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CFO Breakfast Roundtable
A special edition for Life Science and Health Care Sector
Automation in Payables process, Big Data Analytics, and SG&A Benchmarking

The **CFO** Program

Today's agenda

Time	Session	Speaker
8:00 am	Doors Opening	
8:00 am – 8:20 am	Breakfast Networking	
8:20 am	Welcome Remark	**Christian Boettcher** Partner, Life Science and Health Care Specialist
8:25 am – 8:45 am	Automation in Payables process	**Pankaj Arjunwadkar** Director, CFO Program International Leader
8:45 am – 8:55 am	Big Data Analytics: Data has a better idea	**Bronte Tomlin** Senior Consultant, Data Scientist
8:55 am	Q&A	
9:00 am – 9:20 am	SG&A Benchmarking	**Oliver Will** Consultant, Life Science and Health Care Specialist
9:20 am	Wrap-up and Discussion	**Pankaj Arjunwadkar**
9:30 am	Closing	

Welcome Remark

Christian Boettcher
Partner
Life Science and Health Care Specialist

Automation in Payables process
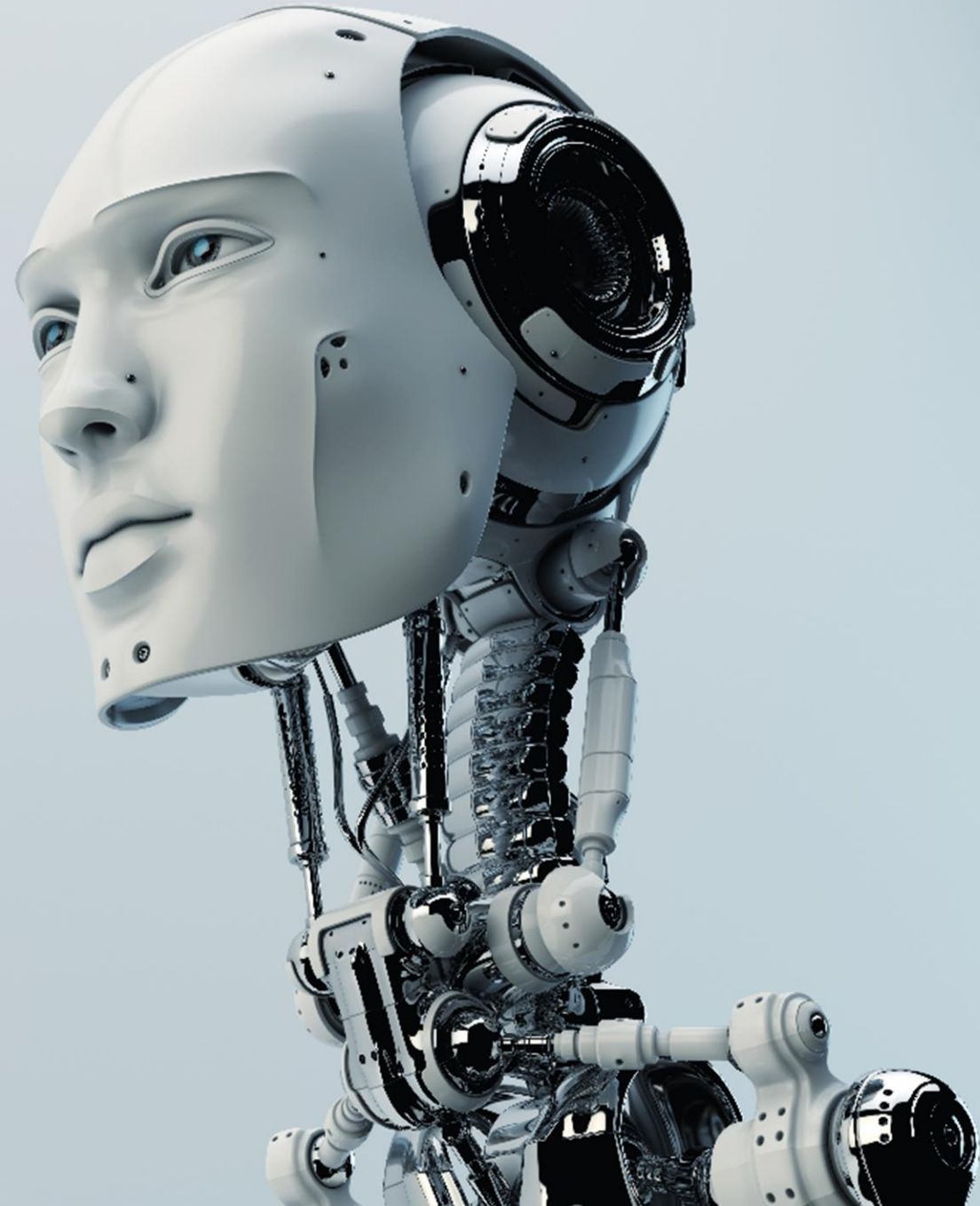
Pankaj Arjunwadkar
Director
CFO Program International Leader

Deloitte.

Robotic and Cognitive Automation
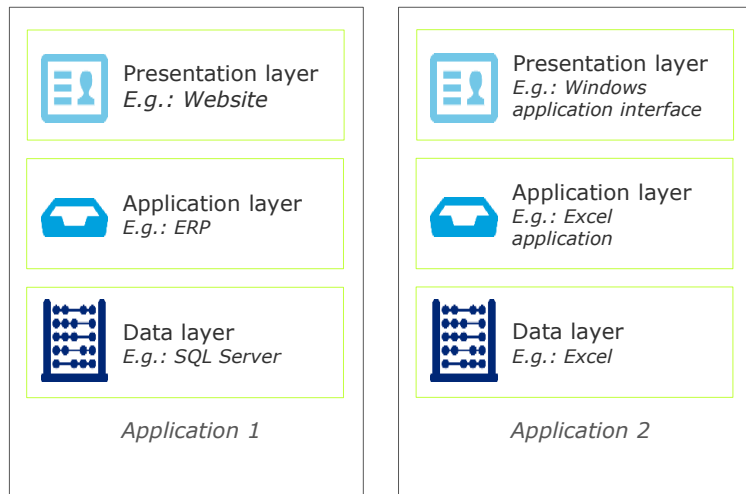**Unlocking value through RCA**

May 2019

What is RPA?

