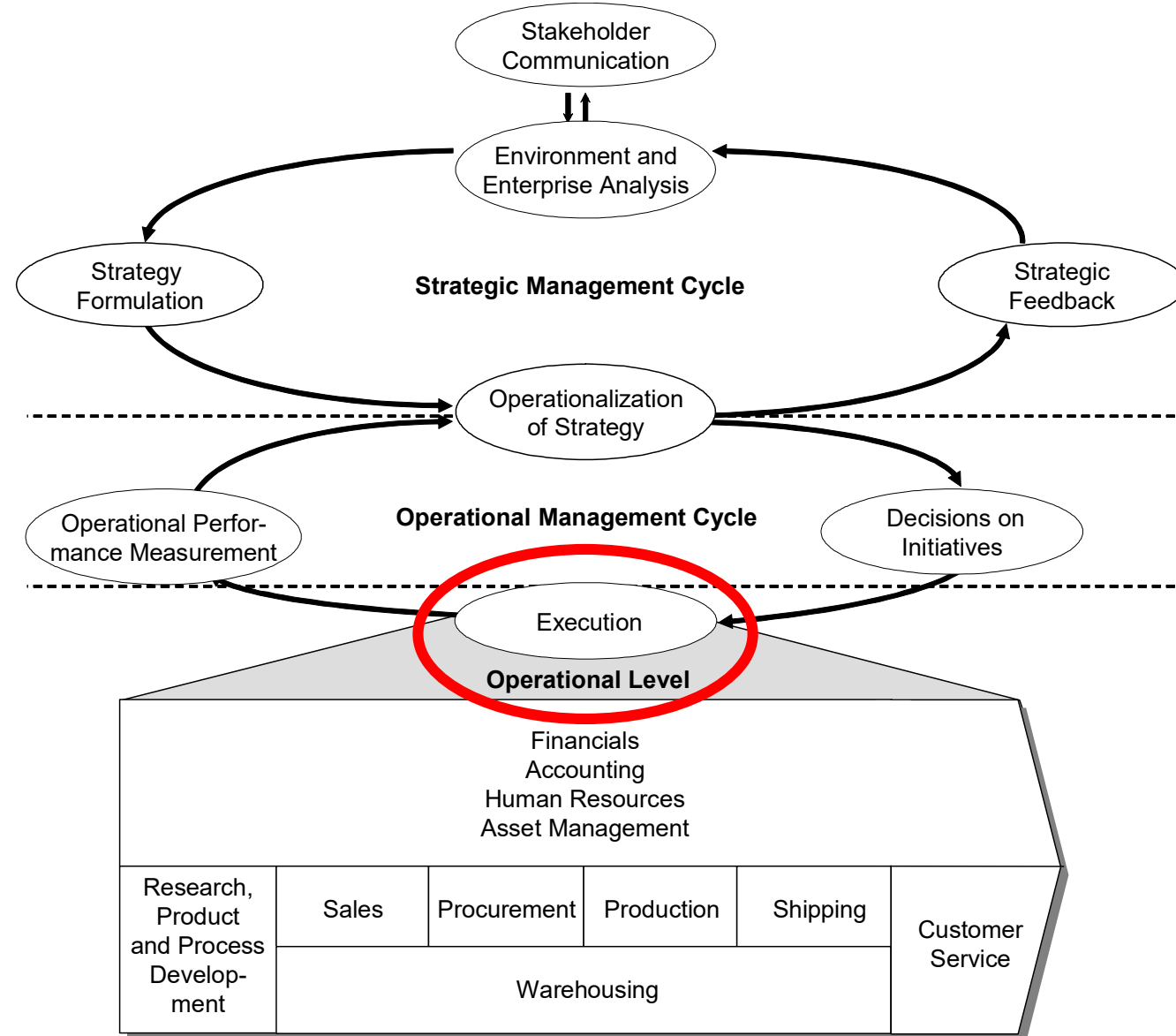# Business Analytics

What are we going to do?

- Presentation.

- What is Business Analytics?

- Impact of Business Analytics in a Company. General approach.
  - Objectives: We will dedicate this sessions to analyze what is the impact of gathering, managing and analyzing data in the different areas of a Company
    - Strategy.
    - Technology.
    - Business Processes.

Business Processes

| Strategy		
Clients	Culture	Business processes
Product & Services	Organization	Technology
Finance		

Execution. Value Chain

Execution. Value Chain

- A value chain is a set of activities that a firm operating in a specific industry performs in order to deliver a valuable product or service for the market.

