

UNIVERSITY OF READING

Where business comes to life

# **Business Technology Consulting 4.0 Business Problems & Context**

Dr V Michell



UNIVERSITY OF READING

Where business comes to life

# Business Technology Consulting 4.1 Business Context Analysis

Dr V Michell

### 4.1 Business Problem Context Analysis

- **Business Context & Strategy** ۲
- **Problem Definition** 
  - **Problem Formulation Exercise**
- The Stakeholder in the Context

#### Learning Objectives

3

After completing this unit you should:

- Understand the structure of business problems (and their formulation)
- Understand the business context
- Ability to define the problem in context
- Understand how to develop a formulation meta-model of the business
- Be able to analyse the influence of stakeholders

3. **Business Context** Analysis





### **Overview**







### 4.1 Business Context Analysis



#### Why?

Businesses are complex - an initial view of the business is required to:

- Scope the problem
- Understand the business context
  - What drives it, how it competes etc (External Environmental Drivers)
  - how and why the business works the way it does (Internal Environment) (Strategy, Principles and Competences)
- Relate to the language and constructs of the business
  - specific company terminology
  - Industry sector terminology (artefacts/definitions)
- Understand the components and parts of the business and how they fit (Metamodel)



### 4.1 The Strategic Business Context



#### Comprises:

External Environment Strategic Assessment

- External Environment
- Competitive Position
- Product/Market Position
- Strategic Context/Approach

Internal Environment Strategic Assessment

- Business Meta-Model
- Core competences and capabilities
- Culture (McKinsey 7S/SWOT Assessment)





### 4.1 Analysing the Strategic Business Context:

We will use many of these methods are defined in other IRC courses eg INMR66 for:

- Competitive Position: Porter's 5 Force model
- External Environment: PESTEL
- Product/Market Position: Boston Box
- Strategic Context/Approach: SWOT Internal
- Culture: McKinsey 7S
- SWOT Assessment

INMR84 – Introduction for Capabilities/core competences

We will focus on: Business Meta-Model









### 4.1 Analysing Strategic Business Context: Methods Recap





Source: INMR66-2009.123-166 - KN



### 4.1 Analysing Strategic Business Context: Methods Recap

#### 2. Problem Scoping

#### **PEST** Components

#### Political/legal issues

- Trade regulations, tariffs
- Social welfare policies
- Competition legislations
- Environmental protectior
- Employment laws
- Etc.

#### **Economic issues**

- Business cycles
- Interest rates, money sup
- Inflation
- Unemployment
- Disposable income
- Energy (availability, cost, etc.)
- Internationalisation
- Etc.



#### Socio-cultural/Environmental issues

- Demographics
- Social mobility
- Lifestyle changes
- Environmental concerns (global warming, climate change, waste, etc.)
- Animal welfare
- Etc.

#### Technological issues

- New technology and trends
- Government policy on research
- Inventions and innovations, and their support

Where business comes to life

- Pace of technological change
- Technology enablers
- Etc.



9

### 4.1 Components of the Strategic Business Context

What is the Business and its long term aims?

#### Business Strategy

What is the long term plan for the business to manage it strengths and weaknesses and meet its strategic goals?

• **Principles** (code of practice)

What are the high level rules and guidelines by which the business is run?

The set of principles by which the business operates act give rise to a set of control norms that enable the business to be controlled

*Eg NHS – principle –Maximum waiting times for cancer treatment following GP referral If your GP suspects that you might have cancer, your treatment should begin within two months of referral to a hospital doctor. This includes the time taken to confirm your diagnosis and to agree a treatment plan.* 



### 4.1 Components of the Strategic Business Context

#### What is the Business and its long term aims?

- Business Strategy (re methods recap)
- Principles (code of business practice)
- Its unique core competences

#### Who are the Stakeholders?

- Internal (org. chart)
- External

#### — Business Context Articulation

#### What drives and affects the way the business works?

- Business Drivers i.e. factors affecting getting its work
- IT drivers i.e. factors affecting what IT is uses/deploys
- Any core competences i.e. unique capabilities clients will pay for
- Constraints: principles, regulations, compliance rules etc



