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TECHNOLOGY TRANSACTIONS IN 2017: TRENDS AND CHALLENGES

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Presentation Topics

1. Trends and projections for 2017

2. The many faces of cloud as a service

3. The drive to automation
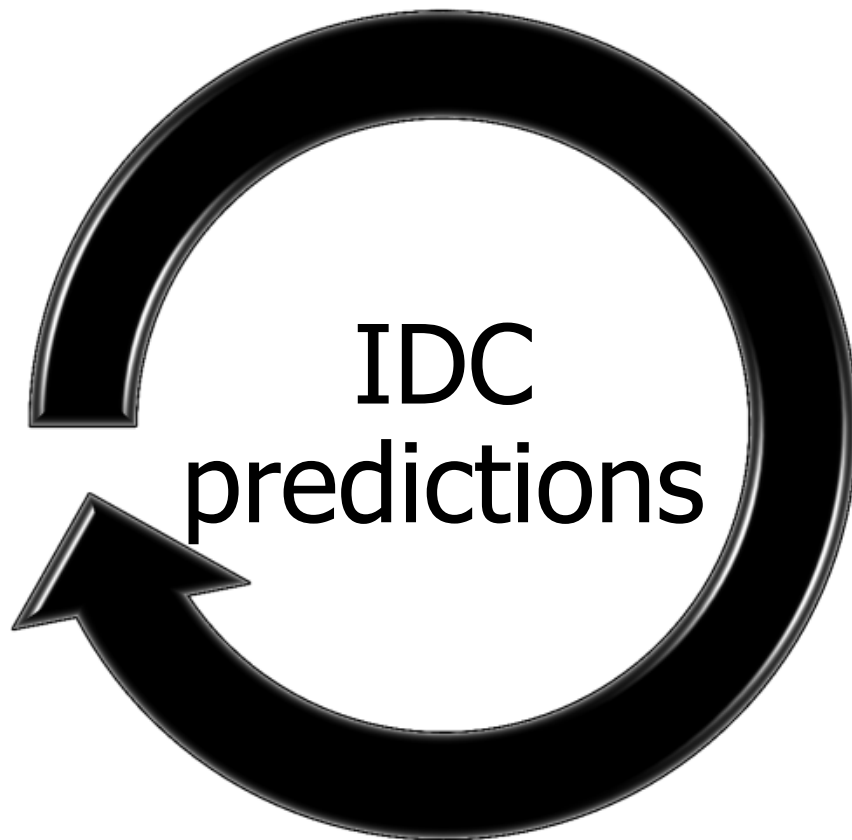
4. Increased use of data analytics

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TRENDS AND PROJECTIONS - 2017
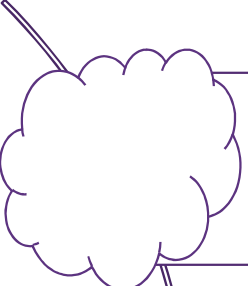
Buzz for Enterprise IT

2017

- **Domination of Cloud Computing**
- **More Automation Please**
- **Data Analytics as a Business Tool**
- Exploring Artificial Intelligence (AI)
- Implementing Mobility /Digital Solutions

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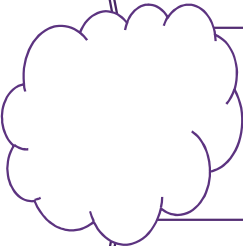# Domination of Cloud Computing

IDC
predictions

- By 2020, 67% of Enterprise IT Infrastructure and Software will be for Cloud-based offerings.

- *By 2021, more than 75% of Cloud services providers' revenues will be mediated by channel partners/brokers.*
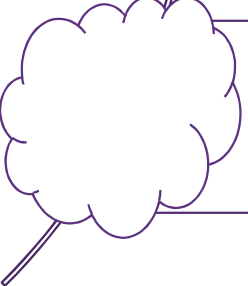
*The Doyle Report – Nov. 8, 2016

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And Gartner …

By 2020 corporate no-cloud policies will be as scarce as no-internet policies are today.

Not surprising considering how valuable the cloud and cloud tools already are to many businesses across a range of industries.

But although we're seeing mainstream uptake of popular cloud products and services, cloud developers aren't resting on their laurels; instead, we're noting **the development of existing and new cloud devices that are likely to keep the cloud top of mind** and increasingly appreciated in the years to come.

