COMP6201 E-Business Strategy

Andy Gravell
February 2018

• While we are waiting to start, introduce yourself to another student in the class
• Find out
  – what degree programme they are studying, and
  – which country / region / city they are from?
• Would they rather be a developer, project manager, contractor or consultant, and why?
  – a software contractor is a self-employed developer working on a short-term project and paid by result
"The Real Business of Information Technology is Adding Business Value"

Session 1

Financial Awareness

Activity

• In your country, or where you intend to work:
  – how much does a software developer earn?
  – how much does it cost to buy a flat or house?
  – how many years will it take for a software developer to buy their own flat or house?

• Share your answers with your neighbour(s)
The Profit Motive

• Some claim the only reason for a business to exist is to make a profit
• What other goals must a business satisfy?

  - to be our customer’s favourite place and way to eat and drink
  - to provide a consistent professional service to our customers
  - the partnership’s purpose is the happiness of all its members
  - to be the leading provider of premium mobility products
  - to help people achieve their ambitions – in the right way
  - to deliver safe, high quality and innovative toys
  - to connect readers world wide to fiction & non-fiction authors
“If your only goal is to become rich, you will never achieve it”

Attributed to J D Rockefeller
the world’s first dollar billionaire

Compare

• Would you rather
  – change the world for the better
  or
  – be rich and famous?

• Why not aim for all of these?
Why Profit?

• If a business makes an unexpected or windfall profit, when might it be right to:
  – hold a party to reward its loyal customers
  – pay an extra dividend to share-holders
  – give all employees a cash bonus
  – invest in new buildings or other projects
  – spend the money on extra advertising?

…

Why Profit?

• If a business makes an unexpected or windfall profit, when might it be right to:
  – hold a party to reward its loyal customers
    *established community business eg in its 100th year*
  – pay an extra dividend to share-holders
    *recent dividends have been restricted by lower profit*
  – give all employees a cash bonus
    *reward their special efforts to recover from eg fire*
  – invest in new buildings or other projects
    *market is expanding, good return is projected*
  – spend the money on extra advertising?
    *mature / shrinking market with new competitors*
Activity

• You have inherited £100
  – what would you do with this unexpected money?

• You have inherited £100,000
  – what would you do with this unexpected money?

• Are your answers different, and why?

Activity

<table>
<thead>
<tr>
<th>Sum Invested (ie the Capital) is Preserved</th>
<th>Capital may Increase or Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expected Return is Positive</td>
<td></td>
</tr>
<tr>
<td>Expected Return is Zero or Negative</td>
<td></td>
</tr>
</tbody>
</table>

Identify one type of investment for each cell of the matrix above
### Activity

<table>
<thead>
<tr>
<th>Sum Invested (i.e. Capital) is Preserved</th>
<th>Capital may Increase or Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expected Return is Positive</td>
<td>Government bonds</td>
</tr>
<tr>
<td>Expected Return is Zero or Negative</td>
<td>Current account</td>
</tr>
<tr>
<td></td>
<td>Gambling</td>
</tr>
<tr>
<td></td>
<td>These are not investments!</td>
</tr>
</tbody>
</table>

Identify one type of investment for each cell of the matrix above.

---

### Shares versus Bonds

- A *share* entitles you to a fraction of a company
  - You buy shares via a stock market or stockbroker
  - if the company is a publicly listed one
- On average, shares are a good form of investment
  - companies can pay a dividend from their profit
  - the share gains value if the company does well (or v.v.)
- A *bond* has a fixed value (nominally) and term (period)
  - At the end of the period, its value is returned
  - The bond-issuer also pays the bond-holder interest
  - They can be issued by a government or company
    - a fixed rate government bond is a very safe investment
Share Investment

• You need to consider the company’s finances
  – via the “investor relations” section of the web site
  – or a finance web site aggregating stock market data
• There are a number of key metrics, for example
  – Price, \( P = \#\text{Shares} \times \text{Share Price} \)
  – Earnings, \( E = \text{Last Year’s Profit (after tax and other costs)} \)
  – \( P/E \) can be as high as 50 or as low as 5 (or even negative)
• You should also consider the company’s strategy
  – as explained the company report from its web site
  – and covered in industry analyst reports
• Investors are advised to have a portfolio
  – a range of shares, of different types, to reduce risk