### 4.1 Components of the Strategic Business Context

#### What drives and affects the way the business works?

**Drivers:** A driver is a factor that positively influences the outcome of another factor see: drivers of outsourced innovation 2007

#### **Business Drivers**

A business driver is a factor that influences the performance of the business *Fidelity Cars Example:—oil price, car insurance costs, competitive threats/substitutes* 

#### **Cost Driver**

A cost driver will influence the costs of the business or a particular part of the business *Fidelity Cars Example:*—*price of replacement parts, price of new vehicles* 

#### **IT drivers**

IT drivers are factors that influence the performance of the information technology *Fidelity Cars Example:- datacentre reliability and support* 



### 4.1 Constraints in the Strategic Business Context

#### **Business Rules**

• Principles (code of business practice)







### 4.1 Analysing Strategic Business Context





### Exercise 4.1





UNIVERSITY OF READING

Where business comes to life

# **Business Technology Consulting 4.2 Problem Definition & Formulation**

Dr V Michell



**Objectives:** 

- Explore Findings of Problem Definition Formulation Exercise
- Define a Problem Definition Statement
- Relate the problem definition to the drivers and principles







### 4.2 a) Problem Review Exercise

4 Problems Review Exercise
This session reviews your answers from the exercise in lecture 1
...as part of context analysis







### Exercise 3.2 b)– Your view of problem formulation

YOUR TASK 30 mins In your teams

#### Use the 3 Problem Formulation Case Studies handed out in lecture 1

Recall your personal answers and then discuss your views with others by studying the 3 case studies to agree:

a joint list of key problem formulation factors – that could be used for any of the cases or other problems

a formula for building a summary problem statement using these factors that could <u>guide</u> the development of solution

- that could be used for any of the cases or other problems





Discussion

What are the difficult areas?





### Exercise Q – Questionnaire

#### **YOUR TASK**

#### Please complete the questionnaire

This questionnaire will help understanding of aspects of problem solving:

- That are difficult
- What to focus teaching on
- Plus help identify support required for the assignments and project





Lets now explore the process of problem solving





#### Problem Solving Approaches [Adapted from 2.2 PS37]



Problem formulation => headline problem statement positions us to address the problem and solution => Identifying the right problem...







=> Identifying the right problem...

Dr V Michell INMR86 Business Technology Consulting











#### 2. Problem Scoping

### 4.2 Problem Definition

What can we identify from papers?

Recognise the problem (Buyukdamgaci G. 2003)

- Specify the gap in the desired vs existing state
- State all the evidence

#### **Problem Development**

- Identify stakeholders
- Identify values and objectives
- Conceive perspectives on the problem
- Generate relevant knowledge and information

#### **Problem Exploration**

- Select a level of analysis
- Decompose the problem
- Identify constraints
- Identify potential causes/solution paths







#### Prescriptive Framework for Problem Definition [Adapted from fig 1 PS3]







DMAIC Process improvement Phases [Adapted from fig 1 PS37]

DEFINE: Problem selection and **BENEFIT** analysis

MEASURE: problem critical to quality (CTQ) MEASUREMENTS

**MEASURE: Assess CURRENT SITUATION** 

ANALYSE: Problem causes that influence CTQs

IMPROVE : Design process adjustments

CONTROL: Adjust the process (check meets desired situation)





Any business director will have a range of issues affecting their business, costs are too high, market share too small, new products and services threaten existing business offerings.

We need to identify the key business strategic problems that will affect the business.

A business problem needs to be expressed as an <u>objective</u> issue statement and a <u>measure</u> of the issue.