*Gartner – June 22, 2016

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Forrester Report: Get ready for Wave 2 — Here comes the Enterprise

The 1st wave of cloud computing was created by Amazon Web Services (AWS), which launched with a few simple compute and storage services in 2006. A decade later, AWS is operating at an $11 billion run rate.

Experts agree that the market is entering something of a 2nd wave.

The cloud market will accelerate faster in 2017 as **enterprises** seek to gain efficiencies as they scale their compute resources to better serve customers.

Enterprises with big budgets, data centers and complex applications are now looking at cloud as a viable place to run core business applications.

The No. 1 trend is here come the enterprises.

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Multiple Cloud Environments

➤ The global public cloud market will top $146 billion in 2017, up from $87 billion in 2015 and is growing at a 22 percent compound annual growth rate.

➤ The lion's share of this growth will come from Amazon.com, Microsoft, Google and IBM, which have emerged as "mega-cloud providers." They are opening new data centers and making concessions, such as Microsoft's agreement to have T-Systems manage its cloud in Germany to meet data localization requirements.

➤ But the big players won't be able to service every unique request, which means smaller regional players will see an uptick in adoption in 2017.

*CIO: Referencing Forrester Report - Nov. 2, 2016

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Cloud Cost Containment

- One popular theory is that CIOs will save money by investing in public cloud software, but that's not always the case. The fact that most CIOs leverage multiple cloud providers means that enterprises are already waist-deep in **complex cloud vendor management**.

- IT executives will get better at containing cloud costs in 2017 as their best practices mature.

*CIO: Referencing Forrester Report - Nov. 2, 2016

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Automation

√ Software "robot" that executes a business or computing process that is repetitive, repeatable and rules based

√ Partially or fully automates tasks that otherwise require a human to perform, such as the administrative task of transferring data from multiple input sources like email and spreadsheets to an ERP or CRM system

√ Software that operates at the graphical user interface layer, "on top" of a company's IT infrastructure, not requiring changes to the underlying systems

√ Businesspeople without programming expertise can, after being trained, automate processes with RPA tools

Compared to AI → intelligent systems that learn, adapt and potentially act autonomously rather than simply execute predefined instructions

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Automation

Transparency Market Research: the market for IT robotic automation globally is forecast to reach $4.98 Billion by 2020, increasing by more than 60% per year

RPA is likely to impact 30%-40% of the business process service spend in the long term

Everest Group/NASSCOM:

- Of the amount spent on business process services, the "spend impacted by RPA is low" but over 2014-2015 it grew by more than a 100% compound annual growth rate

RPA product offerings are more mature than AI offerings. International Data Corp. predicts the worldwide market for AI to grow from $1.6 billion in 2015 to $16.5 billion in 2019, increasing by more than 60% per year.

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Data Analytics

Big Data & business analytics software worldwide revenues will grow from **nearly $122B in 2015 to more than $187B in 2019, an increase of more than 50% over the five-year forecast period**.

The market for prescriptive analytics software is estimated to grow from approximately $415M in 2014 to $1.1B in 2019, **attaining a 22% CAGR**.

By 2020, predictive and prescriptive analytics will attract 40% of enterprises' net new investment in business intelligence and analytics.

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Cloud Computing, AI and Data Analytics ...

Using AI, technology providers will focus on three areas — advanced analytics, AI-powered and increasingly autonomous business processes and AI-powered immersive, conversational and continuous interfaces.

By 2018, Gartner expects most of the world's largest 200 companies to exploit intelligent apps and utilize the full toolkit of big data and analytics tools to refine their offers and improve the customer experience.

Through 2020, Spending on Cloud-Based Big Data and Analytics Technology Will Grow 4.5x Faster Than Spending for On-Premises Solutions.

The Source: IDC FutureScape: Worldwide Big Data and Analytics 2016 Predictions courtesy of Cloudera

However, nontechnical issues such as liability and privacy ... may slow embedded intelligence.

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*Gartner – Gartner's Top 10 Strategic Technology Trends for 2017 – Oct. 18, 2016

Data Analytics Cont.