Activity

• What is the largest publicly listed company with its headquarters in Southampton?
• Find their latest annual company report
  – what is their business model?
  – are they currently successful?
  – what are their future prospects?
• Would you invest in this company?
  – if so, how much?
• Would you invest in Microsoft or Apple?
  – if so, how much?
Session 2

Corporate Governance and Decision Making

Board of Directors

- External or independent directors, eg the Chair
- Internal directors eg CEO, CFO, other executives
- Large shareholders may also be Board members
- The Board formally appoints (& fires) the CEO
  – Chief Executive Officer, aka managing director
- Establishes company policy & strategic objectives
- Ensures financial resources are adequate
  – approves annual budgets
- Is accountable to stakeholders for performance
- A charity may have a board of trustees instead
Typical Organisation Chart

Corporate Decision Failures

- Patterns have been identified among corporate failings
  - including some former Fortune 100 companies
- Failure to move with the market
  - General Motors continued to focus on large vehicles 😞
  - Motorola held on to its old cell-phone business too long
- Failure to take advantage of technological change
  - Kodak did not exploit its early research into digital cameras
- Recklessness
  - Lehman Brothers took on excessive debt
  - Firestone moved too hastily into a new (tyre) product
- Greed and fraud
  - Enron’s CEO & executives concealed debt to boost bonuses
Corporate Governance

• A string of corporate and accounting scandals
  – including Enron, Peregrine, Tyco, WorldCom
• Led to the USA’s Sarbanes-Oxley Act (2002)
  – strengthened accounting and board responsibilities
  – and the 2008 financial crisis has re-emphasised these
• Corporate governance seeks to mitigate
  – conflicts of interest between stakeholders, eg
  – short term executives vs long term shareholders
• and encourage
  – transparency and disclosure to ensure integrity
  – ethical, responsible and rational decision making

Bringing
Quality to
Board
Decisions
C Spetzler,
R Arnold,
J Lang 2005

See also
How Well Run
Businesses
Make
Decisions
M Useem,
HBR 2006

Figure 2-3. The Decision Quality Chain
Shared Decision Making & Quality

• In some companies, the Board is asked just to approve (or reject) proposals from the CEO
  – rejection is a vote of no confidence, hence rare
  – so the Board’s contribution is only a limited one
• The Board can add more value by
  – shared understanding of decision quality
  – agreeing the strategic agenda for the year ahead
  – agreeing which items need joint decision making
  – engaging in structured dialogue about those items

Multi-Criteria Decision Making

• Usually each alternative has different merits
• So agree the criteria which influence the outcome
  – note that criteria is the plural of criterion
  – and give each one a weighting based in its importance
• Decision matrix ratings are usually out of 5 or 10
  – you can use strength of preference to infer these
• Compute the total using a weighted average
  – usually arithmetic, but could be geometric
• This method is systematic, though still subjective
  – it helps Boards to document their decision making
  – you can adjust the ratings to get the “right” answer ☺
Activity

- Complete the following decision matrix:

<table>
<thead>
<tr>
<th>Role Criterion</th>
<th>Weight</th>
<th>Developer</th>
<th>Project Manager</th>
<th>Contractor</th>
<th>Consultant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary or earnings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autonomy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job security</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical interest</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weighted Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Session 3

How this Module is Organised
Teaching

• As the assessment is 100% coursework, lectures are scheduled early in the semester
  – four classes per week for eight weeks, up to Easter
  – then likewise for the first two weeks of the summer term
• The slides have been revised based on student feedback
  – more activities and more up to date material eg from Chaffey
  – E-Business Background, Case Studies, Module Organisation
• There are two main textbooks
  – Keen, Making Technology Investments Profitable, 2011
  – the library has these in both printed & e-book format
  – you will also need to read up specific topics via the web

Why In-Class Activities are Useful

• You learn better when you practice new skills
  – and actively use new vocabulary
• The class has a diverse set of backgrounds
  – there is much you can learn from each other
• Assignments 3 and 4 are done in pairs
  – so you need to be able to pick a good partner
• It’s more fun than sitting passively for an hour
  – or you can attempt these in your own time instead
Assessment