- The idea of the value chain is based on the process view of organizations, the idea of seeing a manufacturing (or service) organization as a system, made up of subsystems each with inputs, transformation processes and outputs.

- Inputs, transformation processes, and outputs involve the acquisition and consumption of resources – money, labor, materials, equipment, buildings, land, administration and management. How value chain activities are carried out determines costs and affects profits.

Execution. Value Chain

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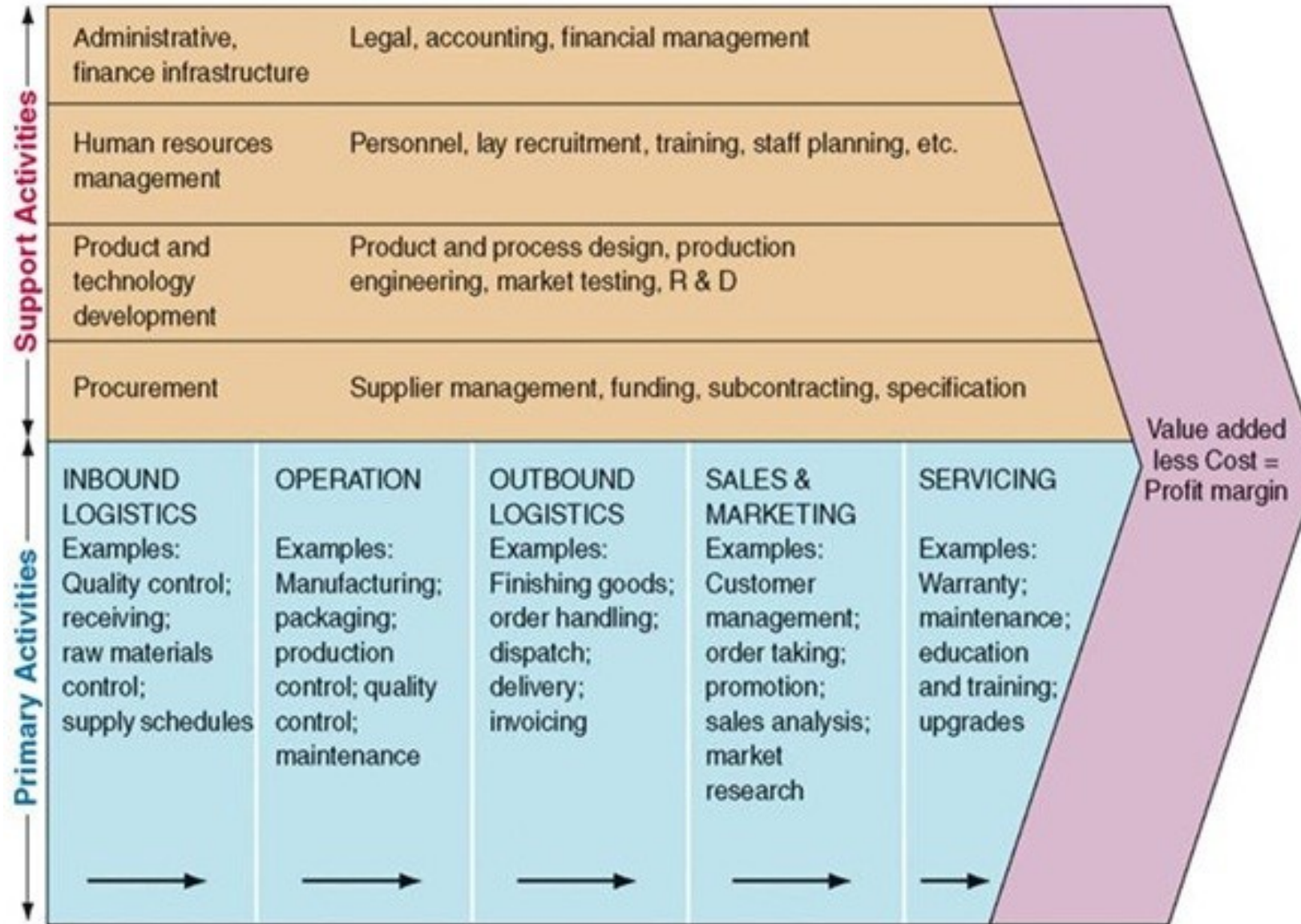
Execution. Value Chain

- Primary activities
  - Inbound Logistics: arranging the inbound movement of materials, parts, and/or finished inventory from suppliers to manufacturing or assembly plants, warehouses, or retail stores
  - Operations: concerned with managing the process that converts inputs (in the forms of raw materials, labor, and energy) into outputs (in the form of goods and/or services).
  - Outbound Logistics: is the process related to the storage and movement of the final product and the related information flows from the end of the production line to the end user
  - Marketing and Sales: selling a product or service and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large.
  - Service: includes all the activities required to keep the product/service working effectively for the buyer after it is sold and delivered.