Improving customer relationships (55%) and making the business more data-focused (53%) are the top two business goals or objectives driving investments in data-driven initiatives today. 78% of enterprises agree that collection and analysis of Big Data have the potential to change fundamentally the way they do business over the next one to three years. Source: IDG Enterprise 2016 Data & Analytics Research, July 5, 2016.
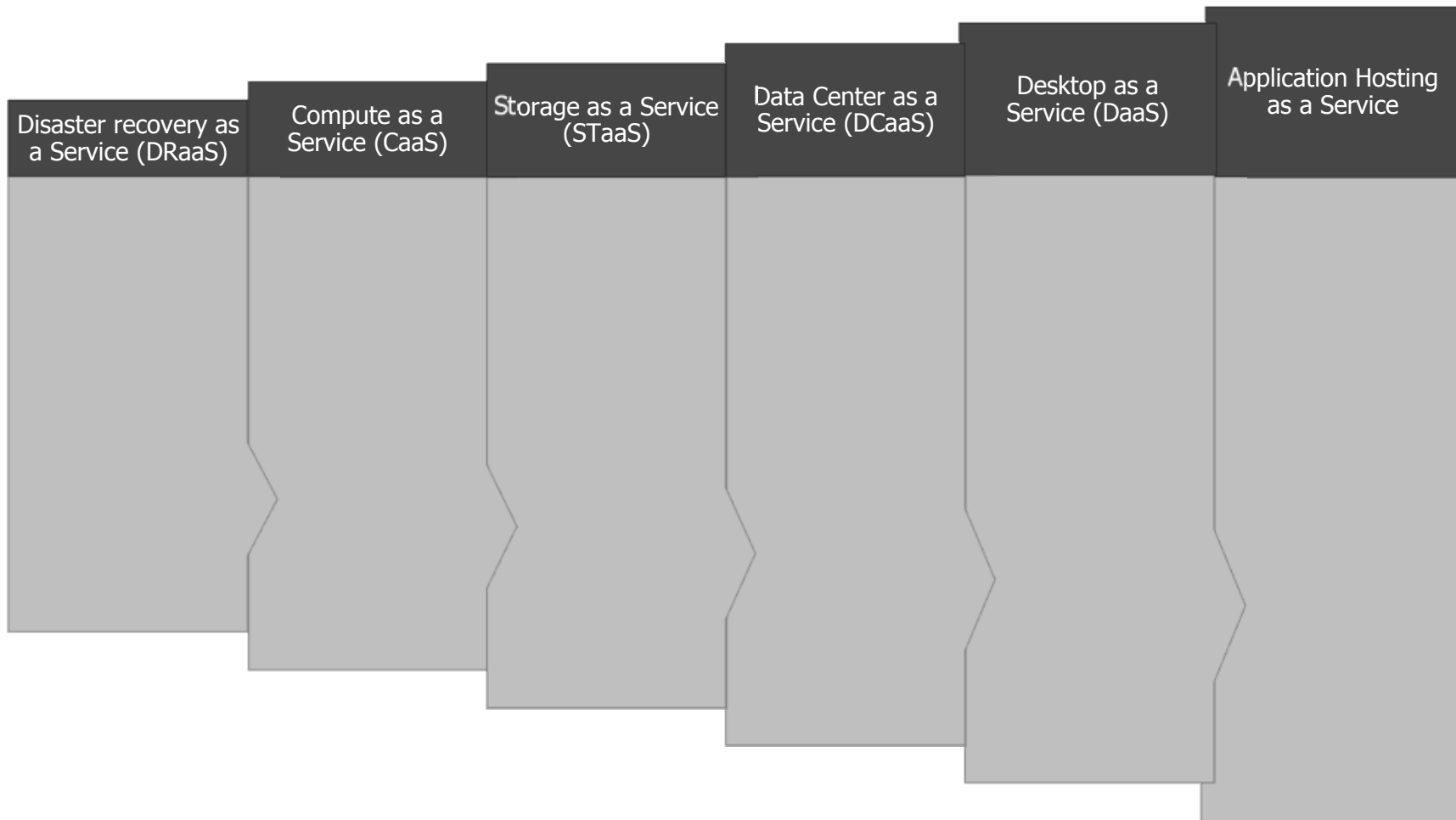
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THE MANY FACES OF CLOUD AS A SERVICE

