

TBA2102 Introduction to Business Analytics

Lecture 2

Implementation & Value Generation with Business Analytics

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Learning objectives

- Understand how to generate/create value through analytics
- Describe and appreciate the challenges of implementing business analytics and the best practices for successful implementation

Business Analytics is the use of:

- data,
- information technology,
- statistical analysis,
- quantitative methods, and
- mathematical or computer-based models to help managers gain **improved insight** about their business operations and make **better, fact-based decisions**.

Applications for BA



Industries

- Agriculture
- Construction
- Defense
- Education
- Entertainment
- F&B
- Medical
- Hospitality
- Logistics
- Retail
- Infocomm & Technologies
-



Business Functions

- Accounting & Finance
- Human Resource
- Marketing/ Sales
- Production/ Procurement
- Public Relations
- Operations



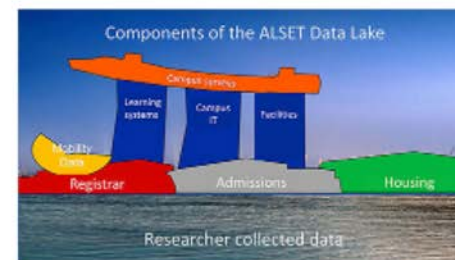
Types of Analytics

- Descriptive
- Predictive
- Prescriptive

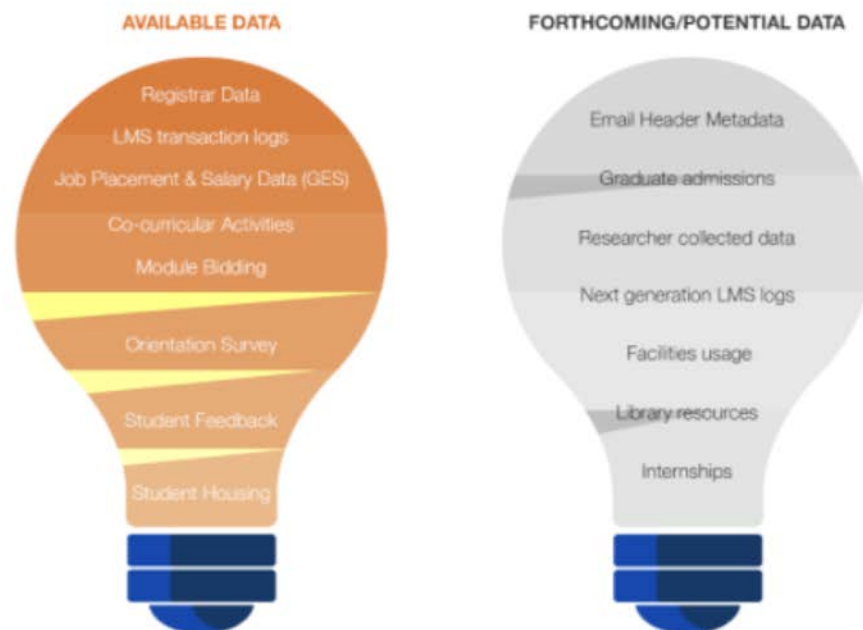


The ALSET Educational Data Lake

We manage the ALSET Educational Data Lake, an exciting resource for education researchers, policymakers, and innovators. The Data Lake securely houses data gathered from across the university. This includes campus IT systems, student surveys, research study results, and much more.



Launched in 2016, the Data Lake now includes anonymised data on over 170,000 NUS students and alumni. The extent of our data is growing all the time—the image below shows the available datasets and those that we are working to incorporate into our Data Lake in 2020.





By Aqil Haziq Mahmud
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17 Aug 2020 05:00AM
(Updated: 17 Aug 2020 09:44PM)



Bookmark



Singapore

All SCDF frontliners to get smart watch by 2022; can send heart rate, location and 'man-down' alerts



Singapore Civil Defence Force officer cadets wearing the smart watch while climbing the "endless ladder". (Photo: Jeremy Long)

SINGAPORE: As part of their breathing apparatus proficiency test, Singapore Civil Defence Force (SCDF) officer cadets must wear 22kg of bunker gear and climb an "endless ladder" for a certain distance within three minutes.

More than a minute on that vertical treadmill and the cadets start breathing heavily through their bulky oxygen masks. The audible gasps quicken as a distance and time counter at the top of the machine ticks on. An instructor standing behind looks out for cadets who could be overexerting.

A cadet who passes out might eventually be given extended medical leave, affecting his training schedule and output. But the SCDF is looking to change this by introducing a smart watch that can measure a cadet's heart rate, improving training safety and efficiency.

