The Future of Work – Next Generation Automation

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Introductions

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Achieving impact at scale
Next Generation Automation will dramatically reshape the global economy with half of the tasks people perform today already automatable using existing technologies.

- **$14.6 Trillion in annual wages**
  - Potential global impact of automation by adapting currently demonstrated technology

- **1.2 Billion workers could be affected**

- **50%** of activities individuals are paid for can be automated by currently available technology, additional **10-15%** will be automatable in the near future as technology continues advancing.

SOURCE: McKinsey analysis
There is 30-50% of automation potential across numerous industries.

<table>
<thead>
<tr>
<th>Industry</th>
<th>FTE Weighted Percent of Technically Automatable Activities by Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodation/food Services</td>
<td>64</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>60</td>
</tr>
<tr>
<td>Agriculture, forestry, fishing and hunting</td>
<td>56</td>
</tr>
<tr>
<td>Transportation/warehousing</td>
<td>55</td>
</tr>
<tr>
<td>Retail trade</td>
<td>52</td>
</tr>
<tr>
<td>Mining</td>
<td>50</td>
</tr>
<tr>
<td>Other services</td>
<td>49</td>
</tr>
<tr>
<td>Construction</td>
<td>48</td>
</tr>
<tr>
<td>Utilities</td>
<td>46</td>
</tr>
<tr>
<td>Wholesale trade</td>
<td>43</td>
</tr>
<tr>
<td>Finance/insurance</td>
<td>43</td>
</tr>
<tr>
<td>Administrative/support/waste management</td>
<td>40</td>
</tr>
<tr>
<td>Real estate/rental and leasing</td>
<td>40</td>
</tr>
<tr>
<td>Arts/entertainment/recreation</td>
<td>39</td>
</tr>
<tr>
<td>Federal, state, and local government</td>
<td>36</td>
</tr>
<tr>
<td>Information</td>
<td>35</td>
</tr>
<tr>
<td>Health care/social assistance</td>
<td>35</td>
</tr>
<tr>
<td>Professional, scientific, and technical services</td>
<td>35</td>
</tr>
<tr>
<td>Management of companies/enterprises</td>
<td>34</td>
</tr>
<tr>
<td>Educational services</td>
<td>24</td>
</tr>
</tbody>
</table>

1. We define automation potential by the work activities that can be automated by adapting currently demonstrated technology.

SOURCE: BLS 2014; O*Net; Global Automation Impact Model; McKinsey analysis.
However, the majority of efforts are focused on customer-facing processes and not on capturing the 30% saving possible in back-office automation.

1 Based on MGI assessment of automation potential where 90% of Fully Automatable, 60% of Highly Automatable, 30% of Somewhat Automatable, and 0% of Difficult to Automate tasks were included as Technically Automatable.
Next Generation Automation programs are enabled through a portfolio of five types of technologies:

- **Robotic process automation**: Automate routine tasks through existing user interfaces (e.g., data extraction and cleaning).
- **Smart workflows**: Integrate tasks performed by groups of humans and machines (e.g., month end processes).
- **Machine learning**: Identify patterns in data through supervised and unsupervised learning (e.g., decision algorithms).
- **Natural language generation**: Synthesize textual content by combining data and analytic output with contextualized narratives (e.g., data to story translation).
- **Cognitive agents**: Build a virtual workforce capable of supporting employees and customers (e.g., employee service centers).

**Sources:** McKinsey Corporate and Business Functions Practice; Company Websites
Next Generation Automation tools mimic all human capabilities involved in day-to-day work activities.

**Cognitive capabilities**
- Recognizing known patterns/categories (supervised learning)
- Generating novel patterns/categories
- Logical reasoning/problem solving
- Optimization and planning
- Creativity
- Information retrieval
- Coordination with multiple agents
- Output articulation/presentation
- Natural language generation
- Natural language understanding

**Social and emotional capabilities**
- Social and emotional sensing
- Social and emotional reasoning
- Emotional and social output

**Physical capabilities**
- Fine motor skills/dexterity
- Gross motor skills
- Navigation
- Mobility

**Sensory perception**
- Sensory perception

SOURCE: McKinsey analysis
Most automation focuses on client-facing processes, leaving > 50% of the bank's FTEs in the back office largely untouched.

**Distribution of FTE across business area and function, percent**

- **Customer-facing sales and E2E processes**
  - Retail and wealth: 20%
  - Commercial: 12%
  - Wholesale: 9%
  - Insurance: 9%
  - Utility functions: 92%

- **Main E2E processes**
  - 51%

- **Other back-office processes**
  - 75%
  - 13%
  - 36%
  - 13%
  - 12%

- **Internal support functions**
  - 12%
  - 5%
  - 24%
  - 8%
  - 8%

**SOURCE:** McKinsey team analysis at large universal bank
Next Generation Automation technology focuses on untapped opportunities in the “long tail” of automation

The ‘long tail of automation’ potential

- Managed by Digital/IT team
  - Typical scope of Digital/STP/BPM
- Managed by Operations teams with light IT governance
  - Typical scope of Rapid Process Automation (Lean + Robotics)