Cloud as a Service

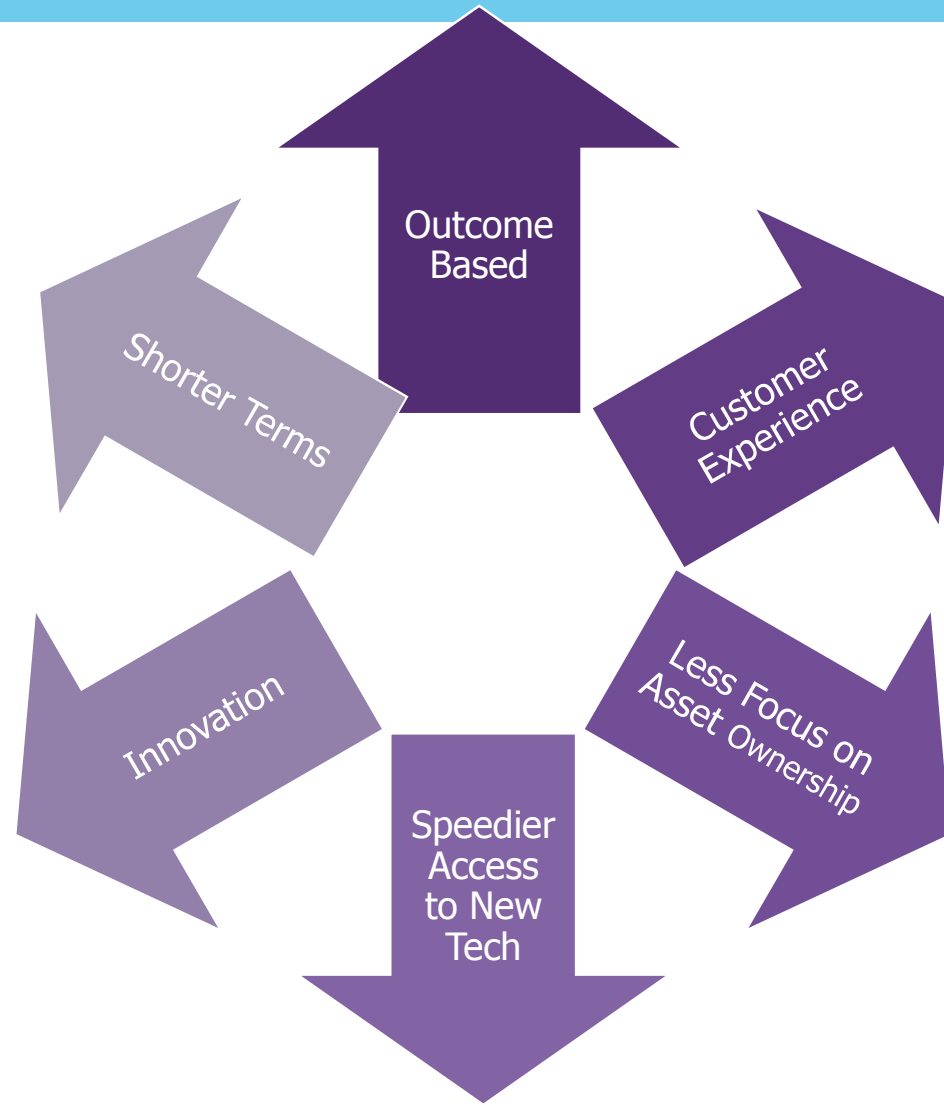| Disaster recovery as a Service (DRaaS)	Compute as a Service (CaaS)	Storage as a Service (STaaS)	Data Center as a Service (DCaaS)	Desktop as a Service (DaaS)	Application Hosting as a Service

Shift in Market

Possible candidates …

Roll out of new apps

DevOps

Storage

Disaster recovery

Data management solutions

Data analytics

Email

BPO solutions

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Trends

1. More cloud **MUCH MORE**

2. Multiple providers

3. Continued focus on availability and continuity

and

4. Security

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Challenges

- Controlling the data

- Managing multiple vendors across multiple cloud environments

- Addressing availability and business continuity concerns

- Ensuring security controls

Our Disaster Recovery Plan Goes Something Like This...
HELP! HELP!
DILBERT By Scott Adams