With the smart watch, instructors monitor cadets' heart rate using a tablet on top of the usual visual cues, allowing them to intervene quicker when they see signs of overexertion. These cadets can then be sent for rehabilitation earlier, reducing any potential downtime.

<https://www.channelnewsasia.com/news/singapore/all-scdf-frontliners-to-get-smart-watch-by-2022-13026118>

"What we envision to achieve is to reduce the occurrence and severity of training-related injuries and get them into the optimal training zones," said Major (Maj) Hasan Kuddoos, acting head of the responder performance centre at SCDF's Civil Defence Academy, at a media event on Wednesday (Aug 12).

In the bigger picture, the SCDF aims to use the smart watch to collect officers' physiological data, like maximum heart rates, to determine the optimal training intensity and tweak standards for different exercises and tests.

The Home Team Science and Technology Agency (HTX) is conducting a long-term study to assess an SCDF officer's training load based on the collected data. The data could also help design progressive training with personal targets.




An instructor will monitor officers' heart rate as they do strenuous exercises. (Photo: Jeremy Long)

Generating value through analytics



How to **create or generate value**?



Becoming an analytics-driven organization to create value

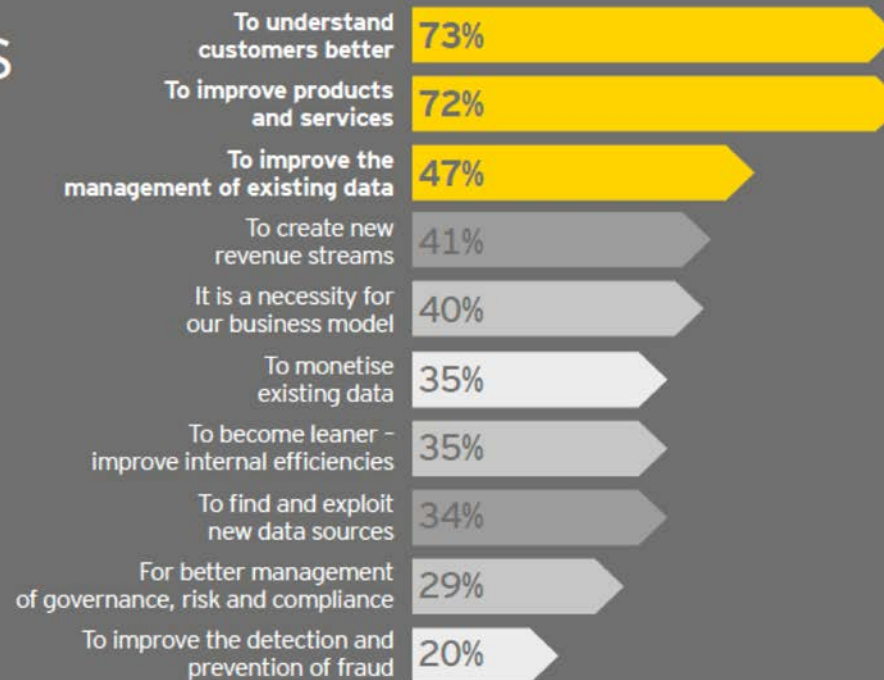
A report in collaboration with Nimbus Ninety

EY
Building a better
working world

To understand how many companies are currently using big data to measure, create and protect value across their businesses, EY commissioned new big data research from leading insight firm Nimbus Ninety.

A total of 270 senior executives responded to 27 questions on all aspects of their data strategy. Around 68% of respondents are active stakeholders in big data projects, and all departmental functions and industry sectors are represented, with the majority of respondents working in finance, marketing and IT, as well as in cross-departmental management roles.

The top 10 drivers for your organisation to implement big data analytics



Source: "Becoming an analytics-driven organization to create value" by E&Y

Generating value through analytics

Measure



Protect



Create

Mobility Genome™ framework

Data-as-a-Service

Mobility Intelligence Reports

Data Science Consulting



DATA-AS-A-SERVICE APIs

Integrate mobility intelligence into your existing applications and analytics tools.

Get up-to-date information on Origin-Destination pairs across Singapore, for any time and any day.

Discover where people are hanging out and spending time in.

Understand who and how many people are at points of interests across Singapore.

DATASPARK'S UNIQUE VALUE

At DataSpark, we have exclusive access to mobile network and GPS data, with over 1 billion location signals from 4.1 million mobile subscribers collected and processed throughout each day. We can also augment this with your own 1st party customer and location.