• The coursework assignments ask you to act as a consultant to an organisation of your choice
  – we consider later what it means to act as a consultant
• Recommend a strategic e-business initiative
  – start with three initial possibilities, then select one
  – must be significant: identifiable impact on eg profit
  – or transformative: new business model / sector
• Stronger business cases will gain more marks
• Key skills are literature / web search, rational decision making, presenting, and report writing
  – this is not a programming module

Activity

• Read the assignment instructions
• Note down any questions you may have
• Share these with your neighbour(s)
• See if you can answer each other’s questions
• Prioritise the top three unanswered questions
  – and write these down
• I will go round the room to collect them
  – and provide answers where possible
Session 4

More Business Concepts

Business Concepts and Terms

• Company Status and Mission Statement / Goals
• Property Rights (Intellectual & Physical)
• Contracts (Partners, Suppliers, Customers)
• Employment Law
• Market / Product Legislation & Regulation
• Governance (Board of Directors, Executives, ...)
• Finance, Accounting, Future Strategy
• Market and Competition, Brand and Reputation
Business Models

- Key activities & value proposition are the heart
- Business equations give the value proposition
  - Profit = Income – Costs
    - or Earnings = Revenue – Expenses
  - Income = #Units Sold × Sale Price per Unit
    - or a sum of such products, for each sale item & price
  - Businesses have many different costs to pay
    - capital purchases, depreciation, interest on loans, ...
    - consumables, salaries, leasing/licenses, marketing, ...
    - tax, maintenance, insurance, dividends, legal costs, ...
Business Investment

- Return on Investment (ROI)
  - \( \text{ROI} = \frac{\text{Annual Return}}{\text{Total Investment}} \)
  - this is quoted as a Percentage, eg 10%
  - so that different returns can be compared
  - business manage a portfolio of projects to reduce risk

- There are many sources of finance
  - re-investing profit back into the business
  - owner / venture capital
  - publicly listed shares, eg via an IPO
  - commercial loans, company bonds

- When reading company reports, identify these &
  - cash flow vs. accrual (commitment) accounting

Modern Business Strategy

- Creative Destruction (Schumpeter 1942)
- Porter’s Five Forces (1979) – see next diagram
- Fortune 500 lifetime is decreasing
  - from ~75 years initially to under 15 years at present
- So businesses need to re-invent themselves
  - add value by decreasing costs & increasing income
  - business change projects
  - initiated by intrapreneurs, or external consultants
- If not, the business will fail and be replaced
Jumping the S-Curve

The path of high performers

New Revenue Streams


See also: Teece, Profiting from technological innovation, 1986
Silicon Valley Waves of Innovation

- Wave 1, Microwave Valve: Varian
  - Varian later made medical equipment
- Wave 2, Electronic Test Equipment: HP
  - HP later made computers, and provided IT consulting
- Wave 3, Semiconductors: Shockley, Fairchild, Intel
  - Intel first made RAM before moving into processors
- Wave 4, Computers: Apple, Cisco, Sun
  - Apple currently makes consumer electronics
- Wave 5, Internet: Google, eBay
- Wave 6, Social Media: Facebook

Most of these businesses survive, often by jumping the S curve

Activity

- What are the key activities of eBay?
- What is the value proposition?
- Is it time for them to jump the S curve?
- What could their new revenue stream be?
- Discuss your answers with your neighbour
Session 5

What does it Mean to Add Value?

The Bottom Line

• Remember, Profit = Income – Costs
• To increase profit (the bottom line) you can
  – increase income, or decrease costs, therefore
  – Value Added = Income Increase + Cost Decrease
• Successful businesses care about more than profit
• So how do you promote other benefits of change?
  – convert them to financial quantities, if possible, or
  – accept that they are “intangible”, ie not measurable
Activity

• Consider a typical e-business project such as setting up a web site to sell your products
• It is easy to estimate the extra income
  – you can look at the data from your competitors
• How do you account for the staff time spent?
• What other costs might be incurred?
• For each cost consider whether it is:
  – a one-off / initial cost, to include in the investment
  – an annual / recurring cost, reducing the annual return