- Rapid process automation integrates Lean and Robotic Process Automation to address the long tail of automation potential.
- The approach is ideally suited to back-office environments with repetitive operational processes.
Over half of the tasks in the back office can be fully or mostly automated

Potential for automation
Percent of tasks

- Fully automatable: No human intervention
- Mostly automatable: Most work managed by technology
- Somewhat automatable: Most work managed by humans
- Difficult to automate: Few technology applications
- Total tasks: 100%

Where IPA can help drive automation at scale
Focus of traditional automation efforts

Record to Report
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There are a number of automation use cases that are common across organizations

### Back-office operations

**Accounting Services**
- Automating complex journal entries
- Performing and documenting account reconciliations
- Calculating and applying allocations
- Maintaining fixed asset accounts

**Reporting Services**
- Building standard management reports
- Creating and distributing budget templates
- Preparing preliminary monthly forecasts
- Drafting first pass results commentary

**Sourcing Operations**
- Entering non-EDI invoices
- Performing 2/3 way invoice matches
- Processing expense approval requests
- Completing audits (e.g., duplicate supplier payments)

**HR Services**
- Flagging time sheet errors and omissions
- Auditing reported hours against scheduled hours
- Calculating deductions
- Merging data across multiple time keeping systems

### Technology

**Application Development**
- Managing source code
- Performing unit and regression testing
- Executing release process
- Monitoring application logs
- Testing security and performance

**Application Maintenance**
- Closing basic tickets (e.g., password resets)
- Performing batch restarts
- Monitoring application performance and health
- Producing standard reports (e.g., SLAs)
- Optimizing resource utilization

**NOT EXHAUSTIVE**
In each industry, there are opportunities to automate across the value chain

**Banking Example**

- **ANZ** used robotics transformation at scale across functions, reducing cost 40+% per process and delivery time, e.g.
  - Full automation of **home loan progress payments process**
  - Automation of **semi-annual audit report**, pulling data from 13-14 different systems

<table>
<thead>
<tr>
<th>Payments processing (e.g., CHAPS payments)</th>
<th>Account opening/ closures (e.g., automated personal account closure)</th>
<th>Report generation (e.g., audit and compliance reporting)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product/service development</strong></td>
<td><strong>Marketing and sales</strong></td>
<td><strong>IT</strong></td>
</tr>
<tr>
<td><strong>Service Operations</strong></td>
<td></td>
<td><strong>Finance and MIS</strong></td>
</tr>
<tr>
<td><strong>Excess queue processing</strong></td>
<td>Data migration (e.g., from legacy to new systems)</td>
<td><strong>Risk mgmt</strong></td>
</tr>
<tr>
<td><strong>Fraud detection and recovery/refund processing</strong></td>
<td>Financial processes (e.g., accounts payable/receivable, reconciliation of matching errors)</td>
<td><strong>HR and Org</strong></td>
</tr>
</tbody>
</table>

- **The co-operative bank** used robotics transformations in several processes – improved customer service and reduced costs, e.g.,
  - 80% reduction in processing costs in **excess queue procedure**
  - **CHAPS process** now 20 sec. vs. 10 min.

- **BN Bank** use robotics transformations for **data migration**, as well as **loan and payment processing**, and **opening/ closing bank accounts**

- **BARCLAYS** used robotics transformations in bad debt provision in the **accounts receivable** function, resulting in £175 million p.a. reduction and over 120 FTE saved

SOURCE: McKinsey, press search
Example: account closing process

Original process

1. Login to service tickets portal
2. Filter by account closing requests
3. Copy customer account number from request
4. Follow account closing procedures, apply reason code, close acct features
5. Add specific text in the notes section, and close account
6. Mark ticket as closed

Redesigned process

1. Login to CRM portal
2. Filter by account closing requests
3. Copy customer account number from request
4. Search for customer based on account number
5. Expand customer relationship & pick the right account
6. Follow account closing procedures, apply reason code, close acct features
7. Add specific text in the notes section, and close account
8. Mark ticket as closed & hand off exceptions to agent

Manual step

Automated step

Approach

Used RPA to eliminate “swivel chair” work between CRM and account management systems

Workflow developed by Finance person with ~6 weeks of RPA experience

Build time: ~3 days

Impact

100% of process tasks automated

75% of total process hours reduced

Employees now need to handle only exception cases (<5%)
Robotics Process Automation
Several large players are advancing with automation, especially in back-office/CBF functions (1/2)