We transform this data into mobility intelligence through our proprietary Mobility Genome™ framework – to provide an unparalleled library of insights on people's mobility.

These insights can be integrated into your existing applications and analytics tools via an API.

Value along different dimensions

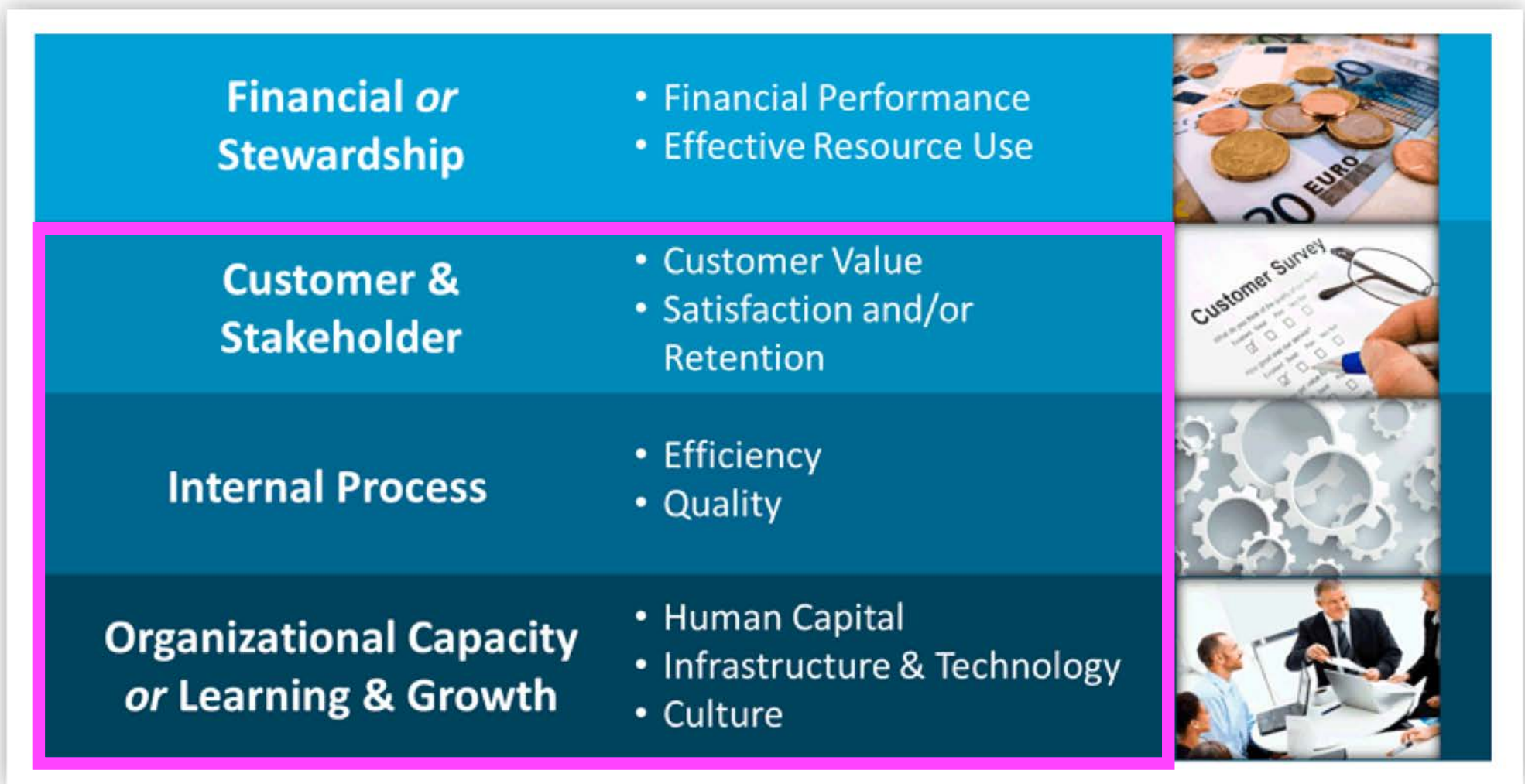
- Revenue Growth
- Profitability
- ROI
- Market Share
- Marketing Campaign Response Rates

Financial

- Customer Satisfaction
- Relationship Duration
- Health
- Quality of Life
- Employee learning