Execution. Value Chain

- Support activities
  - Procurement: the acquisition of goods, services or works from an outside external source
  - Human Resources Management: consists of all activities involved in recruiting, hiring, training, developing, compensating and (if necessary) dismissing or laying off personnel.
  - Technological Development: pertains to the equipment, hardware, software, procedures and technical knowledge brought to bear in the firm's transformation of inputs into outputs.
  - Infrastructure: consists of activities such as accounting, legal, finance, control, public relations, quality assurance and general (strategic) management.

Execution. Value Chain. How to build.

- Step 1 – Identify sub activities for each primary activity. For each primary activity, determine which specific sub activities create value.

- There are three different types of sub activities:

  - Direct activities create value by themselves. For example, in a book publisher's marketing and sales activity, direct sub activities include making sales calls to bookstores, advertising, and selling online.

  - Indirect activities allow direct activities to run smoothly. For the book publisher's sales and marketing activity, indirect sub activities include managing the sales force and keeping customer records.

  - Quality assurance activities ensure that direct and indirect activities meet the necessary standards. For the book publisher's sales and marketing activity, this might include proofreading and editing advertisements.

- Step 2 – Identify sub activities for each support activity. For each of the Human Resource Management, Technology Development and Procurement support activities, determine the sub activities that create value within each primary activity.

  - For example, consider how human resource management adds value to inbound logistics, operations, outbound logistics, and so on. As in Step 1, look for direct, indirect, and quality assurance sub activities.

- Then identify the various value-creating sub activities in your company's infrastructure. These will generally be cross-functional in nature, rather than specific to each primary activity. Again, look for direct, indirect, and quality assurance activities.

Execution. Value Chain. How to build.

- Step 3 – Identify links. Find the connections between all of the value activities you've identified. This will take time, but the links are key to increasing competitive advantage from the value chain framework.

  - For example, there's a link between developing the sales force (an HR investment) and sales volumes. There's another link between order turnaround times, and service phone calls from frustrated customers waiting for deliveries.

- Step 4 – Look for opportunities to increase value. Review each of the subactivities and links that you've identified, and think about how you can change or enhance it to maximize the value you offer to customers (customers of support activities can internal as well as external).

Execution. Value Chain Analysis

Execution. Value Chain Analysis

- Value Chain Analysis is a three-step process:
  - Activity Analysis: First, you identify the activities you undertake to deliver your product or service.
  - Value Analysis: Second, for each activity, you think through what you would do to add the greatest value for your customer.
  - Evaluation and Planning: Thirdly, you evaluate whether it is worth making changes, and then plan for action.

Execution. Value Chain Analysis

- Step 1 – Activity Analysis
  - The first step is to brainstorm the activities that you, your team or your company undertakes that in some way contribute towards your customer's experience.
  - At an organizational level, this will include the step-by-step business processes that you use to serve the customer. These will include marketing of your products or services; sales and order-taking; operational processes; delivery; support; and so on (this may also involve many other steps or processes specific to your industry).
  - At a personal or team level, it will involve the step-by-step flow of work that you carry out.
  - But this will also involve other things as well. For example:
    - How you recruit people with the skills to give the best service.
    - How you motivate yourself or your team to perform well.
    - How you keep up to date with the most efficient and effective techniques.
    - How you select and develop the technologies that give you the edge.
    - How you get feedback from your customer on how you're doing, and how you can improve further.

Execution. Value Chain Analysis

- Step 2 – Value Analysis
  - Now, for each activity you've identified, list the "Value Factors" – the things that your customers value in the way that each activity is conducted.
  - For example, if you're thinking about a telephone order-taking process, your customer will value a quick answer to his or her call; a polite manner; efficient taking of order details; fast and knowledgeable answering of questions; and an efficient and quick resolution to any problems that arise.
  - If you're thinking about delivery of a professional service, your customer will most likely value an accurate and correct solution; a solution based on completely up-to-date information; a solution that is clearly expressed and easily actionable; and so on.
  - Next to each activity you've identified, write down these Value Factors.
  - And next to these, write down what needs to be done or changed to provide great value for each Value Factor.