<table>
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<th>Company</th>
<th>Examples of RPA deployed</th>
<th>Impact</th>
</tr>
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</table>
| Shell            | ▪ Used 70 global hubs to control its **financial closure process** across 650 legal entities and required a total of 5,000 people  
                   ▪ Closing and analyzing the books **took 15 days** and **accuracy checks were inefficient**  
                   ▪ **RPA** tool and SAP’s Financial Closing cockpit used to automate and coordinate close  
                   ▪ Automated 15 core processes, which represent 35% of back office (BO) transaction: e.g. SIM swaps, credit checks, order processing, customer reassignment, unlatching, porting, ID generation, etc.  
                   ▪ Set-up **75 robots in two years**  
                   ▪ Set-up in house RPA team who could lead end to end automation                                                                                       | ▪ **Cut 4 days off** its close, improved close quality and reduced FTE’s effort  
                   ▪ By the time the rollout is complete, Shell will have over **10 000 closing tasks automated**                                                                 |
| O₂               | ▪ Key processes automated: customer billing, meter, account, consumption management, etc.                                                                                                                                  | ▪ 160 robots processing **400-500 thousands transactions per month**  
                   ▪ Three years **ROI 650-800%**  
                   ▪ Examples: **BO processes** performed by 450 people instead of 600 2 years ago; **50 job equivalents** moved back to UK and managed by 10 robots and 10 people; **reduced FTE in front office as a result of better services, e.g. less calls**                                                                 |
| npower          | ▪ 250 roles replaced by 110 robots, managed by 11 people                                                                                                                                                                     | SOURCE: Outsourcing Unit, Blue Prism web site, companies websites                         |
Several large players are advancing with automation, especially in back-office/CBF functions (2/2)

<table>
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<th>Examples of RPA deployed</th>
<th>Impact</th>
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</table>
| ▪ Opened Healthcare RPA CoE in Hyderabad, India.  
  ▪ Within healthcare the RPA applied to coding, data entry, customer care, credentialing, claims processing, revenue cycle management, etc | ▪ Benefits examples for selected clients:                                                                 |
|                              | ▪ Processes transformed with RPA: account closures, direct debit cancellations, and audit reports, the exec queue procedure | ▪ 250 FTEs replaced by 110 robots and 11 people running robots |
|                              | ▪ Adopted by Xchanging insurance business  
  ▪ Examples of the robotized processes  
    ▪ validation and creation of London Premium Advice Notes (LPAN)  
    ▪ E-Policies  
  ▪ RPA initiative led by 20 people of operations team | ▪ Examples of additional benefits - the excess queue procedure:                                                                 |
|                              |                                                                                           | ▪ completed by 11am instead of 3pm  
  ▪ run by 2 FTEs, instead of 11  
  ▪ released capacity to work on proactive customer management |

SOURCE: Outsourcing Unit, Blue Prism web site, companies websites
We have seen automation drive significant efficiency, quality and service level benefits – €20bn of G&A impact generated to date

**Significant cost reductions in cost and increases in EBITDA/cash flow**

<table>
<thead>
<tr>
<th>Percent of companies</th>
<th>Percent cost reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>&lt;10</td>
</tr>
<tr>
<td>28</td>
<td>10-20</td>
</tr>
<tr>
<td>42</td>
<td>20-30</td>
</tr>
<tr>
<td>18</td>
<td>30-40</td>
</tr>
<tr>
<td>5</td>
<td>&gt;40</td>
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</tbody>
</table>

Mean = 25%

**Substantial improvements in effectiveness – Finance function examples**

- **Cash flow impact**
  - Reduced A/R by 20%
  - Reduced bad debt reduction by 50% (“lean collections”)

- **Reduced rework and cycle times**
  - Reduced closing cycle time by 50% and faster availability of information to business
  - Reduced P2P cycle time by 30% and generated €20 million in supplier discounts

- **Streamlined decision making**
  - Streamlined FP&A at regional hubs to enable faster and higher quality decision making for BUs

SOURCE: McKinsey Corporate & Business Functions (CBF) practice
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Case examples
Achieving impact at scale
Several factors are holding companies back from delivering impact from automation at scale

What we are hearing

- 10+ workflows held up in development approval with IT
- Scrapped cognitive agents initiative after 9+ months
- 155 bots and 1 FTE of savings
- $50M+ lost because didn’t think through IT integration
- 40+ RPA developers and < 5 bots

Commons pitfalls

- **Tool proliferation** making it impossible to navigate the thousands of tools and vendors
- Pursuing “small potato” quick wins and missing the bigger automation opportunity
- **Low and ethereal returns** Inability to translate activity into P&L impact
- **Automation-phobia** Overcoming employee concerns about job losses from automation
- **IT fallacy** Believing that sustainable automation can be delivered by IT alone
- **Cost myopic** Ignoring value from improvements in quality, speed, and flexibility
- **Supplier dependency** Not building internal capabilities needed to scale and sustain automation
In our experience, there are five practices that are critical to achieving sustainable impact from automation:

1. Go after 30%+ impact and fundamentally restructure your cost base to make it a competitive advantage.
2. Tackle the social implications head-on; re-train and recruit people that will thrive in an automated world.
3. Rethink how IT fundamentally engages with the business and build a new interaction model.
4. Build the technical and organizational capabilities needed to make automation stick.
5. Apply automation within broader end-to-end redesigns to ensure full value capture and sustain value by building a clear target operating model.

5 enablers for Next Generation Automation:

- Game changing aspiration
- Focus on the people
- Engage IT
- Build in-house capabilities
- Systematically capture value

SOURCE: McKinsey CBF practice