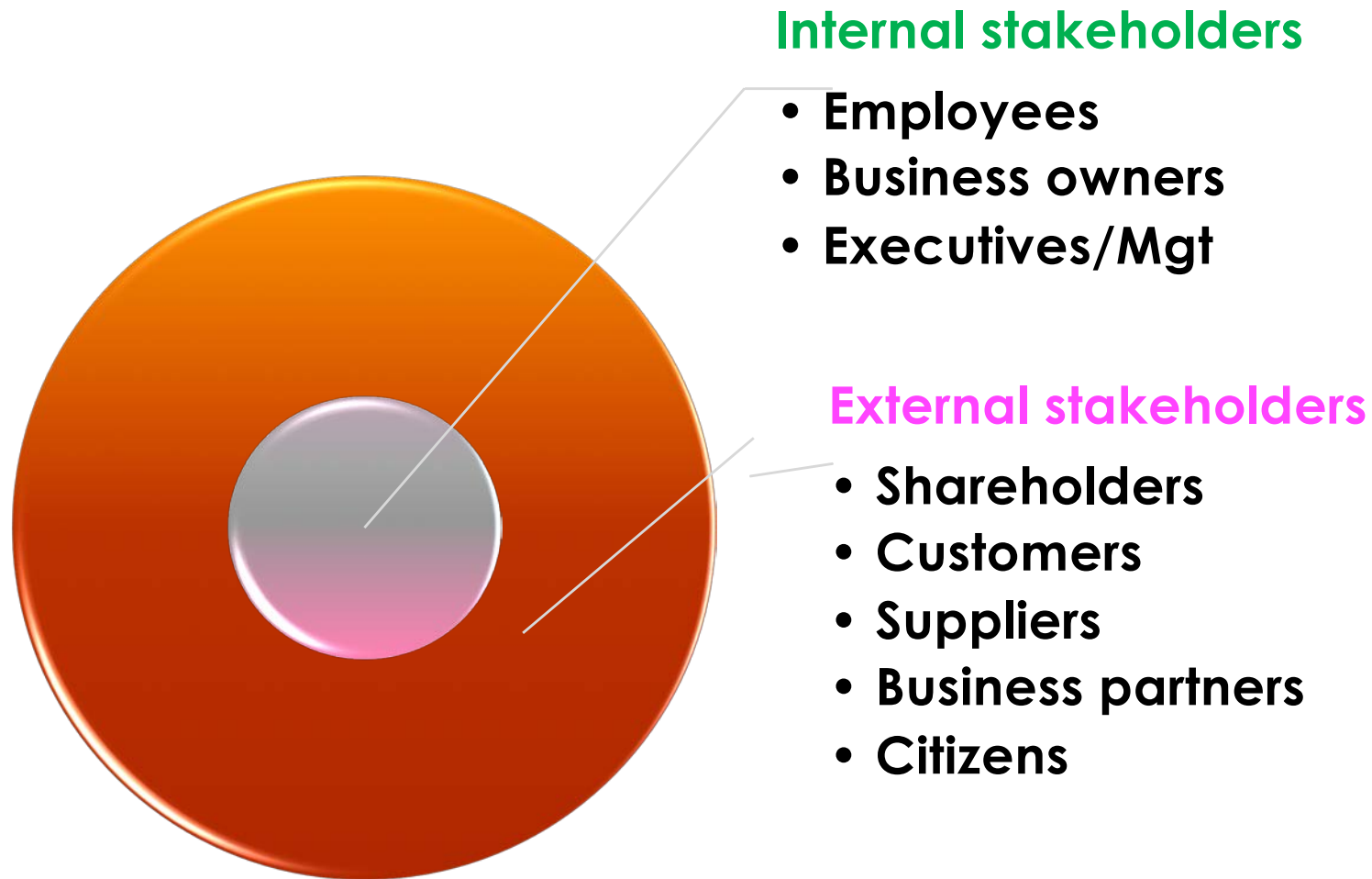
Non-
financial

Balanced Score Card



Non-financial

Value to stakeholders



Value at different levels

levels	Individual	group	organizational	population
Internal				
- Employees	Individual employees	Department/ business unit	Organization	Organizations within country
External				
- Shareholder				
- Customers				
- Suppliers				
- Business partners				
- Citizens	Individual citizen	Elderly, children	Organizations of citizen (e.g. constituencies, SACs)	Country population

CASE STUDY

Analytics through Internet Of Things for Home-Dwelling Elderly



Some questions to think about/discuss...

- What types of need is the project addressing?
- What data and technology are being used to address these needs?
- What type of analytics can be performed with these data? (descriptive/predictive/prescriptive)?
- What are some challenges faced?