RPA mimics human interactions with software applications to automate many a repetitive, rule-based processes

Many a time, situations arise where two applications based on same /different technologies need to interact to complete a process…

Presentation layer *E.g.: Website*	**Presentation layer** *E.g.: Windows application interface*
Application layer *E.g.: ERP*	**Application layer** *E.g.: Excel application*
Data layer *E.g.: SQL Server*	**Data layer** *E.g.: Excel*
Application 1	*Application 2*

Organizations have usually responded by

- Manual intervention
- Backend automation

RPA presents an alternative approach to solving this problem

Manual intervention

Direct / Backend Automation

Robotic Process Automation

Having people interact with both applications

Integration at the application layer and/or data layer

Interaction at the presentation layer (user interface)

This approach to automation presents a quick means to automate processes with additional benefits to offer when compared to direct automation

.....in simple words

RPA is a technology that:

- **Interacts** with the **presentation layer** of the computer - the GUI - just like any person in this room would do
- **Work with any application**, just like you and me would do
- **Switch from one environment to another**, just anyone working on multiple applications
- **Validate data, make rule based, algorithmic decisions** within pre-defined parameters

And more importantly do this ...

- **24 X 7 X 365** without taking a break a sweat!

RPA is the natural evolution of labor arbitrage, it takes the **Robot Out of the Human** ... And enables computers to do what they were supposed to do

Typical process characteristics for RPA deployment

Typical back office processes suitable for RPA

Key Characteristics for 'Robotizing'

Finance Processes

Reporting, bank reconciliations, intercompany accounting, master data management (for example, vendor and customer account creation), fixed assets analysis, time and expenses auditing and credit assessment.

Operational Processes
Inventory and key performance indicator tracking.

HR Processes
Employee on boarding and leave of absence management.

Procurement Processes
Supplier validation and purchase order validation.

- Rules based with no judgement involved (Note - many activities such as evaluation are not judgement and can be codified with rules)

- No need for voice interaction

- Electronic data rather than paper; though OCR can be used as part of the robotic process to convert to electronic data

- Sufficient part of the process to justify the automation i.e. sufficient volume (process repeats and FTE currently involved)

Typical process characteristics for RPA amenability

Repetitive	Rule based	Transactional	Low level of judgement	Minimum exceptions

Note: Robotic tools are not invasive, i.e. they use the front end and existing application security, so tend to be quick to implement and have rapid payback periods

What is Cognitive Computing?

Cognitive systems employ technology and algorithms to automatically extract concepts and relationships from data, "understand" their meaning, and learn independently from data patterns and prior experience

Human intellect...

Learn and Improve

Identify Semantics

Reason and Make Decisions

Apply context and Interact

Recognize and Understand

...mimicked by a computer...

Generating Insights

Reasoning & Learning

Text Understanding

Speech Recognition

Image Recognition
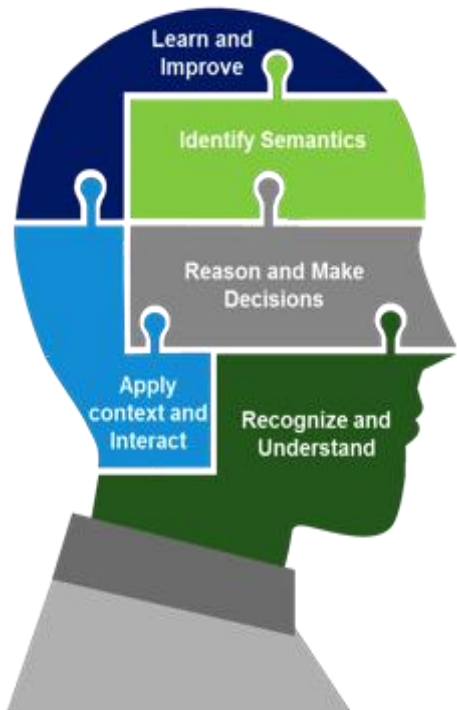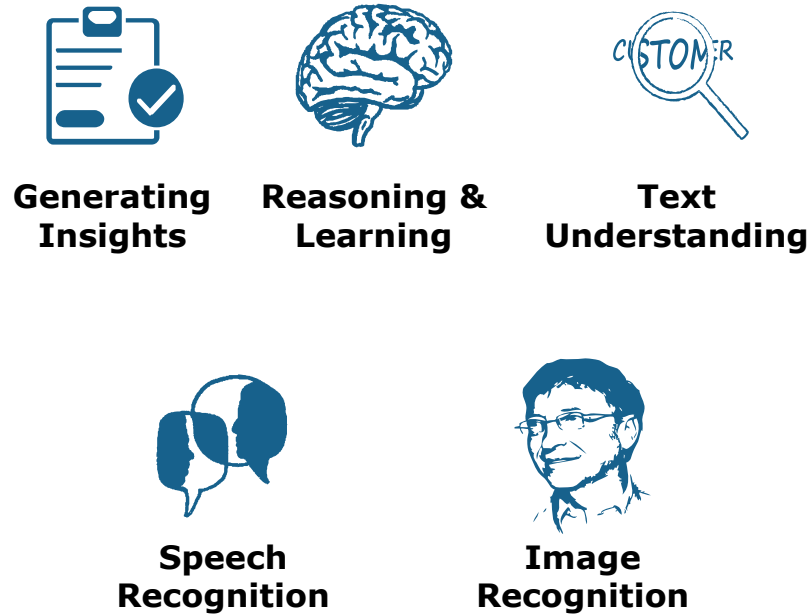
...accomplishing complex tasks.

Cognitive Insights	Cognitive Engagement
Detect key patterns and relationships from billions of data sources in real-time to derive deep and actionable insights	Improve customer understanding and activation through mass personalization, influencing desired actions

Cognitive Automation	Cognitive Sensing & Shaping
Automate repetitive, knowledge and natural language rich, human intensive decision processes	Build a deep understanding and knowledge of company, market dynamics, and disruptive trends to shape strategies

Robotic and Cognitive Automation Case Study
Accounts Payable - Cognitive Proof of Concept using Abbyy Flexicapture ICR and Blue prism

Case Study I – Robotics and Cognitive Automation (RCA) in Vendor invoice processing

Deloitte is supporting a global technology company based in Singapore, develop a state of the art shared service centre using RCA in AP, AR and R2R functions

Business Issue

- The client is one of the largest global technology companies with significant market share in APAC

- The client has operations in 13 countries in APAC and currently has disparate accounting systems, non-standardized processes, significantly high headcount and associated costs

- The client has large a number of invoices received from vendors in multiple formats and languages. A significant number of invoices are in pdf format or hardcopies which requires high manual intervention for processing

- The client wanted to set up a state of the art Finance shared service centre using the latest digital solutions

Scope

- The project included developing standardized and centralized process maps which would cater to the requirements of 13 countries

- As a part of the project, the client wanted to test Cognitive solution in Invoice processing and requested Deloitte to carry out a Proof of Concept using Abbyy Flexicapture Intelligent Character Recognition tool and BluePrism RPA

- Post the successful PoC, client invited Deloitte to implement the solution as a part of the set up of the Shared Services centre