Cost-Benefit Analysis

• A means of measuring positive and negative consequences of a proposed project or projects
• Select measurements and measure as is
• Predict changes resulting from the proposals
• Convert these into financial terms
• Perform sensitivity analysis
• Adopt the proposal with the best return
• It is usual to adjust for inflation
  – for example by computing the net present value
• Popular with non-profit organisations
  – see eg UK government guidance on business cases
Intangible Benefits

- Cost-benefit analysis converts benefits to money
- For example, the time wasted sitting in a car
  - use an hourly rate to convert to money
  - count this as the benefit of building a new road
- Some benefits cannot easily be converted
  - or conversion uses a questionable method
- Such benefits are called “intangibles”
  - (the assumption is that money is “tangible”
    - meaning it can be touched)

Activity

- Consider a typical e-business project such as setting up a web site to sell your products
- It is claimed this will enhance productivity
- How can enhanced productivity boost profit?
- What other benefits might result?
- Which of these can be expressed financially?
Activity

• Many organisations are non-profit making
• What quantifiable goals might these have:
  – University

  – Hospital

  – Ministry of Employment

  – Animal Welfare Charity
  ...

Activity

• Many organisations are non-profit making
• What quantifiable goals might these have:
  – University
    quality of intake, student satisfaction, employment
  – Hospital
    bed occupancy, survival rate, running costs
  – Ministry of Employment
    (un-)employment rate, development index, wages
  – Animal Welfare Charity
    #cases, animals rescued, successful prosecutions
Economic Utility

- In economics utility is a measure of preference
  - how much option A is preferred cf option B, C, ...
  - captures benefit, satisfaction, happiness, risk, ...
  - using stated or revealed preferences
- Economic analysis is based on utility functions
  - points of equal utility are said to be indifferent
  - it is claimed willingness to pay demonstrates this
  - when the monetary loss equals the gain in utility
- A weighted decision matrix estimates utility
- This notion is the basis of game theory
  - but in practice preferences are not always rational 😒

Activity

- Find this University’s latest annual report
- What quantifiable goals does this include?
- What value is given for the University’s estate?
- How does this compare with eg a cruise ship?
- Do you agree the University is knowledge intensive rather than capital intensive?
Session 6

E-Business and Information Technology

Information Technology

• E-business hardware and software
  – must add value to the business, and
  – align with (current) mission and goals
• Can lead to significant competitive advantage
  – like steam / electric power in the industrial revolution
• Return on Investment is expected to be higher
  – predicted pay back should be within 1 to 3 years
  – a faster rate of return reduces IT-specific risks
    • computer hardware depreciates quickly (eg over 5 years)
    • and new software is notoriously late / unreliable
Opportunities for E-Commerce

The **de Kare-Silver** Electronic Shopping Test

1. **Product characteristics.** Does the product need to be physically tried, or touched before it is bought?

2. **Familiarity and confidence.** Considers the degree the consumer recognises and trusts the product and brand.

3. **Consumer attributes.** These shape the buyer’s behaviour – are they amenable to online purchases in terms of access to the technology skills available and do they no longer wish to shop for a product in a traditional retail environment?

<table>
<thead>
<tr>
<th>Product</th>
<th>1 Product characteristics (10)</th>
<th>2 Familiarity and confidence (10)</th>
<th>3 Consumer attributes (20)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groceries</td>
<td>4</td>
<td>8</td>
<td>15</td>
<td>27</td>
</tr>
<tr>
<td>Mortgages</td>
<td>10</td>
<td>1</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>Travel</td>
<td>10</td>
<td>6</td>
<td>15</td>
<td>31</td>
</tr>
<tr>
<td>Books</td>
<td>8</td>
<td>7</td>
<td>23</td>
<td>38</td>
</tr>
</tbody>
</table>

De Kare-Silver states that any product scoring over 20 has good potential, since the score for consumer attributes is likely to increase through time. Given this, he suggests companies will regularly need to review the score for their products.

Product scores in de Kare-Silver (2000), Electronic Shopping Potential Test
Source: Chaffey, Digital Business and E-Commerce Management, 2016, Table 8.6
E-Commerce is the main driver for retail growth*

* Centre for Retail Research 2016, 2017

References

• Some articles on e-commerce elsewhere:
  
  http://www.chandlernguyen.com/blog/2016/03/15/8-key-facts-about-south-korea-e-commerce/
  
  
  http://www.eshopworld.com/blog-articles/estonia-ecommerce-insights/
  
  http://ventureburn.com/2014/12/7-african-countries-booming-ecommerce-markets/
Activity

• Around the world, which countries have the greatest & lowest proportion of retail activity using the internet or mobile network?