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Legal Considerations

Input data
Performance data
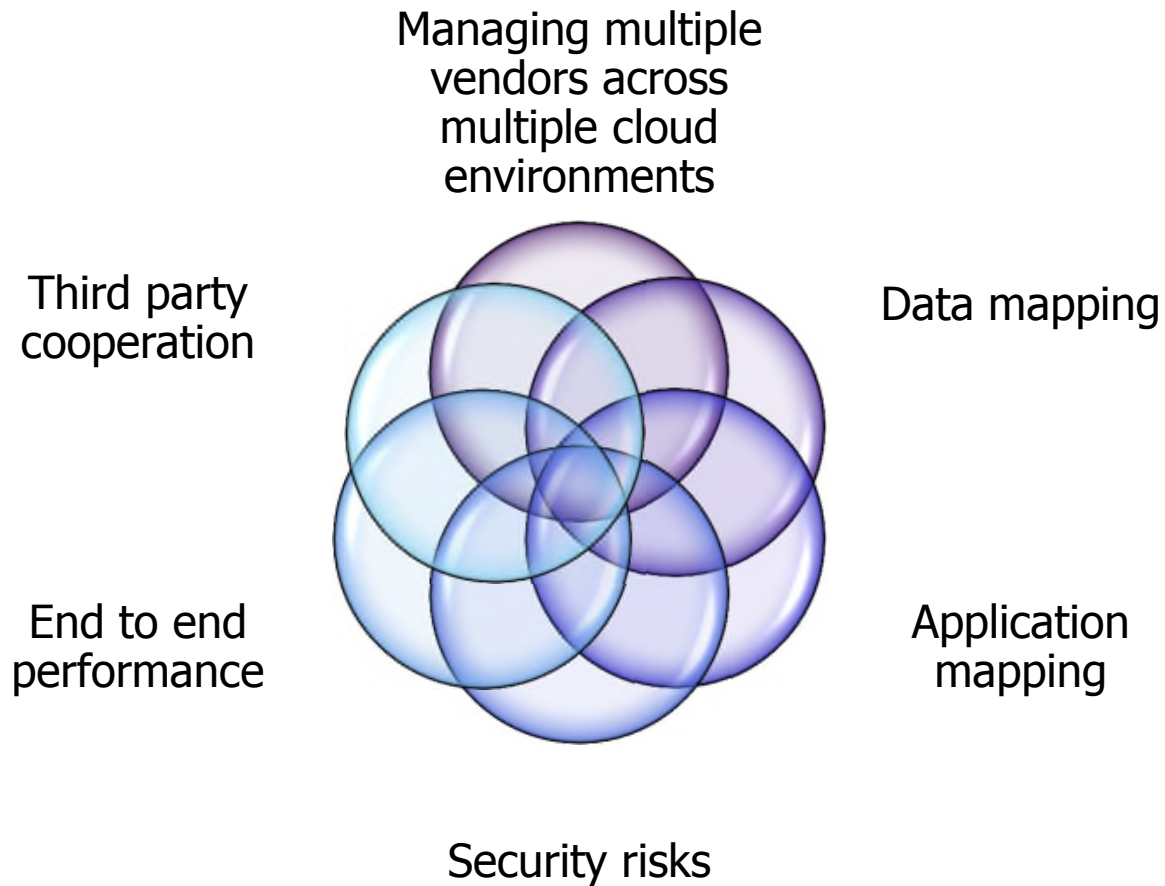End user tracking
Behavior data

Controlling the data

- Where is it
- What is it
- Who has access
- Who owns input, modifications and output
- Who has the right to use
- How do you get it back

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Data ...

- "**Customer Data**" means all text, files, data, output, programs, files, information or material (a) of or submitted by or relating to any Customer Entities or any of their users, personnel, representatives, customers or vendors, (b) residing on any In-Scope Systems, or (c) generated, obtained, developed, processed or produced by, as a result of or in connection with the Services or the use of the Services, including any changes, improvement, enhancements or updates thereto.

- As between the Parties, Customer retains all intellectual property and other rights in Customer Data. Customer Data will be considered confidential information of Customer, which Provider must keep strictly confidential in accordance with the Agreement.

- Customer will have access to and the ability to easily download any Customer Data stored, hosted or controlled by Provider or any Provider agents at all times.

- Customer will have the right to remove or require Provider to remove Customer Data from the systems or software of Provider or any Provider agents. Provider will not destroy or purge any Customer Data without Customer's consent. Upon termination or expiration of the Agreement for any reason, or upon request by Customer at any time, Provider will immediately (or as otherwise directed by Customer in writing) cease to process the Customer Data and will promptly return to Customer all such Customer Data, or destroy the same, in accordance with Customer's instructions.

- Provider will comply with the security and privacy requirements set forth in **Exhibit B** hereto.

- **Both Parties will have the right to use performance data relating to the performance of the Services; provided, that, any use by Provider will be of aggregated, de-identified data that in no way references or implicates any Customer Entities.**

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Legal Considerations

Managing multiple
vendors across
multiple cloud
environments

Third party
cooperation

Data mapping

End to end
performance

Application
mapping

Security risks

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Third Party Access

- Third party providers (including their personnel and agents) wherever located of any Customer Entities ("**Third Party Providers**") will have the right to access, coordinate and use (as directed by Customer) the Services.