Invoice Processing using Cognitive and Robotics capabilities

Hardcopy/ pdf copies of invoices are converted into electronic form using OCR technology, followed by Machine Learning / Template based technology to recognize and classify data. RPA bots use the electronic data extracted into SAP
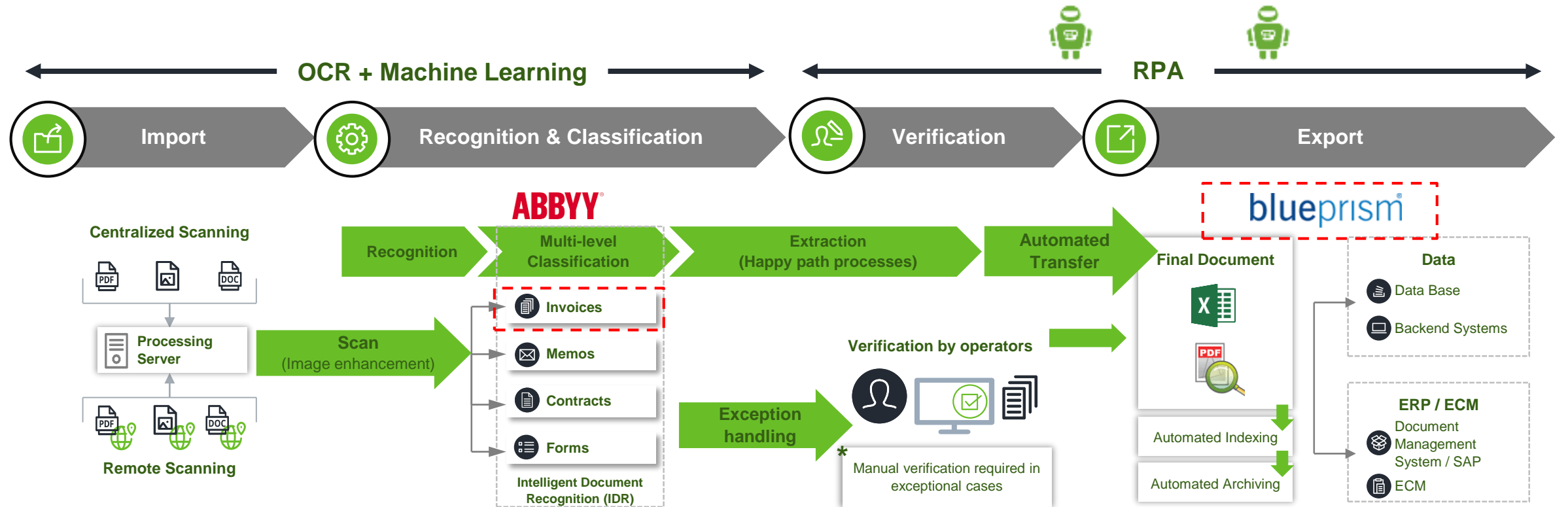
Scope of Cognitive PoC

The PoC was tested on 270 invoices on 8 different criteria to determine the capability of ABBYY Flexicapture tool

1
Countries (8)

Singapore,   Philippines,

India,   Korea,

China,   Japan,

Hong Kong,   Thailand

2
Language variations (5)

English, Mandarin, Thai, Korean, Japanese

3
Type of Invoices (4)

PO and Non-Po

Trade and Non-Trade

4
Input type

JPG, PDF, GIF, Hardcopy, Handwritten, With Barcodes

5
Number of Pages

Single page invoices

Multiple page invoices

6
Document Resolution

Above 300 dpi and

Below 200 dpi

7
Number of Vendors

Approximately 30 different formats

8
SAP fields

All key SAP fields captured

Summary observations

Overall, we envisage significant benefits of implementing ABBYY Flexicapture in Invoice processing activity, given that the high volume top trade vendors have standard invoice formats with high success rates
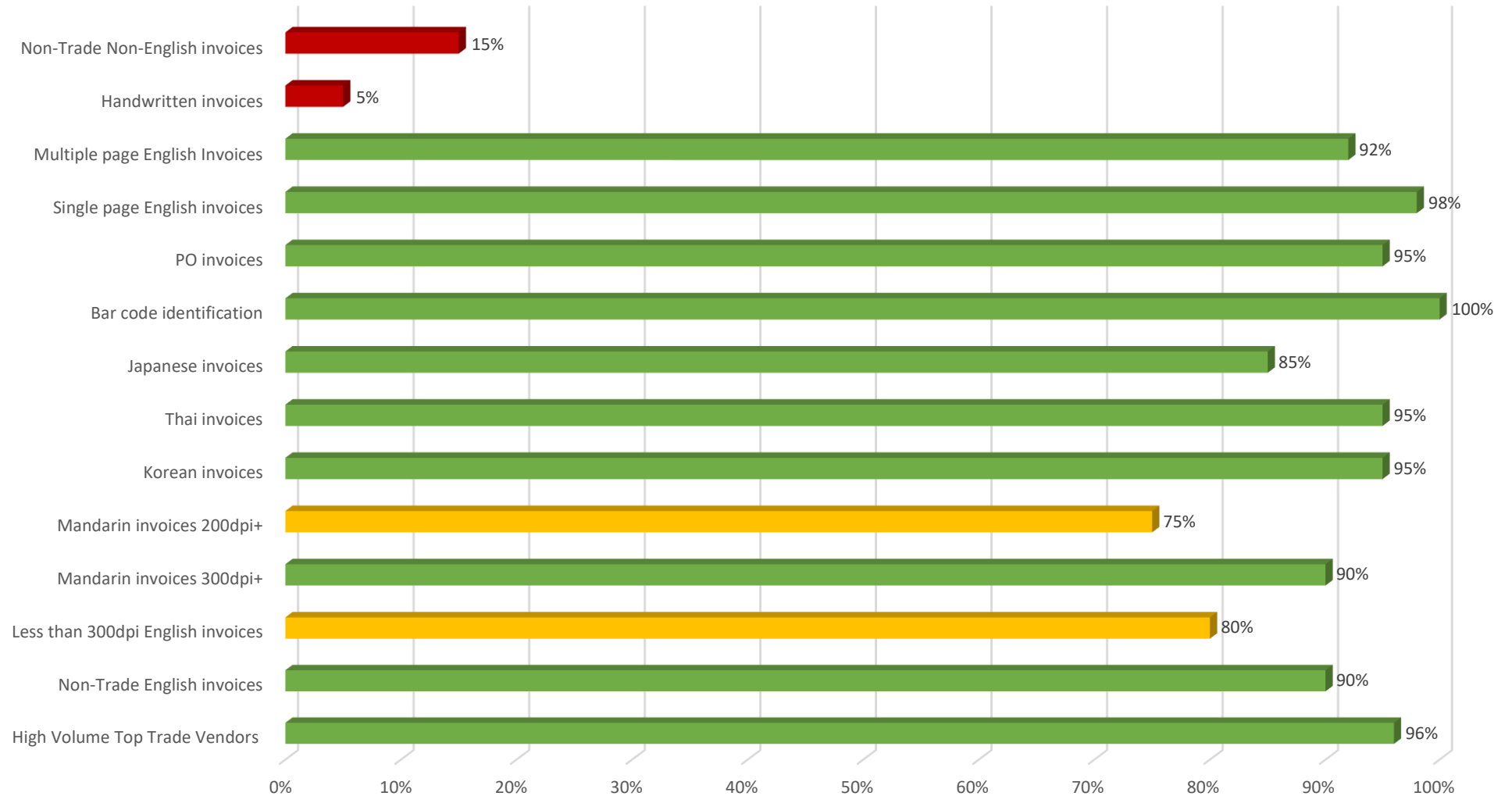
Benefit analysis