• In the future, what proportion of global retail will be conducted via e-business?

• How long will it take to reach this proportion?

Sources of New IT Value

• There is more to e-business than e-commerce

_e-Business_: business conducted via electronic media, especially the Internet; or a company conducting business via electronic media [Oxford English Dictionary]

| Optimising                  | • improve existing businesses processes  
|                            | • increase levels of automation eg through new systems |
| Reshaping                  | • change interactions with partners / customers |
| Reporting                   | • supply data for improved internal decision making |
| Informing                   | • supply data to suppliers / partners / customers to enhance relationships / value proposition / operations |
Activity:

Identify one e-business/activity in each cell of the matrix

<table>
<thead>
<tr>
<th></th>
<th>From</th>
<th>Consumer or Citizen</th>
<th>Business</th>
<th>Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>To</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Citizen or Business</td>
<td>C2C</td>
<td>B2C</td>
<td>G2C</td>
<td></td>
</tr>
<tr>
<td>Government</td>
<td>C2G</td>
<td>B2G</td>
<td>G2G</td>
<td></td>
</tr>
</tbody>
</table>
### Session 7

Consulting

![Diagram of consumer, business, and government interactions](image)

<table>
<thead>
<tr>
<th>Consumer or citizen</th>
<th>From: Supplier of content/service</th>
<th>Business (organisation)</th>
<th>Government</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Consumer-to-Consumer (C2C)</strong></td>
<td>eBay, Peer-to-Peer (Skype)</td>
<td>Transactional: Amazon</td>
<td>National government transactional Tax – inland revenue</td>
</tr>
<tr>
<td></td>
<td>Blogs and communities</td>
<td>Relationship-building: BP</td>
<td>National government information</td>
</tr>
<tr>
<td></td>
<td>Product recommendations</td>
<td>Brand-building: Unilever</td>
<td>Local government services</td>
</tr>
<tr>
<td></td>
<td>Social networks: MySpace, Twitter</td>
<td>Media owner – News Corp</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Consumer-to-Business (C2B)</strong></td>
<td>Comparison intermediary: Kelkoo, Product reviews</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Priceline, Consumer-feedback, communities or campaigns</td>
<td>Transactional: Euroffice</td>
<td>Government services and transactions: tax</td>
</tr>
<tr>
<td></td>
<td><strong>Consumer-to-Government (C2G)</strong></td>
<td>Relationship-building: BP</td>
<td>Legal regulations</td>
</tr>
<tr>
<td></td>
<td>Feedback to government through pressure group or individual sites</td>
<td>Media Owned: Emap business publications</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Business-to-Citizen (B2C)</strong></td>
<td>B2B marketplaces: EC21</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transactional: Euroffice</td>
<td>Business-to-government (B2G)</td>
<td>Inter-government services</td>
</tr>
<tr>
<td></td>
<td>Relationship-building: BP</td>
<td>Feedback to government businesses and non-governmental organisations</td>
<td>Exchange of Information</td>
</tr>
<tr>
<td></td>
<td>Media owner – News Corp</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Chaffey, Digital Business and E-Commerce Management, 2016, Figure 1.11
Definitions

• “The role of a consultant is to improve the client’s condition” [Alan Weiss]
• “Someone who has influence over an individual, group, or organization, but who has no direct authority to implement changes” [Peter Block]
  – not a “surrogate manager”, nor a “hired hand”
• Their code of ethics states they should
  – provide practical advice which works
  – analyse as a generalist
  – solve as a specialist

Historical Context

• Early management consultants such as Taylor focussed on scientific management
  – measuring time and motion to improve efficiency
• Later themes include finance, strategy, quality, organisational change, business process improvement, and information technology
• Consulting revenues can be cyclical
  – less is spent on consultants when money is tight
• Often set up as partnerships eg McKinsey (1926)
  – you start in a more junior role (analyst or associate)
Consulting Job Interviews*