- Without limiting the foregoing, Third Party Providers may (a) be the main point of contact regarding the Services; (b) administer Services; and (c) review, audit and provide remittance on invoices relating to the Agreement.

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Legal Considerations

- Continued focus on availability and continuity

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Availability

- Provider warrants that the software made available under the Agreement will maintain an average standard response time of seven seconds or less in all transactions within any 24-hour period. Provider additionally warrants that the software will be available 99.995% of the time during any 30 day period.

- Provider will be responsible for performing daily incremental backups on all servers on an hourly basis and full backups of all Customer Data on a daily basis.

- Provider will perform restore operations and provide infrastructure redundancies and rapid (48 hours or less) reliable data recovery to ensure business continuity.

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Legal Considerations

- And security controls

Security

- What are the security policies/certifications?
- Shhh – is the leveraged solution actually better?

THE DRIVE TO AUTOMATION

What Are the Drivers of RPA?

- Reduced cost of performance

- Outsourcing deals to date have primarily been based on taking advantage of less expensive labor, wherever it may be located. (India was especially attractive because of its large English-speaking population and highly educated labor force.)

- Cost benefits of labor arbitrage now not as good with labor costs of Service Provider personnel, including in India and other offshore locations, on the rise

- Need to find cost-saving alternatives

- Evolution? Customer personnel → Service Provider personnel → Robotic software

- Everest Group/The National Association of Software and Services Companies (NASSCOM): RPA implementation can provide companies with a "cost reduction of 35-65 per cent for onshore process operations and 10-30 per cent in offshore delivery… [and] an investment recovery period as short as 6-9 months…"

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Trends

- More automation
- Stand-alone tools
- Big promises

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Challenges

- IP rights

- Back end considerations

- Commitment realization

Legal Considerations

- IP rights

IP Issues

- Ownership of Data
  - Data provided by customer
  - Data developed/generated by automation tools
  - Reports
- Use by Vendor
  - Aggregation – identification issues
  - Removal on termination of agreement

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IP Issues

- **Ownership of Software/Algorithms**
  - Customer-specific processes and learning methods
    - Difficulty in distinguishing from automated tool
    - Competitor use issues
    - Removal upon termination of agreement vs. license
  - General purpose algorithms
    - Ownership vs. license rights
    - Competitor use issues
    - Cost issues

- **Third Party Tools**
  - Review contracts
  - Direct contracting

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Open Source

- Customer acknowledges that certain components of the Products may be covered by so-called "open source" software licenses ("**Open Source Software**"). Open Source Software, if any, contained in the Products and the use thereof, shall be subject to the terms and conditions of the Agreement.

- Supplier shall be solely responsible for compliance (and non-compliance) with the terms of any open source license agreements. In addition, Supplier shall be solely responsible for the operation and functionality of the Open Source Software, as well as any failures or issues in or caused by the Open Software Software. There shall be no additional cost or liability to Customer or any Authorized User arising in connection with the use and license of the Open Source Software.

- Supplier represents that the inclusion of Open Source Software in the Products as used in Customer's environment shall not impact or affect any of the other software used in Customer's environment or expose such other software to the terms of any open source license agreements. Open Source Software and related information for the Products is set forth in **Exhibit XXX**. Source code of the Open Source Software shall be made available to Customer if so mandated under the relevant Open Source Software license agreement.

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Third Party Software

- Products may contain third party software components as set forth in, and only as set forth in, **Exhibit XXX**. Third party software, if any, contained in the Products and the use thereof, shall be subject to the terms and conditions in this Agreement.

- Licensor represents and warrants that it has all rights to use and license the third party software components and that there shall be no additional cost or liability to Customer or any Authorized User arising in connection with the use and license, unless specified otherwise in the relevant Order Form. Supplier shall be solely responsible for compliance (and non-compliance) with the terms of any license agreements for third party software components.

- In addition, Supplier shall be solely responsible for the operation and functionality of the third party software components, as well as any failures or issues in or caused by the third party software components. All warranties, if any, from the respective third party vendor(s)/licensor(s) as specified in the license agreement with the respective third parties, shall be passed through to Customer.