Based on the volumetric analysis, we can expect ~65-70% saving in FTE with the use of ABBY Flexicapture

As-is Invoice processing (Manual)

Total number of invoices processes annually

151765

Number of invoices processed per hour

10.01

Number of FTE engaged in invoice processing

11.85

Time required to process one invoice

6.00 mts

To-be Invoice Processing (RCA)

Number of invoices processed per hour

30.00

Total FTE required

3.95

1.00

1.00

Net FTE Benefit: 7.90

(67% saving)

Demonstration of the Cognitive solution on Invoice processing

Flexicapture has 4 core processes viz Load Images, Recognize, Run Verification and Export
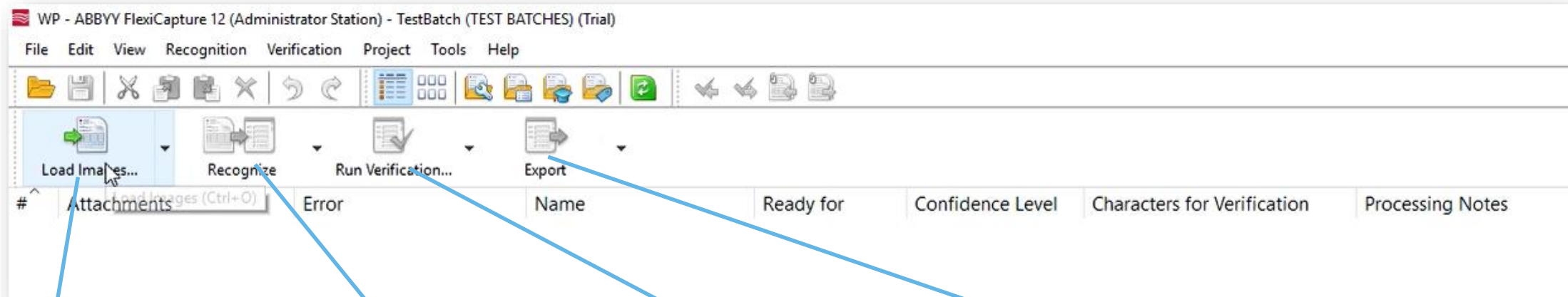
Documents are fed into the software in the module. Bulk loading of invoices is possible for multiple uploading	Where actual OCR/ICR happens. Recognition is based on the "Document definition"	Where the software shows the characters that were not recognized 100% for correction, if necessary. Such characters are displayed in RED font	Where extracted information can be saved in various formats- Excel, Word, Pdf etc

Loading images
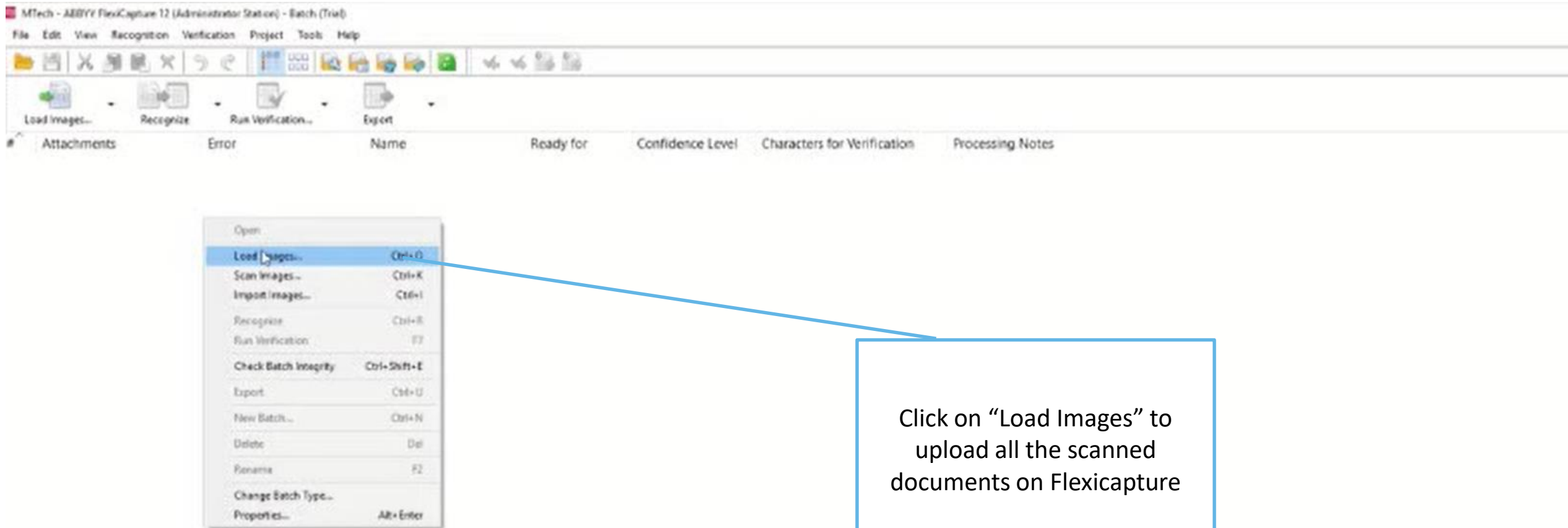
Click on "Load Images" to upload all the scanned documents on Flexicapture