Business Analytics - Impacts and Challenges

- Benefits

- ...reduced costs, better risk management, faster decisions, better productivity and enhanced bottom-line performance such as profitability and customer satisfaction.

- Challenges

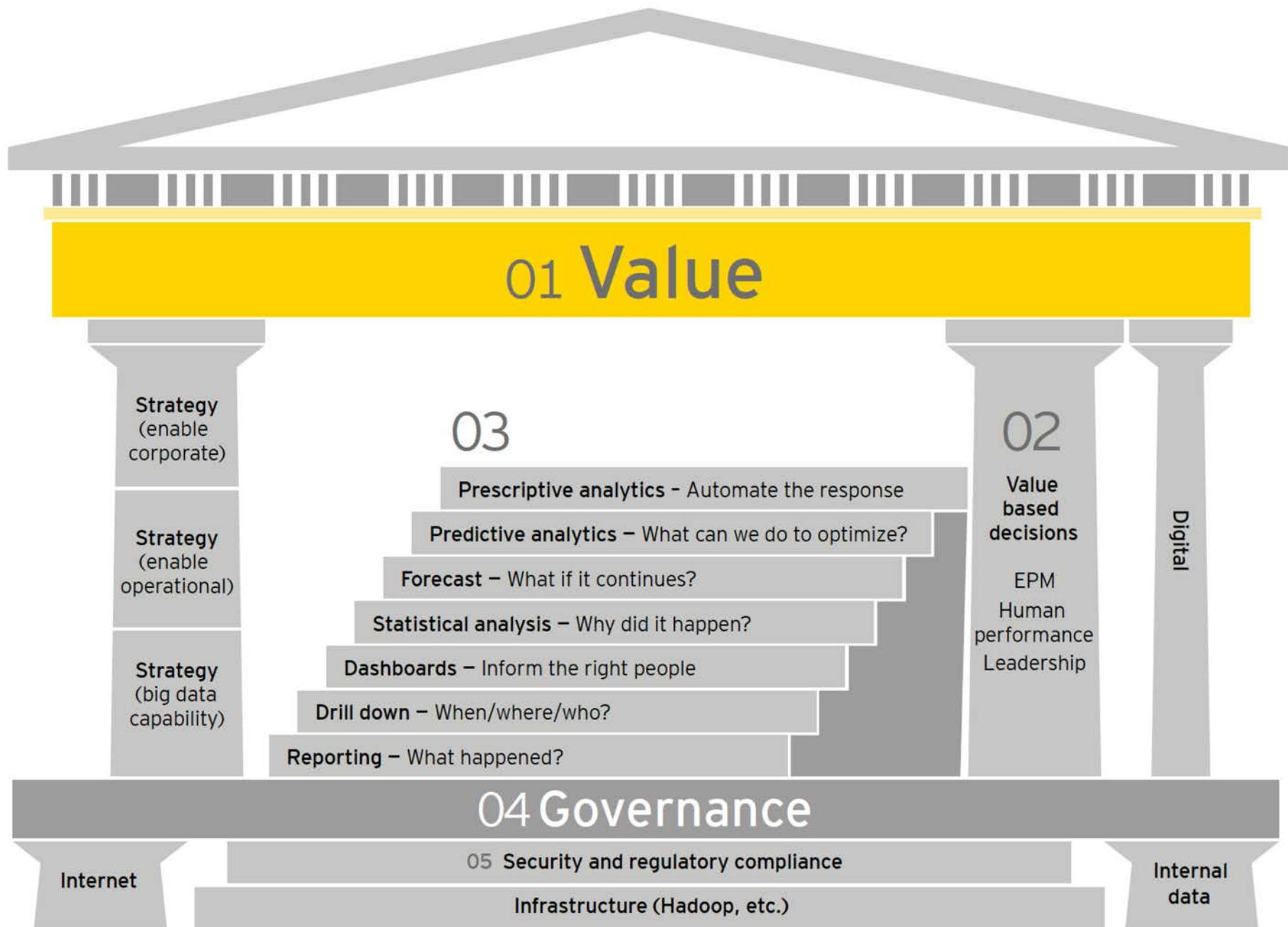
- ...lack of understanding of how to use analytics, insufficient analytical skills,
- difficulty in getting good data and sharing information,
- data privacy, security and compliance
- building the right governance and organizational structure

Having the right tools is important...



- But people and organizational components are just as, and if not, more important to build a successful BA function





Source: "Becoming an analytics-driven organization to create value" by E&Y

Tutorial Assignment 1 – Amazon Go "No-Checkout" Grocery store