Problem = f (issue statement and measure)

#### Examples

- Business costs are too high by 20% of revenue = (business costs C too high, 20%x R)
- Technology costs increasing by GBP 2.0M year on year
- Customer service complaints have increased by 50% in two years
- How do we increase market share by 10%





## 4.2 Problem Definition & Formulation Factors/information groups

3) Information about the current (CUS) and desired situation (DES) (who, how, what, when, why – as per Zachman)

Context information – the detail

Who - stakeholders

What - activities, systems

When - current state and future state times and objective timings

How – processes and machines work and things happen or might happen





### Factors/information groups in Problem Statement

Factors to be stated in the headline problem statement

(Source Michell V. and Boness K Problem Formulation & Research in Progress)

| ISS  | The issue statement or difference/gap between the current state and desired state      |
|------|--|
| OBJ  | Goal/Objective of the work to make the desired state possible                          |
| CUS  | Information about the current situation (who, what, when, why, how) description        |
| DES  | Information about the desired situation (who, what, when, why, how) description        |
| MEAS | A measure of the size of the gap between the actual and desired situation              |
| IMP  | The impact (on the business) of the problematical situation                            |
| REQ  | The Key Requirements to deliver the desired situation (for a potential solution)       |
| ASS  | The Key assumptions made about the problematical situation and its possible resolution |
| CONS | The Key constraints on the problematical situation and its possible resolution         |
| BEN  | The <b>benefit</b> of resolving the problematical situation                            |





### Factors/information groups in Problem Statement

Factors to be stated in the headline problem statement

(Source Michell V. and Boness K Problem Formulation & Research in Progress)

- Symptoms are part of the issue statement and should be treated as assumptions at this stage until analysed
- Budget finances are part of the constraints
- Time to develop the solution is part of objectives/constraint
- Root cause

 at the start of an engagement it is unclear what are really causes and what are symptoms so any suggested root causes need to be treated As assumptions to be tested during the engagement





#### **RESEARCH IN PROGRESS**

A problem statement defines some domain and what quality, behaviour or relationship within it, is not as desired characterised by undesired effects. The statement includes: a) Measures of the magnitude of the gap between current and desired states and a summary of the focus of the change and the requirements of the solution, plus constraints on the solution and the benefit s resulting b) key facts/assumptions to be tested.

(Source Michell V.)





#### **RESEARCH IN PROGRESS**

#### **Proposed Headline Problem Statement – Problem Definition formula**

A problem statement defines some domain (CURRENT STATE -CUS) and what quality, behaviour or relationship within it, is not as desired (ISSUE ISS), characterised by undesired effects (IMPACT - IMP). The statement includes:

a) measures (MEAS) of the magnitude of the gap between current and desired states (DES) and a summary of the focus of the change (OBJ) and the requirements of the solution (REQ), plus constraints (CONS) on the solution and the benefit s resulting (BEN). b) key facts/assumptions to be tested (ASS).





#### Other Factors that might be considered...

#### Problem symptoms

- should be in the issue statement and are assumptions to be tested at this state

*Time* eg to solve the problem, when the event happened etc

- Is important but is part of the current state, future state and objectives and measure

#### Root cause

- Is important but at the problem formulation stage is likely to be an assumption that Needs to be tested and identified as part of the problem analysis stage

#### Budget

- Is a constraint and is important at the problem scoping stage.
- Project time and solution timings are part of the requirements

#### What are your views?





#### The Headline Definition Statement (HPS) and the factors within it provide:

- a) The foundation from which the full problem solving rationale evolves
- b) A categorisation of the types of information to label in a narrative enabling easier 'stepwise decomposition' used in problem solving
- c) Helps focus on the types interviews and meetings with the stakeholders To check assumptions and facts
  To confirm the problem
  To confirm the objective
- c) A summary to
  - guide and focus team members
  - check/adjust with clients

d) A means to annotate and organise new information as it arises from the engagement

Note the HPS may be adjusted as more information (eg concerns, costs/time) and more stakeholder governance is uncovered





Exercise 4.2





UNIVERSITY OF READING

Where business comes to life

# **Business Technology Consulting 4.3 Problem Definition & Formulation**

Dr V Michell

#### Dr V Michell INMR86 Business Technology Consulting

# 4.3 Problem Definition

... But a number of factors or drivers will drive the issue gap between current & desired state