Loading images- Bulk upload of documents

Bulk upload of Invoices in Flexicapture
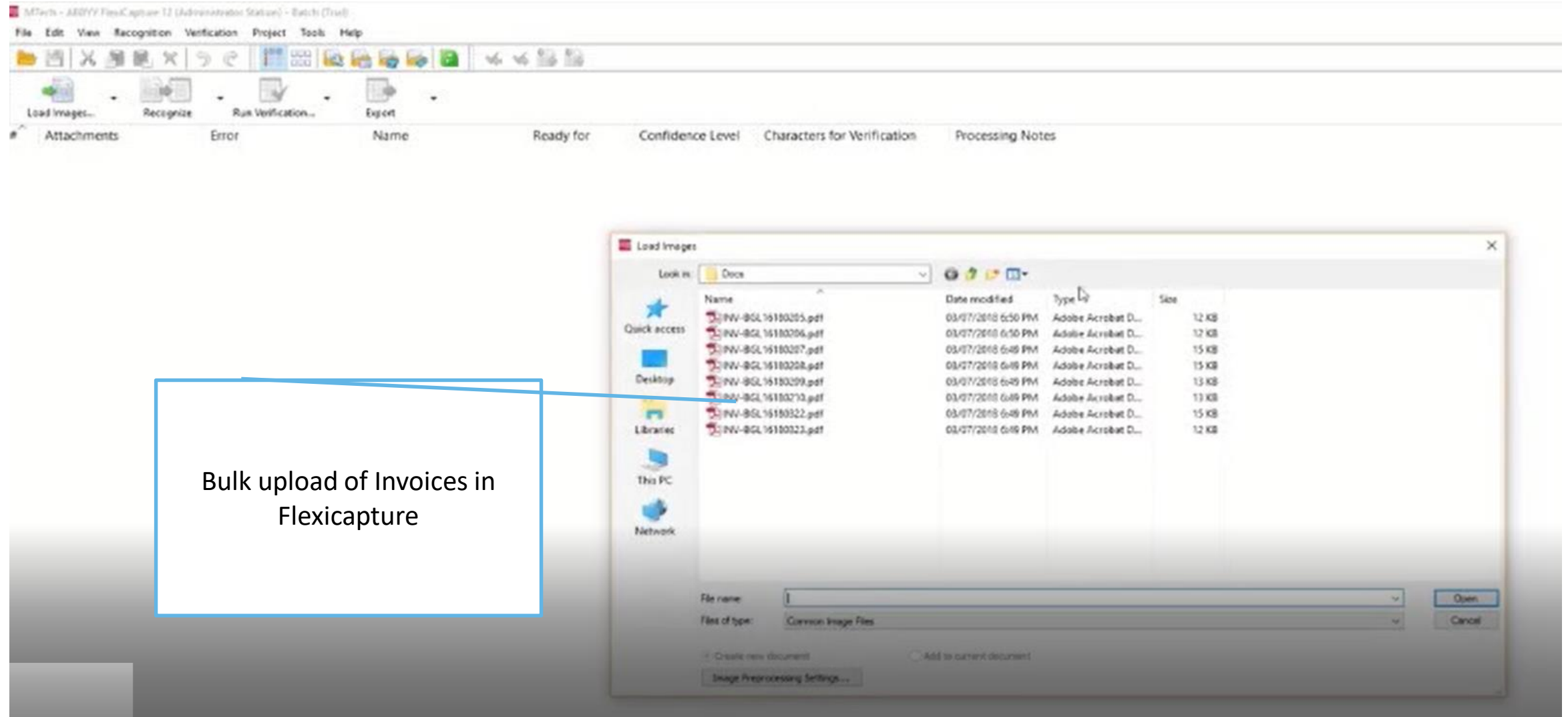
Loading images- Bulk upload of documents
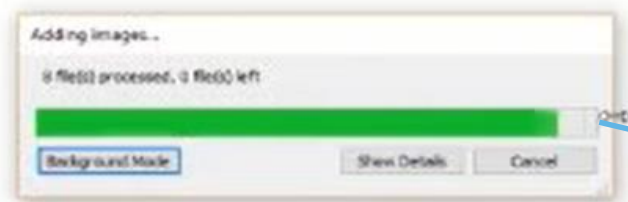
Bulk upload of Invoices in Flexicapture

(Time: 15-20 seconds)

Image recognition and Verification

Once the documents are uploaded, they are recognized using Machine Learning capability to determine the "Confidence level"

(Time: 30-35 seconds)

Character verification determines the success of Flexicapture.

The next step is to edit data (if not 100% recognized)

Invoices 100% recognized

Clear invoices with no ambiguity are 100% recognized and can be directly exported to Excel / SAP/Other output forms

Invoice Verification (in case less than 100% success)

Output in Excel

Output in Excel can be used by the RPA bot to enter in SAP/ Other ERPs. Alternatively, Flexicapture can be directly configured to enter data in ERPs

Big Data Analytics:
Data has a better idea

Bronte Tomlin
Senior Consultant
Data Scientist

Big Data Analytics

Starting from the top

Data in its purest form is not information

DATA

- Data is a set of characters, numbers and symbols that is stored in, or used by, a computer.

- In other words, data is a collection of unorganized **facts** which standalone are rarely useful.

- Data can be seen as *bits* or information, but not information itself.

INFORMATION

- Information is created when data is processed, interpreted, organized, structured and presented in a meaningful or useful way.

- More simply, information is structured, logically organized data.

For example…
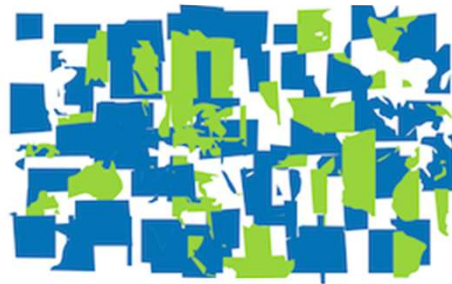
DATA

INFORMATION

The crucial step

By ordering, structuring and analyzing data, meaning can be inferred and information generated

PROCESSING

- To generate information, effort has to be put into ordering, structuring and analyzing the underlying data.

- It is within this processing activity that all data analysis sits.

DATA

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INFORMATION

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What defines Big Data?

The main characteristic that differentiates data from "big data" is volume

Big Data = *data **input into your systems** + data **captured by the systems themselves**+ data **available in external systems***

- Big data generally refers to **datasets so large and complex** they create **significant challenges for traditional data management and analysis tools** in practical timeframes.

- In most enterprise scenarios the volume of data generated by the organization is so big that it exceeds their current processing capacity. This is before they start to enrich their data with external data sets.

- To reduce the load on the processing systems, much of the data generated by the systems is classified auto-archived and forgotten.

Volume

BIG DATA

Meteorological data

Logo recognition

Videos multimedia

Meteorological data

WEB

Search marketing

Social media

Behavioral targeting

User click stream

Dynamic pricing

Geospatial data

Sentiment analysis

CRM

Customer detail

Website logs

Sensors/ RFID/ devices

Customer representatives

Affiliate networks

External Demographics

ERP

Purchase details
Purchase records
Payment record

Sales representative

A/B testing

Credit card spend patterns

Engagement channel

Offer history

Complexity

What is Big Data Analytics?

Big Data Analytics is the complex process of examining large and varied data sets to uncover hidden insights

" *Big Data Analytics uses technologies that can efficiently store and process all this data, paired with tools and techniques that have the capability to analyze large and varied datasets to derive.* "

Now that multiple data sets can be combined in such a way, new questions can be asked of the data, which is where the world of big data becomes really interesting, and where organizations develop a competitive advantage.