• Prepare thoroughly – it’s a very competitive field
• Demonstrate you can work like a consultant
  – analyse a business problem and develop a solution
  – use common frameworks eg profitability (next slide)
  – quickly test and eliminate false hypotheses
  – well justified solution: because of X, Y & Z, do this
• Also handle calculations confidently & accurately
  – large numbers (15% of 2M sales of $300 units = ?)
  – rounding sensibly; estimating via a proxy measure

* Case interview secrets, Cheng 2012

Profitability Framework
Activity (1 of 3)

• You are consulting for a business which has suffered a significant reduction in profits
• What two hypotheses does the standard profitability framework suggest?

Activity (2 of 3)

• You are consulting for a business which has suffered a significant reduction in profits
• You are told this is because revenue has fallen
• What two hypotheses does the standard profitability framework suggest?
Activity (3 of 3)

• You are consulting for a business which has suffered a significant reduction in profits
• You are told this is because the number of units sold has fallen
• What hypotheses could account for this?
• Construct an issue tree to illustrate these

Ten Common Mistakes [Cheng 2012]

<table>
<thead>
<tr>
<th>Mistake</th>
<th>Insight Missed</th>
</tr>
</thead>
<tbody>
<tr>
<td>No hypothesis</td>
<td>Key insight missed due to insufficient quantification</td>
</tr>
<tr>
<td>Framework or issue tree not linked to hypothesis</td>
<td>Key insight missed due to lack of qualitative reasoning</td>
</tr>
<tr>
<td>Framework or issue tree missing a key factor</td>
<td>Jumping around cf linearly and logically drilling down</td>
</tr>
<tr>
<td>Branches of issue tree are not mutually exclusive</td>
<td>Pursuit of analysis not needed to test hypothesis</td>
</tr>
<tr>
<td>Mathematical mistake</td>
<td>Activity based summary versus big picture synthesis</td>
</tr>
</tbody>
</table>
Advice from the Literature (1)

• G M Weinberg, Secrets of Consulting
  – get it in writing but depend on trust
  – the most important act is setting the right fee
  – no matter how it looks, it’s always a people problem
  – every prescription has two parts:
    • the medicine and the method of ensuring correct use
  – always keep your promise
    • and never promise more than a 10% improvement 😊
  – never be dishonest, even if the client requests it
  – if they don’t like your work, don’t take their money
  – the best marketing tool is a satisfied client

Advice from the Literature (2)

• A Weiss, The Consulting Bible
  – never skip the conceptual agreement
    • objectives, measures of success, value
  – buyers choose commodities based on price: they choose business partners based on trust
  – all clients know what they want, few know what they need: that difference is your value added
  – logic makes people think: emotion makes them act
  – your role is often to help others negotiate successfully
  – conflict is healthy: resolve it so positive results ensue
  – everyone can write: not all have something to say
  – grow by anticipating tomorrow; build on your strength
Activity

• You are employed as a consultant by the CEO of a large organisation
• Your task is to improve the efficiency and effectiveness of their IT department
• How would you approach the CIO?

Session 8

E-Business Opportunities for the Grove Breakfast Factory
High Output Management*

• Andy Grove, ex CEO of Intel, explains management
• His 1983 book* uses the scenario of a breakfast café
  – a three minute soft boiled egg, buttered toast, coffee
  – delivered on time, with acceptable quality, & lowest cost
  – requires process, assembly and test (just like a fab.)
• A novel approach – there is no ordering, no kitchen
  – cooked egg production is the limiting step here
  – scenario 1: the waiter cooks each egg on demand
  – scenario 2: an egg boiling machine cooks continuously

![Graphical representation of High Output Management](image-url)
Management Indicators

• To manage a factory you need staff & equipment
  – and likewise for a breakfast café
• You also need indicators or measurements
• Activity: what five would you suggest?
  – sales forecast for the day
  – raw material inventory (stocks of eggs, bread, coffee)
  – reliability of equipment, forecast time to fix
  – number of staff in work, number off sick or on holiday
  – quality: number of complaints, satisfaction survey
• Pair past & future indicators to avoid over-reaction
  – eg forecast and variations from previous forecasts, and
  – inventory & frequency of shortages in the past
Managing Production Processes

