CGI Intelligent Automation
Enabling our clients to identify, realise and optimise a range of benefits through the accelerated adoption of automation
CGI’s Global 1000 clients cited an intensifying need to transform

Driven by key global trends

2017 Global Industry Trends

1. Becoming digital to meet customer expectations
2. Growing cyber risk
3. Relentless regulatory demands
4. Growing use of digital technologies (Advanced Analytics, Robotics, etc.)
5. Growing need for collaboration and interoperability
6. Increasing use of public and private cloud (government)

Current State
- Revenue under pressure
- Investments to “Change” challenged
- Increasing run cost of legacy platform

Future State
- Drive growth...
- ...by building a digital organization...
- ...on a transformed, modern digital platform

Source: CGI Client Global Insights (2017)
CGI sees a common set of industry trends and emerging priorities for our clients as they seek to reduce run costs, invest in change and growth, and protect their organizations.

### Industry Trends
- **85%** Becoming digital organizations to meet customer/citizen expectations
- **74%** Growing cyber risk
- **60%** Need to respond to regulatory requirements
- **39%** Cost or budget pressures slowing response
- **38%** Growing use or experimentation with digital technologies

### Business Priorities
- **76%** Becoming digital to meet customer expectations
- **62%** Applying analytics for insight or optimization
- **62%** Addressing cyber risk
- **57%** Need to modernize
- **54%** Growing collaboration and interoperability

### IT Priorities
- **76%** Becoming digital to meet customer expectations
- **73%** Need to modernize
- **68%** Applying analytics for insight or optimization
- **66%** New delivery models/Agile
- **65%** Addressing cyber risk

**Emerging in the Top 15**
- New delivery models / Agile
- Talent challenges

**Growing Importance**
- Becoming digital to meet customer expectations rises from #6 to #1
- Applying analytics rises from #9 to #3
- Business model changes, talent challenges enter Top 10 priorities

Source: CGI Client Global Insights (2017)
Evolving from a human first to a hybrid human-robot approach

**Intelligent Automation as a key enabler of Digital Transformation**

### Traditional Business Operations
- Human first approach
- Focus on recruitment & training
- Offshoring, labor arbitrage
- Cost model per human hour
- Standardization, repetitive processes, reporting
- Break-fix
- Humans are the key asset

### Digital Business Operations
- Robotic first approach
- Focus on holistic automation
- Machine learning, cognitive
- Knowledge arbitrage
- Cost model per transaction, per robot, per machine
- Preventive, self-heal, self-serve
- Algorithms and software are the key asset

### Value to the Digital Enterprise
- Reduce Process Cost
- Boost Employee Productivity & Satisfaction
- Improve Service Quality & Customer Satisfaction
- Increase Revenue
- Competitive Advantage
CGI clients are taking advantage of our wider Intelligent Automation Framework to support their goals and achieve competitive advantage

<table>
<thead>
<tr>
<th>Basic Automation</th>
<th>Robotic Process Automation</th>
<th>Enhanced Process Automation</th>
<th>Algorithmic Automation</th>
<th>Artificial Intelligence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human triggered</td>
<td>Supported by basic analytics / decision support</td>
<td>Complex processes and decisions</td>
<td>Cognitive technology capable of emulating human capability including empathy</td>
<td></td>
</tr>
<tr>
<td>Simple rules based</td>
<td>Optical Character Recognition (OCR)</td>
<td>Supported by predictive / prescriptive analytics</td>
<td>Full end-to-end autonomy, hypothesizing, reasoning</td>
<td></td>
</tr>
<tr>
<td>Single system</td>
<td>Intelligent document processing</td>
<td>Machine learning, narrow intelligence, basic reasoning</td>
<td>Deep learning, deep neural networks</td>
<td></td>
</tr>
<tr>
<td>Screen scraping, Scripts, Macros, Workflows</td>
<td>Structured and unstructured data</td>
<td>Unstructured &amp; big data</td>
<td>Full speech recognition and generation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Simple web chatbot integration (e.g. FAQ)</td>
<td>IoT integration</td>
<td>Fully capable virtual agents, omni-channel</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Natural Language Processing (NLP), chatbots</td>
<td>Augmented &amp; virtual reality</td>
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</table>
CGI clients across the world are executing Robotic Process Automation programs and investigating Algorithmic Automation and AI