As you incorporate more data points, you're improving the quality and reliability of your insights. The more complete the context is surrounding the data, the more accurate a picture you will form.
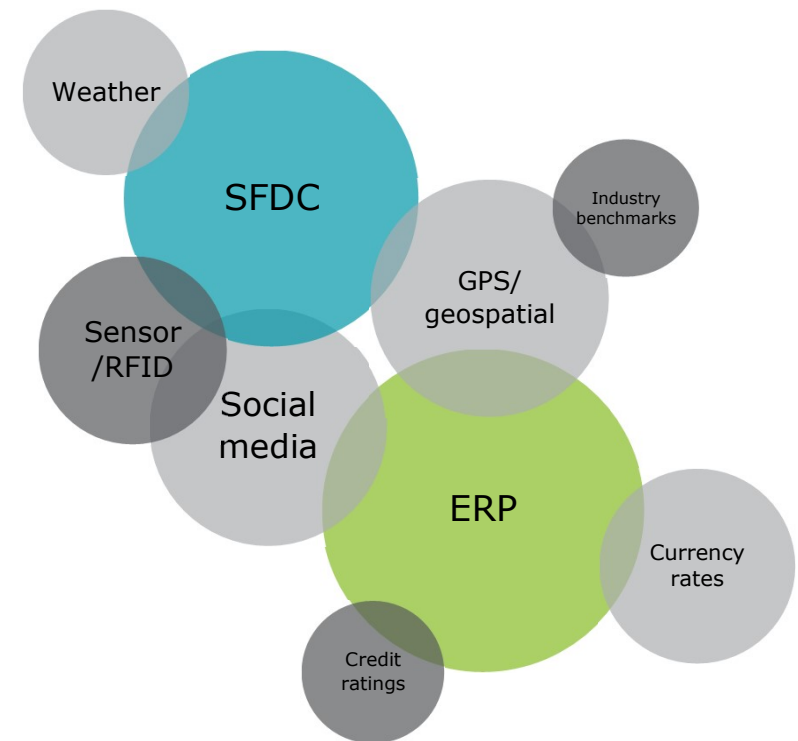
Big Data Analytics in the Life Sciences & Healthcare industry

There are a vast number of use cases for Big Data Analytics in the LS&HC industry

Phase IV clinical trials analysis

Track the drug's performance in real life scenarios and monitor the public's reaction using social media data. Monitoring the trial in such a way will expose any previously unknown risks, benefits and rare side effects of the drug and allow for a timely response.

Targeted patient selection

Patients can be targeted on using significantly more criteria (for instance, genetic information, disease status, and individual characteristics) into account to target specific populations, thereby enabling trials that are smaller, shorter, less expensive, and more powerful.

Campaign and marketing management

Identify whether your marketing spend is reaching your targeted audience and whether it is translating directly into sales.

Digitalization of the workforce

Analyze the impact on sales and expenses on moving away from traditional face-to-face engagement models to alternative digital channels.

Clinical trial enrichment

Trials are tracked in real time through wearable technologies to rapidly identify safety or operational signals requiring action to proactively monitor the patients health and avoid significant, and potentially costly, issues.

SG&A optimization

Analyze the company's day –to-day expenses allowing you to identify areas of inefficiency and highlight opportunities for cost optimization.

Q&A

SG&A Benchmarking

Oliver Will
Consultant
Life Science and Health Care Specialist

SG&A Benchmarking

CFO round table

Thursday, 16th May 2019

Background and value being delivered

This benchmarking study enables a comparison of your organisation's SG&A spend to your peers', and will clearly identify improvement opportunities

Situation

- Global pharmaceutical companies operating in Japan constantly face price and profit pressures
- Global pharmaceutical companies operating in Japan often function in a different culture, policy, and economy than from their operations in other countries/markets
- Corporate cost takeout initiatives have been implemented in efforts to improve profit margins

Needs

CFOs typically want to know:

- *How are we spending our SG&A budget compared to our industry peers in Japan?*
- *What are the key metrics needed to understand SG&A spend performance in this market?*
- *For which SG&A categories and metrics could we realign our spending to deliver a better return on investment based on our overall strategy?*

Value delivered by the SG&A benchmarking study

Deloitte leverages **a tested industry and market specific SG&A approach** to provide each participating company with the following insights:

- Comprehensive comparison to peers across 10 different categories of SG&A spend
- Robust set of high and low level key metrics to help you understand spend performance – internally and compared to peers
- Identification of areas relative overspend and potential underspend vis-à-vis your strategic priorities
- High-level suggestions for improvement initiatives and initial view on potential improvement

Japan Participation for SG&A initiatives

The study had 7 companies as part of Wave 1, 2 & 3 with discussions regarding a wave 4 currently in progress

