Corporate Tax Spring Training
Trends in Tax Technology
Agenda

1. Introduction to Robotic Process Automation
2. Portals
3. Analytics
Introduction to RPA
Robotic and Cognitive Automation

You must look to technology for sources of sustainable cost reductions

"Mimics human actions"
Computer program or "robot" that mimics rules-based actions in existing applications
Finance Applications: Invoice receiving, 3-way matching, customer credit assessment, reconciliation etc.

"Mimics human judgment"
Tools that use natural language recognition/generation and machine learning for information extraction
Finance Applications: Invoice processing and filing, filing, submission/claims processing, etc.

"Augments Human Intelligence"
Computerized models that simulate human thought processes through predictive decision making
Finance Applications: Creation of competitor analysis, advanced planning & predictive forecasting etc.

"Mimics Human Intelligence"
The theory and development of computer systems that can perform tasks which normally require human intelligence
Finance Applications: Self-sustaining reconciliations etc.

Futuristic
Degree of Cognition

Robotic Process Automation
Intelligent Automation
Cognitive Automation
Artificial Intelligence

Low
Medium
High
Tax technology
In an RPA solution, robots are capable of mimicking most user actions

Opening email & attachments
Moving files and folders
Copying and pasting
Logging into web/enterprise applications
Filling in forms
Reading and writing to databases

Scraping data from the web
Connecting to system APIs
Making calculations
Extracting structured data from documents
Collecting social media statistics
Following “if/then” decisions/rules
Robotic process automation defined
Computer-coded, rules based software that automates manual activities by performing repetitive rules-based tasks

Bot is software **programmed to perform repeatable tasks**
Using recorders and easy programming language, robots are programmed to replicate repetitive human tasks

**RPA operates in the User Interface layer**
It is able to automate rules-based work without compromising the underlying IT infrastructure

**RPA replicates human interactions** with proven technology
It mimics common tasks such as queries, cut/paste, merging, and button clicks

**RPA can be implemented at the desktop or in the virtual environment**
Flexibility to quickly deploy robots directly onto existing desktops (PCs, laptops) or virtually (virtual machines) to save on additional hardware costs

**Robotic process automation tools help businesses improve the effectiveness of services faster and at a lower cost than current methods**
How does RPA work?
RPA can be easily deployed and managed from a central controller to interact with a wide range of business applications

1. “Process Developers” specify the detailed instructions for robots to perform and “publish” them to the robot controller repository.

2. The Robot Controller is used to assign jobs to robots and to monitor their activities.

3. Each Robot is located on an organization environment – which may be virtualized or physical (e.g., desktop computer) – where it interacts directly with business applications.

4. Business Users review and resolve any exceptions or escalations.

5. Robots are capable of interacting with a wide range of Applications.

Illustrative
Process Automation Selection Criteria

RPA can address the bulk of manual tasks involving data sourcing and validation due to complex integrations and multiple handoffs

1. **Well defined process**
   - Automating a bad process leads to an invisible bad process!
   - Select processes with clear scope, execution steps and existing controls in order to reduce risk in automating the process

2. **Rules based primarily**
   - Process that are well-documented and driven more by rules than judgement, lend themselves well to earlier adoption of automation.

3. **Measurable tasks and outcomes**
   - Clearly-defined success criteria and metrics are indispensable for successful automation

4. **High transaction volume and manual effort**
   - Select processes with higher transaction volume and manual intervention for faster automation benefits at greater scale and quality
Portal Technology
What is tax portal?

A **common framework** to tie tax functions and locations together in a common approach, user interface, and platform. Entry point for all things tax.

A **common and standardized set of collaborative tools and processes** to gain efficiencies and reduce operational risks.

A **central management set of standardized tools** to provide insight and access, reporting to operational information and controls.

A **central mechanism** to collect, report, and to provide analytics of tax data from data collected inside or outside of tax portal.
Tax portal landscape

**Financial data**
- SAP, Oracle, JDE, etc.
- TM1
- Other
- Master data

**Non-financial data**
- Nielsen
- IRI
- Surveys & data collects
- Other

**Data management**
- Data collection templates
- Survey templates
- Data integration platform

**Finance and Tax data model**
- Tax calendar
- Direct compliance
- Knowledge social
- Tax Reporting
- Provision
- Operation data
- Audit management
- Master/GL data

**Applications**
- Entity management
- Tax provision
- Direct income tax
- Corp Fin Reporting
- Treasury
- Insurance
- Advanced analytic & predictive models

**Control center**
- Workflows
- Dashboards
- Mobile analytics
- Knowledge/social
- Multi-dimensional
- Ad-hoc reports

**End user**
- Business executive
- Manager
- Causal user
- Community
The tax portal

- Direct tax compliance
- VAT/Sales & Use tax
- Audits
- Withholding tax
- Transfer pricing
- Excise tax
- Search & versioning
- Forms framework
- Document management & emails
- Tracker/calendar
- Security
- Workflow/Task mgmt
- Dashboard analytics
- Master data/entities
- Data management
- Data collection/surveys
- Knowledge management
- Security
Analytics
What is tax data analytics?

Tax data analytics combines **tax technical knowledge** plus **large sets of data** plus **new technology** tools to generate insights and deeper understanding. It can help an organization’s Tax function make smarter, real-time decisions to potentially improve performance of businesses and drive strategy.

Change the mindset from “what I need to do” to “what I need to know”
The evolution of analytics

**Analytics** is a discipline which focuses on the conversion of data to information, and information to actionable insight, which can be leveraged across the entire analytics spectrum.

**Foresight**
Determine the signals being generated across your ecosystem to shape the future

**Insight**
Use data from within the organization to drive changes here and now

**Hindsight**
Conduct assessments based on data generated by past operations

**Increasing business advantage**

### Predictive and Prescriptive
- Optimization algorithms
- Simulation and modeling
- Quantitative analyses
- Advanced forecasting

### Descriptive
- Role-based performance metrics
- Exceptions and alerts
- Slice and dice queries and drill-downs
- Management reporting
- Enterprise data management
Data visualization

Data visualization transforms data sets into a more graphical, interactive form. This allows users to easily analyze data, gain insights, and discover connections.

**Tableau**
- Tableau is a business intelligence tool to integrate data and create quick, interactive visualizations.

**Qlik**
- Qlik Sense and QlikView are two business intelligence tools for creating data visualization dashboards. Qlik Sense is free to download!

**SEMOSS**
- SEMOSS is a data middleware, which brings together data trapped in multiple repositories and presents it for analyzing.

**D3**
- D3 is an open-source JavaScript library that provides a catalog of visualizations using HTML, CSS, and SVG.

**Python**
- Python has various interactive data visualization libraries, such as Bokeh and Plotly.

**Watson Analytics**
- IBM Watson Analytics is a tool that incorporates data exploration, visualization, and predictive modeling for insights.
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