- 63% of clients are executing on RPA.
- 17% are executing on Enhanced Automation; 52% are investigating; 32% have not begun.
- 61% are investigating and experimenting with Algorithmic and AI applications; 35% have not begun.
IA focus RPA

- A virtual workforce that mimics and emulates the human workforce
- No changes to underlying processes, workflows, and systems
- Automating high volume, manual & repetitive tasks

Focusing people on supporting the customer journey & improving operational performance

For high volume repetitive tasks – balancing speed, accuracy and consistency

Improving customer & staff engagement

Benefits

- Accuracy
- Standardisation
- Quality
- Capacity
- Customer service
- Scalability
- Staff morale
- Management information
- Cost
- Staff time tied up in low value/skill repetitive tasks

Reducing operating costs whilst positively impacting customer acquisition & retention
CGI’s Intelligent Automation approach lowers risk and accelerates benefits

Engage
- Exploratory workshop
  - Develop automation strategy and roadmap.
  - Identify candidate areas for intelligent automation ideation and prototyping, with an associated high level cost/benefit analysis and business case linked to Business Drivers.

Prepare
- Ideation & solution design
  - Design innovative automation solutions using an appropriate technology mix.
  - Define business change needs and impact.
  - Optimize processes where appropriate.

Automate
- Prototype development
  - Develop and test the automation.
  - Define pilot implementation and business change plans.

Embed
- Automation pilot
  - Carry out user acceptance testing.
  - Prepare users for the change.
  - Roll out and embed the pilot, monitoring and fine tuning to support realisation of expected benefits.

Manage
- Manage in production
  - Supporting the ongoing automated service as Business As Usual, though cloud hosting, proactive monitoring, dynamic scaling and service support

Continuous improvement
- Iterative improvement identification to enhance the level or scope of automation, further reducing manual intervention

Next automation opportunities
- Additional Intelligent Automation initiatives and use cases, as defined in the roadmap.
- Review and update the Intelligent Automation roadmap based on pilot feedback, to most effectively realise the strategy.
CGI helped create a new operating model to ensure the continuity of high quality services, reduce run costs to create the correct cost structure, and provide faster project delivery. CGI is now moving towards Digital Transformation, Data, Robotics, Cybersecurity and Agile services.

- The project is estimated to last until the end of 2018
- Currently more than 10 CGI RPA experts providing Business Process Analysis, RPA design, implementation and test services; RPA tooling is used in partnership with Blue Prism
- 34 processes have been automated, in production to date
- 173 processes are currently under design in the backlog
- Overall process portfolio identified for automation 350
- RPA Application Management Services in production
- 20-50% process cost reduction achieved
Leading Global Reinsurer

Automation of the Claims First Notice of Loss (FNoL) process and the establishment of an Enterprise platform to support process automation expansion

<table>
<thead>
<tr>
<th>CGI developed a solution for ingesting unstructured and inconsistent form content and automating the Guidewire application data entry process using Robotic Process Automation. CGI also trained the client’s Operations Team to operate the Robotic Control Room to manage production bots.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client Challenge</td>
</tr>
<tr>
<td>• FNoL process data is sourced from a number of varying forms and document formats</td>
</tr>
<tr>
<td>• Form data is not consistent and required standardizing prior to intake to the FNoL claim registration process</td>
</tr>
<tr>
<td>• Claims must be entered into Guidewire application manually</td>
</tr>
<tr>
<td>• Reinsurer was unable to cope with increased volume and needed to hire temporary staff to process the claims</td>
</tr>
<tr>
<td>Client benefits</td>
</tr>
<tr>
<td>• 4 Bots are currently in production processing 4,000 FNoL claims per month</td>
</tr>
<tr>
<td>• Reinsurer was able to reduce FTEs by 70% without the need to hire temporary staff</td>
</tr>
<tr>
<td>• Processing time was decreased by 75%</td>
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</tbody>
</table>