Wave 1, 2, and 3 participants

MSD · janssen · NOVARTIS · Boehringer Ingelheim · Lilly · novo nordisk · SANOFI

Potential future participants*

Bristol-Myers Squibb · Pfizer · gsk · Daiichi-Sankyo · AstraZeneca · CHUGAI · astellas · Takeda · abbvie
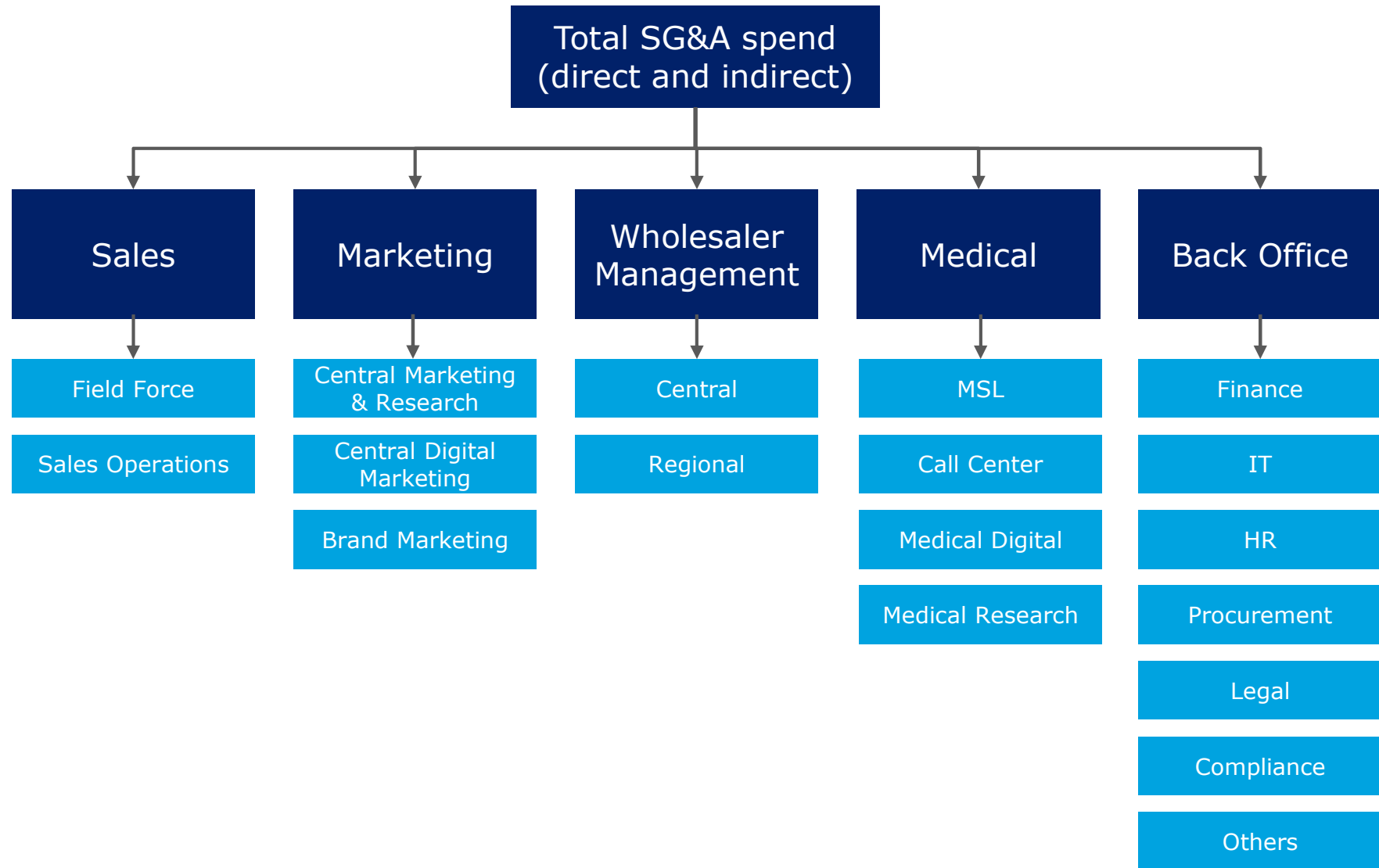
***In discussion**

Functional view of total SG&A spend and headcount

In addition to the category view, we have compared headcount and total expenses at a functional level