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Legal Considerations

- Commitment realization

Pricing and Cost Impacts – Consider the Overall Impact

- **Costs of Automation**. Automation projects – at least at the outset – may not be without incremental expense. When considering an automation project it is important to consider the one-time and ongoing incremental costs and balance those against the anticipated efficiencies and benefits. Costs of automation may include:

  - *Software licensing and maintenance*. For proprietary products, many vendors are licensing their automation software as a standalone offering with standalone pricing. There also may be third party license and maintenance costs if the proprietary products require specific operating systems, Middleware or application software to operate.

  - *Software configuration, interfaces, and implementation*

  - *Incremental infrastructure and capacity*

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Pricing and Cost Impacts – Consider the Overall Impact

- **Personnel costs**

  One impact of automation may (or may not) be the reduction of required headcount. If there is a reduction in headcount because fewer people are needed to provide a service that is not "automated," will there be an adjustment to the fees? What are the adjustments? Will there be an adjustment regardless of whether the vendor can actually reduce the headcount? Consider including a requirement that headcount cannot be reduced until the vendor can demonstrate that the documented benefits have been realized.

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Cost Responsibility

- Sharing of Reduced Costs
  - Contractual Provisions
  - Change Management Process
  - Issue: Customer cost reductions
- Example
  - In no event shall Customer or any Customer Entity or third party service provider be responsible for incurring any incremental costs or expenses (including for personnel, tools and infrastructure capacity and requirements) associated with Supplier's provision, implementation and ongoing support and operation of processes and other improvements associated with achieving the Committed Productivity.   Customer's approval of any changes to, or the introduction of new, processes or tools is not a dependency for Supplier's commitment to meet the Committed Productivity and Customer's nonapproval shall not relieve Supplier of its obligations with respect to the Committed Productivity.

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Technology Changes

- In the event that Customer wishes to introduce new technology or a major change or shift in then-current technology with respect to any of the Services, Customer may upon notice to Supplier elect to add, modify or remove a Service for purposes of reflecting the new technology or change in technology. Upon notice from Customer of such election, the Parties promptly shall (a) assess the impact to staffing and, if applicable, costs and (b) agree on, and amend the Master Services Agreement to reflect, the appropriate Services Levels and any changes to fees and rates applicable to such change, including up-front, baseline and variable costs/fees.

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Legal Considerations

- Back end considerations

Back End Considerations

- IP Provisions Key

- Customer Data
  - Need data provided by Customer and data developed by Automated Tools
    - Processes during term – access, delivery, and storage of data
    - Format and organization of data
  - Use of Customer Data by Vendor
    - Maintenance until transfer – survival period
    - Transfer/cooperation with successor vendor
    - Aggregation – continued use past termination
    - Removal

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Back End Considerations

- Customer-specific processes and learning methods
  - Part of transfer
  - Testing issues – dual operations and backup
  - Ownership issues – "catch-all license"
  - Removal upon termination

- General automation tools
  - Post termination use of Vendor Tools
    - Terms (costs and restrictions)
    - Support and maintenance
  - Development of Vendor Tools
    - Ownership vs. license rights
    - Use following termination
    - Competitor use issues

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Back End Considerations

- Third-Party Tools
  - Continued Use
    - Vendor Terms – assignment/sublicensing
    - Direct contract
    - Successor vendor
  - Support and Maintenance

- Most Important—Establish upfront
  - Service Description/Statement of Work
  - Change Orders
  - Technology Development

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INCREASED USE OF DATA ANALYTICS