Execution. Value Chain Analysis

- Step 3 – Evaluate Changes and Plan for Action
  - By the time you've completed your Value Analysis, you'll probably be fired up for action: you'll have generated plenty of ideas for increasing the value you deliver to customers. And if you could deliver all of these, your service could be fabulous!
  - Now be a bit careful at this stage: you could easily fritter your energy away on a hundred different jobs, and never really complete any of them.
  - So firstly, pick out the quick, easy, cheap wins – go for some of these, as this will improve your team's spirits no end. Then screen the more difficult changes. Some may be impractical. Others will deliver only marginal improvements, but at great cost. Drop these.
  - And then prioritize the remaining tasks and plan to tackle them in an achievable, step-by-step way that delivers steady improvement at the same time that it keeps your team enthusiastic.

Execution. Value Chain Analysis

- Example:
  - Lakshmi is a software development manager for a software house. She and her team handle short software enhancements for many clients. As part of a team development day, she and her team use Value Chain Analysis to think about how they can deliver excellent service to their clients.
  - During the Activity Analysis part of the session, they identify the following activities that create value for clients:
    - Order taking
    - Enhancement specification
    - Scheduling
    - Software development
    - Programmer testing
    - Secondary testing
    - Delivery
    - Support

Execution. Value Chain Analysis.

Figure 1: Value Chain Analysis Example

Step 1: Activity Analysis | **Step 2: Value Analysis**

Value Chain

- Order Taking
- Specification
- Scheduling

Value Factors

- Fast answer to phones
- Knowledge of customer's situation and system
- Understand needs accurately
- Manage expectations

- Accurate, comprehensive description of changes
- Easily understandable
- Lists all activities
- Explains basis of price

- Set expectations clearly
- Clear statement
- Meet commitments
- Timely job start

Changes Needed

- 3 rings rule, then all ring
- Team updates on clients
- Team training on systems
- Training on client industry
- Client briefing at end of call

- Training in writing & proofing
- Internal review for clarity
- Use aide memoire to ensure all points considered
- Description of all activities

- Accurate time estimation
- Scheduling system needed
- Contingency time in schedule
- Need sufficient capacity

- Lakshmi also identifies the following non-client-facing activities as being important:
  - Recruitment: Choosing people who will work well with the team.
  - Training: Helping new team members become effective as quickly as possible, and helping team members learn about new software, techniques and technologies as they are developed.
- Lakshmi marks these out in a vertical value chain on her whiteboard

Execution. Value Chain Analysis

- Next, she and her team focus on the Order Taking process, and identify the factors that will give the greatest value to customers as part of this process. They identify the following Value Factors:
    - Giving a quick answer to incoming phone calls.
    - Having a good knowledge of the customer's business, situation and system, so that they do not waste the customer's time with unnecessary explanation.
    - Asking all the right questions, and getting a full and accurate understanding of the customer's needs.
    - Explaining the development process to the customer and managing his or her expectations as to the likely timetable for delivery.
- They then look at what they need to do to deliver the maximum value to the customer.

Application of Value Chain Analysis to a Business Analytics initiative.

Application to a Business Analytics initiative.

In general we can identify 4 factors we can use as input to analyse a Business Analytics initiative in a company. This initiative can be a new product or service or a new company with a new business model.

Motor Factors of Business Analytics	Impact in Data Monetization
Structured Data: More detailed transactional data: TPV, Credit Card...	Makes more detailed and concrete decisions (local, stational, multidimensional)
Unstructured data: various internal data (e-mail, consumer comments) and external data (social media, mobile).	It makes possible unstructured decisions more complete and precise (with new metrics, dimensions and dimensional attributes)
Data rate: access to low latency data ("real-time")	It makes it possible to make decisions more frequently and at the same time (hours versus weeks, on demand)
Predictive analytics: Causality, predictors, instrumentation, experimentation	More applicable predictive decisions (optimize, recommend, predict, estimate, predict)

Application to a Business Analytics initiative. Value Chain Analysis

Internal Logistics	Operations	External Logistics	Sales and Marketing	Service
Use real-time POS data to identify and notify suppliers in time of possible shortages	Use real-time POS and RFID data to manage rebates, identify products that are poorly sold, and optimize store inventory.	Use social media and mobile data to gain merchandising knowledge to optimize your performance.	Use conversion attribution analysis to optimize ad placement and send messages faster.	Combine data from POSs with social media to identify potential problems in products or service.

Application to a Business Analytics initiative. Value Chain Analysis.

Infrastructure	Human Resources	Technology	Supplies
Implement real-time predictive panels for merchandising management in departments and stores.	Use social media data to forecast demand for promotions in order to optimize planning work.	Use existing analytics to alert management to changes in merchandising performance.	Use merchandising knowledge of POS data to negotiate better terms with suppliers.