FTE and Total Functional Cost (including payroll costs)

```
                    Total SG&A spend
                   (direct and indirect)

   Sales      Marketing    Wholesaler    Medical      Back Office
                           Management

Field Force   Central      Central       MSL          Finance
              Marketing
              & Research

Sales         Central      Regional      Call Center  IT
Operations    Digital
              Marketing

              Brand                      Medical      HR
              Marketing                  Digital

                                         Medical      Procurement
                                         Research

                                                      Legal

                                                      Compliance

                                                      Others
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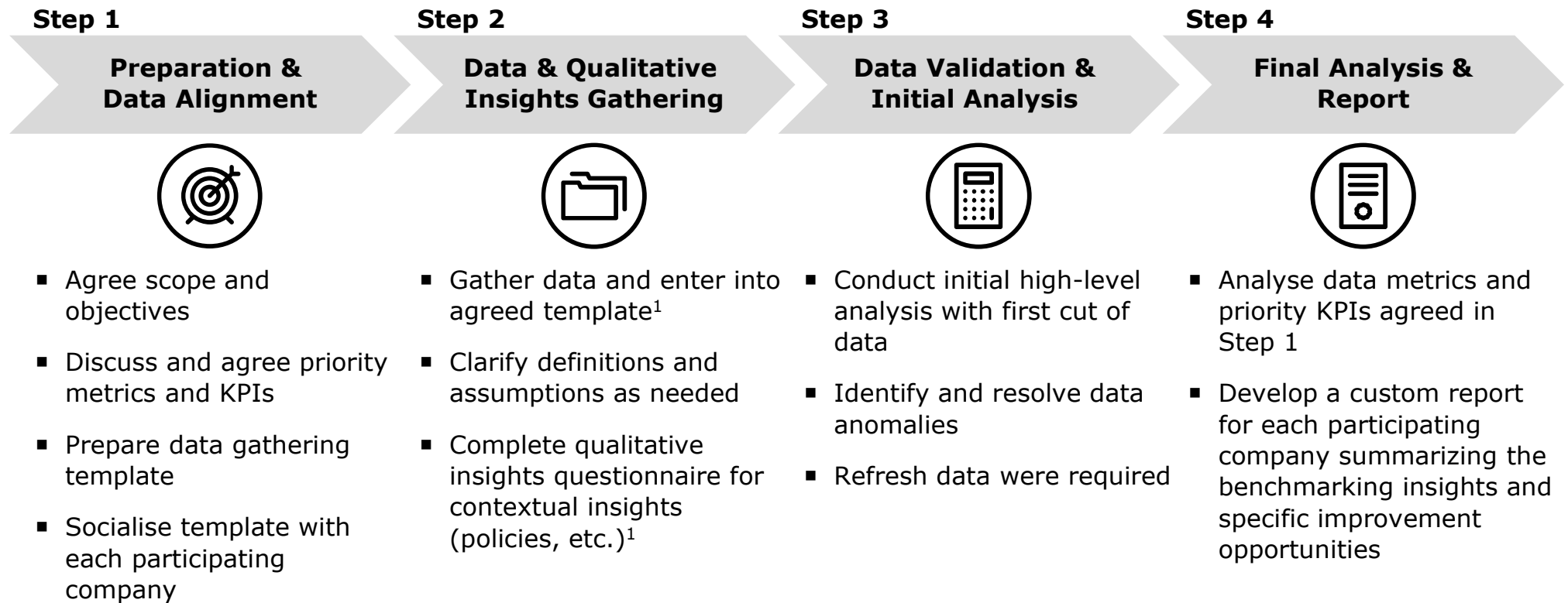
Category scope (1 of 2)

We have tailored the analysis based on the following categories, allowing for detailed cost and efficiency analysis across more than 300 KPIs

KPIs cover both financial and non-financial metrics

Area	Category	Subcategories
Commercial	**Sales**	▪ Field Force productivity ▪ Field Force comp & ben structure ▪ MR explanatory meetings ▪ Field Force infrastructure ▪ Field force support
	Events	▪ National conferences ▪ Regional symposia ▪ Event planning and management ▪ e-Events
	Marketing	▪ Primary market research ▪ Secondary market research ▪ Digital ▪ Advertising & Print
Medical	**Medical & Scientific Support**	▪ MSL productivity ▪ Primary medical research ▪ Medical Digital & Content ▪ Medical events ▪ Phase 4 trials ▪ Grants and Donations
General	**Real Estate**	▪ Field offices ▪ Facilities management ▪ HQ office space
	Travel	▪ Rail travel ▪ Domestic air ▪ International air ▪ Travel control ▪ Hotels

Category scope (2 of 2)

We have tailored the analysis based on the following categories, allowing for detailed cost and efficiency analysis across more than 300 KPIs

KPIs cover both financial and non-financial metrics

Area	Category	Subcategories
General Other	**IT**	▪ n/a (Total cost only)
	Office	▪ n/a (Total cost only)
	People	▪ Learning & Development ▪ Recruiting ▪ Contractors & Outsourcing
	Professional Services	▪ n/a (Total cost only)
	Other	▪ All remaining cost not captured in sub-categories

SG&A benchmarking overall project approach

Deloitte's tested industry benchmarking approach delivers actionable insights to assist in optimizing SG&A spending

Step 1

Preparation & Data Alignment

- Agree scope and objectives
- Discuss and agree priority metrics and KPIs
- Prepare data gathering template
- Socialise template with each participating company

Step 2

Data & Qualitative Insights Gathering

- Gather data and enter into agreed template[1]
- Clarify definitions and assumptions as needed
- Complete qualitative insights questionnaire for contextual insights (policies, etc.)[1]

Step 3

Data Validation & Initial Analysis

- Conduct initial high-level analysis with first cut of data
- Identify and resolve data anomalies
- Refresh data were required

Step 4

Final Analysis & Report

- Analyse data metrics and priority KPIs agreed in Step 1
- Develop a custom report for each participating company summarizing the benchmarking insights and specific improvement opportunities

Client data will be anonymized to ensure client confidentiality is maintained

[1] Each participating company to dedicate resources

Example output: Executive summary view

Each company is provided with their output compared to the lowest, average and highest value for each KPI
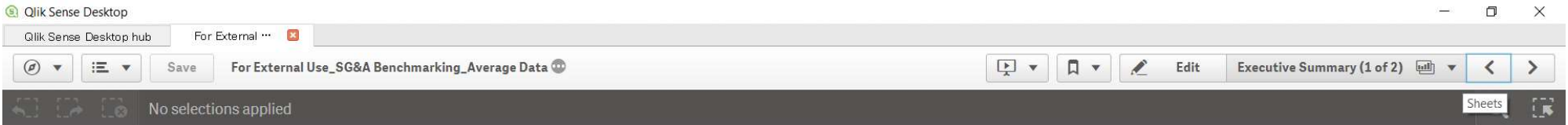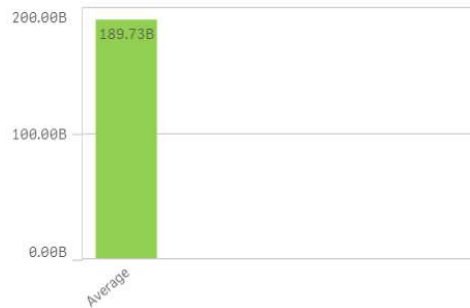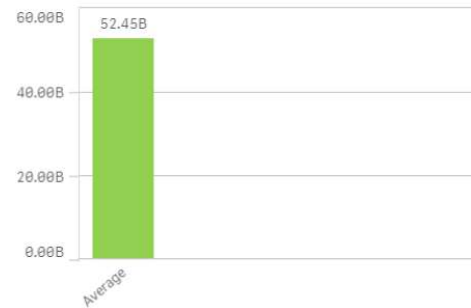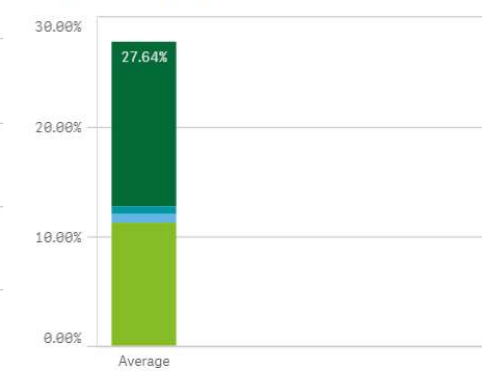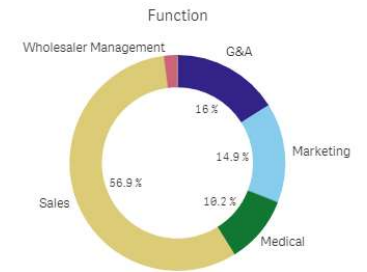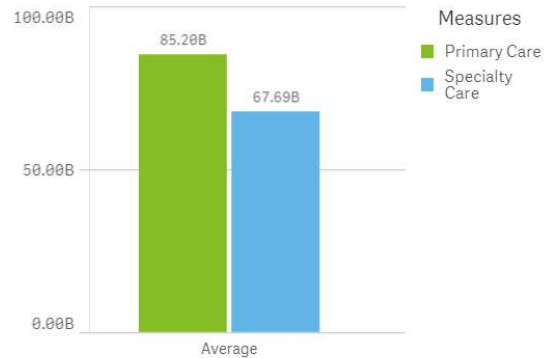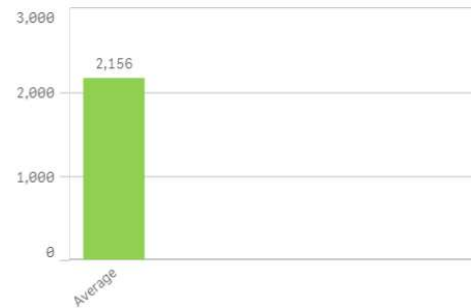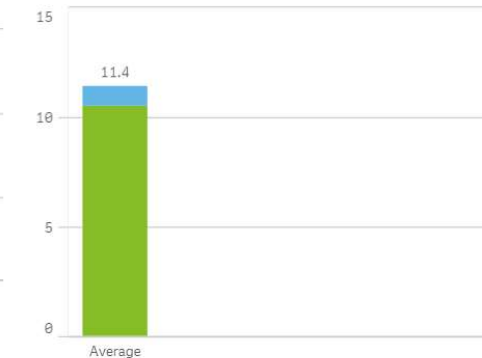
Next Steps

We plan to continue and expand our SG&A benchmarking activities going forward

1   **Pharma SG&A Benchmarking 2020 Data refresh**

- Refresh the benchmark with the current participants using 2019 data to see the impact of activities firms have undertaken based on the original benchmark
- Tweak/Add some KPIs based on learnings from wave 1, 2 & 3

2   **MedTech SG&A Benchmarking**

- Currently initial discussions for a joint EMEA/Japan MedTech benchmarking
- Using tools from the Japan Pharma benchmarking but adapting KPIs to the Med-Tech needs

3   **Other LSHC SG&A benchmarking initiatives**

- Currently discussing a further wave with Japanese pharma companies
- Currently in talks with pharma MNCs in Indonesia for benchmarking there

Wrap-up and Discussion

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