Trends

- More data analytics

- New platforms and sources

- Focus on data monetization

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Challenges

- Data rights

- Data ownership

- Other IP ownership

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Legal Considerations

- Data rights

- Data ownership

- Other IP rights

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Legal Considerations

- Data ownership

It's All About the Data

Data Identification

↓

Location of Data

↓

Access to Data

↓

Ownership of Data

↓

Protection of Data

↓

Return of Data

Right to Use

Ownership

Right to Use

Consents

Legal Considerations

- Other IP rights

Work Product

- Work Product, includes, but is not limited to, any tangible or intangible property, **data (including all data inputs and outputs),** works of authorship (whether or not embodied in a tangible medium), **formulae, artwork, sketches, software code, designs, graphics, algorithms, data models, use cases**, **reports, data feeds, performance data, data warehouses, APIs, interfaces, data access logs, meta data, access control lists,** modifications, enhancements, configurations and customizations of source code, binary code, derivative works user interface, libraries, **data integration patterns**, data structures, automation patterns, artifacts developed through cognitive computing, architecture and related designs, discoveries, inventions, know-how, techniques, concepts, and improvements.
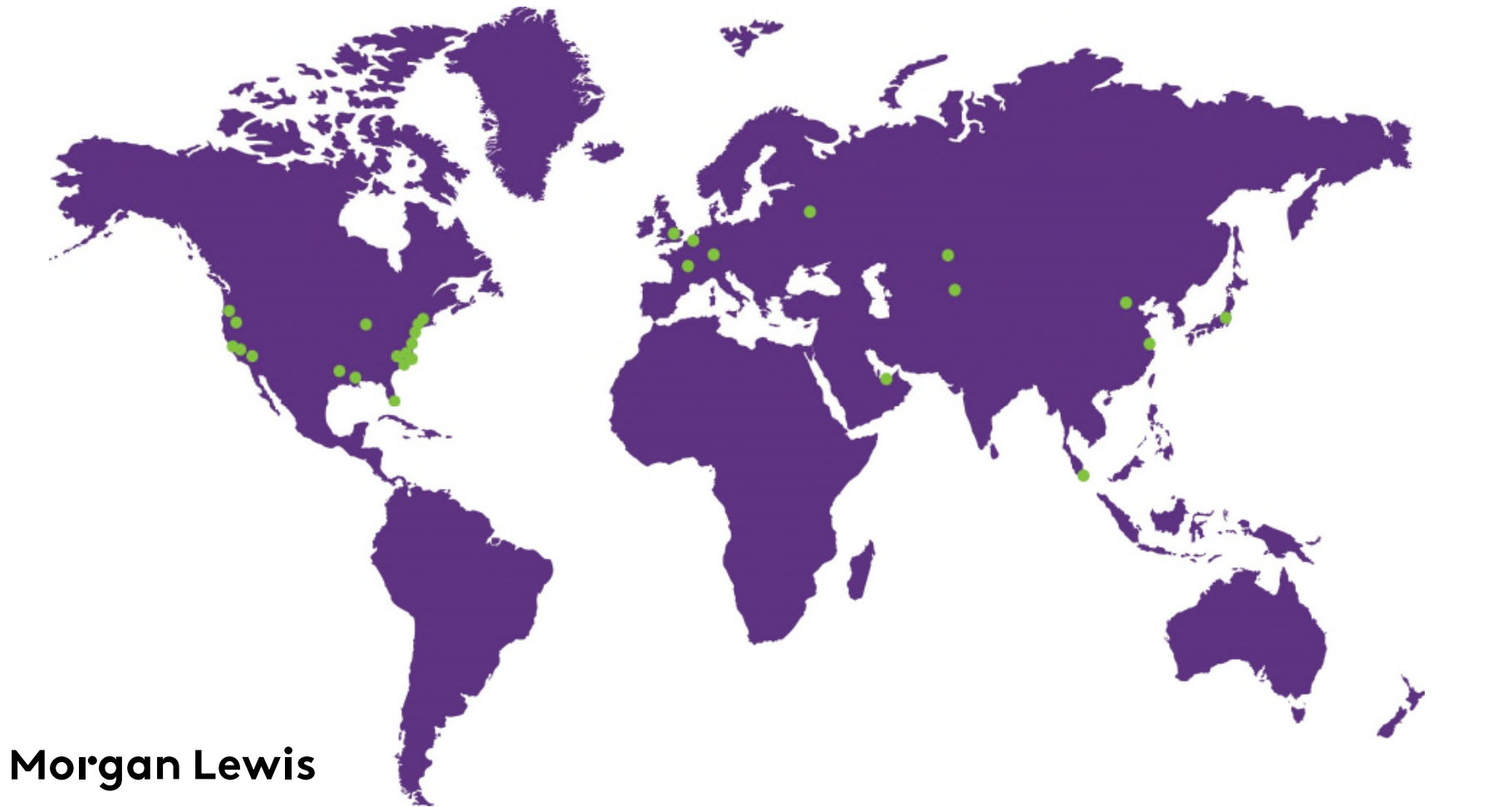
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Our Global Reach

Africa
Asia Pacific
Europe
Latin America
Middle East
North America

Our Locations

Almaty	Dallas	Los Angeles	Philadelphia	Silicon Valley
Astana	Dubai	Miami	Pittsburgh	Singapore
Beijing	Frankfurt	Moscow	Princeton	Tokyo
Boston	Hartford	New York	San Francisco	Washington, DC
Brussels	Houston	Orange County	Santa Monica	Wilmington
Chicago	London	Paris	Shanghai	

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THANK YOU

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