Reduce process costs and reduced routine tasks

Boost employee productivity & value
IA focus Conversational AI

- Ranges from simple FAQ chatbots to fully capable virtual agents
- Complex landscape of technology and AI components
- Requires input from psychologists, sociologists, linguists

<table>
<thead>
<tr>
<th>FAQ Bot</th>
<th>Scripted Chatbot</th>
<th>AI Chatbot</th>
<th>Virtual Assistant / Agent</th>
<th>Fully Capable Virtual Agent</th>
</tr>
</thead>
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<tr>
<td>• Human – bot interaction</td>
<td>• Complex fully scripted / structured communication</td>
<td>• Complex scripting w/ machine learning</td>
<td>• Limited Virtual Agent mainly text and email</td>
<td>• Technology capable of emulating human capability incl.:</td>
</tr>
<tr>
<td>• Simple fully scripted, rule based, narrow content</td>
<td>• Multi-channel / multi-language</td>
<td>• Contextual intelligence</td>
<td>• Single and multi-channel</td>
<td>• Avatar</td>
</tr>
<tr>
<td>• Limited number of channels / single language</td>
<td>• Information gathering</td>
<td>• Multi-channel &amp; language</td>
<td>• Limited sentiment analysis / limited empathy</td>
<td>• Human physical aspects</td>
</tr>
<tr>
<td>• Menu &amp; intent driven</td>
<td>• Rudimentary personas</td>
<td>• More complex personas</td>
<td>• Extensive use of routing and escalation to live support</td>
<td>• Sentiment analysis / empathy</td>
</tr>
<tr>
<td>• No personality</td>
<td>• Limited use of routing and escalation to agent</td>
<td>• Bot initiates contact</td>
<td>• Narrow intelligence, basic reasoning</td>
<td>• Full speech recognition / generation</td>
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<td>• Descriptive / diagnostic analytics</td>
<td>• API queries into deeper content</td>
<td>• Extensive use of routing and escalation to agent</td>
<td>• Integration into e-commerce / API’s</td>
<td>• Computer vision</td>
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<td></td>
<td></td>
<td>• Deep integration into e-commerce</td>
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<tr>
<td>Hybrid human-robot approaches require skills and input from experts in psychology and sociology, organizational change management and human resources</td>
<td></td>
<td>• Beginnings of cognitive analytics</td>
<td></td>
<td>• No back buttons, no home buttons</td>
</tr>
<tr>
<td>Degree of Complexity of Interaction &amp; Depth of Human Emulation</td>
<td></td>
<td></td>
<td></td>
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CGI’s approach to Conversational AI and Chatbots combines experimentation and innovation in AI with Agile practices.

**Conversational AI strategy**
Demystify Conversational AI, technology landscape exploration, identify challenges and business problems. Conversational AI will help you overcome.

**Ideation & solution design**
- Design personality, tone of voice, physical aspects & human capabilities
- Design conversational flow including start, capture & close conversation
- Define users intentions & expressions
- Define business scenarios for end to end integration across internal and external systems & other IA solutions

**Solution development**
- Develop & test the Conversational AI solution leveraging Agile scrum methods.
- Define pilot implementation and business change plans.
- Capture baseline data

**Solution pilot**
- Carry out A/B testing
- Prepare employees for the change of human/robot hybrid approach.
- Continuous improvement of the solution: the follow-up of conversations, training and publishing
- Refine the business case with associated high level cost/benefit analysis and business case linked to Business Drivers and Human Capital Strategy.