- There will be different causes that influence and drive the issue
- These can be found by root cause analysis and the Ishikawa diagram (sae Cameron & Michell 2011) Arrows show direction







Issue gap = f (issue drivers)

Issue Driver = factor significantly affecting the issue

#### **Identifying Drivers**

- Drivers to the issue and the issue statement need to be assessed by the senior organisational stakeholders responsible for the various strategic units of the organisation eg Operations Director, CIO, CTO etc
- They must be correlated with the issue and are proven causes that have some effect on the problem and its metric

Example potential technology cost issue drivers (causes) for:

#### Technology costs increasing by GBP 2.0M year on year

- High application maintenance costs
- Obsolete technology platforms
- IT headcount
- Cost of scarce technical support
- Poor process for selection and management of technology
- High support contract costs etc







...but the solution to the problem is dependent on finding the factors that can influence and reduce the issue drivers Id

Gap solution = f(Issue drivers)

...but subject to the control norms/principle of the business

Strategic

• Eg ensure core competences are grown/maintained (no adverse impact)

So if an obsolete IT platform is used by a information system with massive functionality that supports a core competence - We can't just scrap the platform!

Operational

Eg Maintain and develop customer service (no adverse impact)

So if an obsolete IT platform is vital to customer service - We can't just scrap the platform!





#### **Potential Causes/drivers**

We need to find the root cause of the issue or issue drivers that contributes the most to the issue –'technology costs'



Where business comes to life

2. Problem Scoping



Issue gap = f (issue drivers)

Issue = Technology costs have increased by GBP 2.0M year on year

Interviews suggest technology costs are mainly driven by issue drivers:

- High application maintenance costs
- IT headcount

...to find out we can use the architecture model to define and model the artefacts that may be involved

#### Solution = f (Issue drivers)

- Identify applications and factors affecting maintenance costs/contribution to 2M eg:
  - Type; mainframe vs server vs cloud etc
- Identify IT headcount and factors affecting costs/contribution to 2M eg:
  - IT inventory/type of system vs headcount
  - IT skills etc

... Enterprise architecture can provide a framework for the driver analysis



### Exercise 4.3







UNIVERSITY OF READING

Where business comes to life

# Business Technology Consulting



Dr V Michell

Dr V Michell INMR86 Business Technology Consulting

### 4.4 Stakeholders in Context

Objectives:

- Understand the stakeholder
- Develop an ability to identify the stakeholders in the business context





### 4.4 Features of Strategic Business Context

...but the strategy will depend on the external environment

This will influence its current startegic behavour and architecture





### 4.4 Why Do We Care?

Stakeholders

any individual or group that has an interest in the outcome of an activity or is impacted by that activity

Stakeholders can influence and alter the course/outcome of an engagement

- -Influencing your sponsor
- -Affecting the quality and completeness of deliverables
- •At the start of the engagement
  - -Identify stakeholders
  - -Analyse stakeholders
  - -Devise stakeholder management strategies
- •During the phase and solution stages:
  - Manage stakeholders
  - Review/revise stakeholder management strategies
  - Use stakeholders to assess and value their architecture components



### 4.4 Stakeholder Types – Semiotics View





Dr V Michell INMR86 Business Technology Consulting

### 4.4 Stakeholder Types – Teamwork/Project View







50

### 4.4 Description of Stakeholders

- Clients and their customers
  - Large/small, regular/occasional, wholesale/retail, corporate/private, commercial/public-sector, civilian/military, domestic/export, "good"/"bad", etc.
- Partners
  - Equal/superordinate/subordinate, strong/weak dependencies, etc.
- Suppliers
  - Major/minor, regular/occasional, domestic/overseas, etc.
- Competitors ("negative stakeholders")
  - Leading/trailing, aggressive/non-aggressive, etc.
- Regulators
  - National/international, government/non-government, inspectors, etc.
- Owners
- Employees
- Managers
  - Board-level senior, middle-level, junior, front-line supervisors
- Public Opinion

