern detection</td>
</tr>
<tr>
<td>Can process structured and some semi-structured data</td>
<td>Can process structured, semi-structured, and</td>
</tr>
<tr>
<td></td>
<td>unstructured data</td>
</tr>
<tr>
<td>Highly rules-based; No learning capabilities</td>
<td>Can “learn” or change its behavior over time</td>
</tr>
<tr>
<td></td>
<td>Probabilistic but can have safeguards to make it</td>
</tr>
<tr>
<td></td>
<td>deterministic</td>
</tr>
<tr>
<td></td>
<td>Point solutions for specific requirements</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Bridges the gap between enterprise systems</td>
<td></td>
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</table>
RPA Frees people from boring repetitive tasks

Why am I the one who has to do all the boring jobs?
Narrow Artificial Intelligence comprises multiple technologies and capabilities

<table>
<thead>
<tr>
<th>Narrow Artificial intelligence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Artificial Intelligence is the ability of machines to exhibit human-like intelligence</td>
</tr>
<tr>
<td>Narrow AI refers to a machine which performs one “narrow” task as opposed to general AI, which seeks to perform any intellectual task that a human being can do. Currently, narrow AI has shown business applicability, whereas general AI continues to be a theoretical concept</td>
</tr>
</tbody>
</table>

Examples of AI enabling technologies:

- **Natural Language Processing (NLP)**
- **Computer vision**
- **Machine learning / deep learning**

<table>
<thead>
<tr>
<th>Cognitive computing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refers to computing that is focused on reasoning and understanding at a higher level, often in a manner that is analogous to human cognition</td>
</tr>
<tr>
<td>Typically, it deals with symbolic and conceptual information with the aim of making high-level decisions in complex situations</td>
</tr>
</tbody>
</table>
AI technologies are often combined to have more advanced applications that are making inroads into global services

Applications of some key AI technologies/capabilities

- **Deep learning**
  - Computer vision
    - Video analytics
    - Gesture recognition
    - Image/facial recognition
    - Biometrics identity
  - Cognitive computing
    - Virtual agent / assistant / chatbots
    - Cognitive automation bots
  - Natural Language Processing
    - Semantics/ontology
    - Text analytics
    - Document processing
    - Speech recognition
  - Machine learning (ML)

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The last decade saw several developments that led toward acceptance and democratization of AI through...

- Large companies such as Apple, Google, Facebook, Microsoft, and IBM developing their own AI-based products and raising the possibilities of its acceptance by organizations.
- Large volumes of data (which is the premise of AI) becoming available for analyses through digitization of business and commerce, as well as the Internet and social media.
- Narrow AI becoming a consumable product due to the pervasiveness of technology (such as cloud infrastructure and open source platforms) and as-a-service offerings.
- Corporations starting to look for intelligent automation which would be capable of self-learning and decision-making.
- AI-embedded devices becoming accessible to end-consumers (such as launch of Siri, an AI-based personal assistant that came with smart phones).

This market is now increasingly pushing the boundaries of development and adoption amidst the misconceptions and fears about narrow AI replacing humans.
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 AI software market for global services is exhibiting high growth and is expected to further accelerate in the future.

AI ISV market size and growth¹
2016-2020(E); US$ billion

- **2016**: 1.2-1.6
- **2017E**: 2.0-2.4
- **2020E**: 8.1-8.5

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)
With chatbots, the contact center market offers good opportunities for adoption of AI-enabled technologies given the growth of non-voice channels ....

CCO revenue across channels over time

<table>
<thead>
<tr>
<th>Channel</th>
<th>2012</th>
<th>2014</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voice</td>
<td>88%</td>
<td>84%</td>
<td>78%</td>
</tr>
<tr>
<td>Non-voice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social media</td>
<td>1%</td>
<td>3%</td>
<td>4%</td>
</tr>
<tr>
<td>Chat</td>
<td>3%</td>
<td>3%</td>
<td>4%</td>
</tr>
<tr>
<td>Email</td>
<td>8%</td>
<td>9%</td>
<td>9%</td>
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CAGR (2012-2016)
- 19%
- 34%
- 5%
- 3%
When combined together, RPA and AI create a smart digital workforce and can lead to end-to-end process automation

<table>
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<tr>
<th>Digital workforce</th>
<th>Activity</th>
<th>SDA solution</th>
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<tbody>
<tr>
<td><strong>Chatbots</strong></td>
<td>Identifying the intent and resolving customer enquiries in natural language over voice or text</td>
<td>Cognitive/Al</td>
</tr>
<tr>
<td><strong>Agent-assist robots</strong></td>
<td>Automating various applications on agent’s desktop or virtual applications and learning from past customer interactions to suggest the next best action</td>
<td>Cognitive/Al</td>
</tr>
<tr>
<td><strong>Data entry robots</strong></td>
<td>Gathering data from structured or unstructured documents and entering into systems</td>
<td>Cognitive/Al</td>
</tr>
<tr>
<td><strong>Copy-paste robots</strong></td>
<td>Executing rules-based processes involving copying data from one application to another</td>
<td>Cognitive/Al</td>
</tr>
<tr>
<td><strong>Reconciliation robots</strong></td>
<td>Matching transactions across disparate systems</td>
<td>Cognitive/Al</td>
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Smart workforce is leveraged for digital transformation of business operations

Customer

Address update request
Omni-channel customer touchpoints

Chatbot

Relevant information is passed on to appropriate back-office robots

RPA robot

Updates customer information in enterprise database

ERP 1
ERP 2
ERP 3

Customer receives confirmation

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**: Omni-channel Customer touchpoints
  - Address update request

- **Chatbots**: Sends confirmation to customer

- **Agent-assist robots**: 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

- **RPA robots**: Updates customer information in enterprise database

- **ERP 1**, **ERP 2**, **ERP 3**: 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 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
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

BPM / Workflow

Smart workforce

Chatbots  Human agents  Agent-assist robots  RPA robots  Cognitive robots