Examples of Value Chain in different sectors

Value Chain Analysis: Retail

Retail Value Chain

Headquarters

Purchase Order

Sales Data

Shipment order

Manufacturer — Carrier — Warehouse — Supplier — Retailer — Customer

Value Chain Analysis: Retail

Logistics & Supply Chain	Strategy & Planning	Merchandising	Store Operations	Marketing	Customer Experience
Supplier Performance Measurement	Real Estate Planning	Assortment Planning	Store Profitability Analysis	Customer Segmentation	Customer Insights
Inventory Planning & Replenishment	Sales Planning & Forecasting	Regular Price Optimization	Layout Management & Optimization	Marketing Mix Optimization	Loyalty Program Management
Route Optimization	KPI measurement & reporting	Competitive Intelligence	Labor Optimization	Marketing Effectiveness	Customer Lifetime Value
Shipment Tracking and Reporting	Portfolio Allocation	Markdown Optimization	Out of stock reduction	Promotion Effectiveness	Membership/Retention Analysis
LTL consolidation	Competitive & Cannibalization Analysis	Market Basket Analysis	Customer Conversion	Cross-channel Synergies	Customer Relation Management
		Cross-Selling Opportunities	Loss Prevention	Database Marketing	Survey Score Analysis
		Private Label Analysis		Target Market & Potential Estimation	

Value Chain Analysis: Insurance

Value Chain Analysis: Insurance

Figure 1: Opportunity for Mobility in the Life Insurance Value Chain

Product Management	Marketing	Sales & Distribution	Underwriting & Risk Mgmt.	Policy Acquisitn. & Servicing	Claims Management	Finance & Accounts
Product Development	Market Research & Analysis	Direct Sales	Quote / Illustration	Policy Issue	Claims Registration	Money In Processing
Mortality Investigation	Market Development	Lead Management	Document Submission	Policy Endorsements	Claims Validation	Banking & Budgeting
Valuation based on Risk	Product Launch	Pre-Sales Support	Under Writing	Lapse & Revival Management	Loss Reserve Creation	Financial Statements
Risk Management	Campaign Management	Sales Budgeting	Reinsurance Facility	Policy Alterations	Claims Assessment	Fund Administration
Regulatory Reporting	Branding & Positioning	Performance Review		Policy Cancellation	Claims Adjudications	Treasury Management
	Publicity & Promotion	Distribution Management		Adjustment & Refund	Claims Financials	Costing, Accounts, Taxation
	Public Relations	Remuneration Management		Loans & Withdrawals	Subrogation & Litigation	Funds Payout
	Channel Support			Fund Trans. Processing	Fraud Management	

Denotes Applicability of Mobility

Value Chain Analysis: Finance

Private Banking Value Chain (Exemplary)

Sales	Front-Office	Middle-Office	Back-Office
• Acquisition	• Client relationship management support	• Client and management reporting	• Trade enrichment and completion
• Asset allocation determination	• Research / data analysis	• Payments	• Transaction management and control
• Continuous client relationship management	• Investment strategy and process	• Financial statements and custody services	• Clearing and settlement
• Risk profile assessment, regulatory documentation	• Risk management and controlling (client rating)	• System maintenance	• Custody / administration
• Account and securities deposit	• Product management (product rating)	• IT processes and administration	• Output management
• Contract management	• Sales force management	• Order validation and routing	• Fee calculation and booking
	• Order entry	• Settlement notes	• Reporting (lists, etc.)
	• Allocation / Rebalancing	• Corporate actions	• General controlling
	• Investment controlling / monitoring	• Service provider and partner management	
	• Complaint and claims management		

Value Chain Analysis: Finance

Value Chain Investment Banking –Trading (Exemplary)

Sales	Front-Office	Middle-Office	Back-Office
• Institutional Sales	• Research • Financial engineering • Deal capture • Simulation • Closing and Ticketing • Market Making • Brokerage • Refinancing / Asset and Liability Management • Cash- / Liquidity-management • Risk management / risk decomposition	• Compliance • Market data • Risk control • Management reporting	• Trade enrichment • Trade confirmations • Matching / reconciliation • Fixings and payments • Accounting • Reporting

"I'M A LITTLE SURPRISED, WITH SUCH EXTENSIVE EXPERIENCE IN PREDICTIVE ANALYSIS, YOU SHOULD'VE KNOWN WE WOULDN'T HIRE YOU."

Thank You