**Additional initiatives and use cases, as defined in the roadmap.**
- Review and update the roadmap based on pilot feedback, to most effectively realise the strategy.

**Manage**
Supporting the ongoing Conversational AI service as Business As Usual, through cloud hosting, proactive monitoring, dynamic scaling and service support.

**Solution tuning and refinement**
Iterative improvement identification to enhance the conversation flow and sophistication; further reducing the need for human agent intervention
The client was looking to establish a partnership to build Artificial Intelligence (A.I.) solutions. A first step was the agile development of a conversational agent to drive automation in the contact center (170k contact p month).

**Client Challenge**
- Looking for partner to build AI solutions
- 1st focus Conversational Agent / Chatbot to automate 80% of contacts
- Goal to free up contact centre agents from answering repetitive questions
- Little experience with conversational AI technologies and the
  - linguistic, social and psychology aspects needed to
- develop a high-quality automated customer interaction experience

**Client benefits**
- CGI used its agile and iterative chatbot development approach
  - 1st Phase Proof of Concept; use cases: address changes and new service sign up.
  - Selected best NLP technology for dual language
  - NLP accuracy reached 98% after 4 month machine learning period
- Chatbot now in production and being optimized and baselined
- Chatbot integrated to Salesforce CRM, SAP ERP, Customer Portal and price benchmarking to insert insights in the conversation

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**Major Utility leverages chatbot to automate customer contacts**

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Intelligent Automation realizes benefits across a wide range of business and IT processes

Business Optimisation
- **Front Office**
  - e.g. Customer Support & Service Desk
- **Back Office**
  - e.g. Administration & Reporting
- **End to End**
  - e.g. Connecting Process Islands

IT Optimisation
- **IT Support**
  - e.g. Service Desk, System Administration, App Management
- **Data Migration & Management**
  - e.g. Legacy System Integration / Transition / M&A

Strategic Change
- **Digital Transformation**
  - e.g. enabling run, change and grow
Thank You

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CGI’s Intelligent Automation Service Framework offers three-tiers of services, supporting wherever a client is on their intelligent automation journey.

<table>
<thead>
<tr>
<th>Offering</th>
<th>Key Services</th>
<th>Value Proposition</th>
</tr>
</thead>
</table>
| **Consulting & Systems Integration** | • Enterprise automation strategy & roadmap - from RPA to AI  
• Intelligent Automation ideation & integrated solution design  
• Technology evaluation, selection & integration  
• Automation benefits analysis & business case generation  
• Business change management & workforce re-alignment  
• RPA factory: automation development & management  
• Flexible IA platform hosting & operation (including secure cloud & on demand)  
• Integration of enhanced capabilities like chatbots, virtual advisers, AR/VR, advanced analytics, machine learning, AI, IoT  
• RPA as a Service  
• Technology agnostic  
• Flexible commercial models  
• Proven RPA templates, factory approach & global delivery network  
• Advanced automation / AI / IoT / analytics | • Proven progressive RPA delivery methodology  
• Cross-industry benefits from 100s of automations  
• Innovation labs  
• Holistic approach to technology, process and people change |
| **Managed Services**            | • Automation and AI as an integral part of transformation  
• Automation of IT ops in ITO & business processes in BPO  
• Accelerated digital delivery and operations  
• Annual IA/Al innovation plan | • Accelerated transformation with IA as a driver  
• New, insight-driven, connected operating models  
• Continuous innovation and experimentation  
• Security that's “designed in,” not bolted on |
| **Outsourcing**                |                                                                                                                                         | 250+ RPA practitioners; 1000+ Advanced Analytics/AI; 50+ R&D; seamless global delivery |

- RPA  
- IT Ops autonomics  
- Chatbots / virtual service agents  
- machine learning / deep learning  
- natural language processing  
- digital image processing