• Indicators provide a window on a process
• Leading indicators help predict problems
• It is best if these are linear
  — or well calibrated so you can project them forward
• Trend indicators show changes of the past
• A stagger chart shows actual vs predicted

<table>
<thead>
<tr>
<th></th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>23</td>
<td>27</td>
<td>33</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feb</td>
<td>21</td>
<td>30</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mar</td>
<td>29</td>
<td>32</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apr</td>
<td></td>
<td>27</td>
<td>31</td>
<td>35</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Managing Inventory

• The goal is to match production and consumption
  — predicted customer numbers = predicted stock of eggs
• As forecasting is imperfect, you need “slack”
  — also necessary to resolve any production failures
• Inventory is the best way of providing slack
  — but it costs money, so should be minimised
  — and kept at the lowest-value stage, ie uncooked
• Quality is assured by inspections
  — faulty items should be rejected as early as feasible
  — use a quality gate, sampling, or vary between these
Managing Productivity

• How do you identify your best employees  
  – what kind of reward or incentive do you offer?
• How do you identify your best customers  
  – what kind of reward or incentive do you offer?
• Suppose the breakfast café is a success,
• How can the business be expanded, do you  
  – build more cafés, or franchise – like McDonalds?
• You will require knowledge management & training  
  – expansion should enhance your reputation, not lower it  
  – Innovation, Qualification & Orchestration (Gerber 1995)

Activity (1 of 3)

• Using E-Business / IT in the Breakfast Café
• Suggest one idea for each cell of the matrix below

<table>
<thead>
<tr>
<th></th>
<th>Supply Side</th>
<th>In-house</th>
<th>Sell side</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Purchasing</td>
<td>Operations</td>
<td>Customer</td>
</tr>
<tr>
<td>E-Business Web</td>
<td>Web</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site or Mobile App</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT Enabled Business</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transformation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Activity (2 of 3)

• Pick the idea most likely to give high ROI
• Estimate the costs of implementing this idea
• Estimate the likely financial return
• Calculate the ROI based on your estimates
• What other, non-financial, benefits exist?

Activity (3 of 3)

• Pound stores are now popular in the UK

• Is it possible to run a £1 breakfast café?

• Would there be a market?
Evaluating A Business Model

Source: Teece, Business Models, Strategy and Innovation, Long Range Planning 2010

Figure 3. Questions to ask about a (provisional) business model

Session 9

Strategic Management and E-Business
The Goal of E-Business Strategy

• To survive and grow, businesses need to find new business opportunities and/or decreases in operating costs

  | New products and services | Increased transaction efficiency |
  | New customers             | Lower capital costs              |
  | Mergers and acquisitions  | Lower staff costs                |

• A successful IT/E-Business Strategy should support these business goals

Traditional Strategic Management

• Michael Porter* claims competitiveness can be understood through five forces
  – rivalry (industry concentration)
  – threat of substitutes (cheaper alternatives)
  – buyer power (buyer size & influence)
  – supplier power (supplier size & influence)
  – barriers to entry (brand, intellectual property)

* Competitive Strategy, Free Press, 1998
Traditional Strategic Management

- After competitive analysis, management science follows a structured brainstorming approach:
  - define objectives
  - assess external environment
  - assess internal environment
  - identify gaps, or complete a SWOT* analysis
  - develop strategic plan
  - implement the plan

*Strengths, Weaknesses, Opportunities, Threats
SWOT analysis
Source: Chaffey, Digital Business and E-Commerce Management, 2016, Fig. 5.8

Elements of strategic objective setting for the digital business
Source: Chaffey, Digital Business and E-Commerce Management, 2016, Fig. 5.11
Goals, strategies and objectives, performance indicators for an example B2B company (in order of priority)
Source: Chaffey, Digital Business and E-Commerce Management, 2016, Table 5.6

<table>
<thead>
<tr>
<th>Goals</th>
<th>Strategies to achieve goals</th>
<th>Specific objectives (key performance indicators (KPIs))</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Develop revenue from new geographical markets</td>
<td>1. Create e-commerce facility for standard products and assign agents to these markets</td>
<td>1. Achieve combined revenue of £1m by year-end. Online revenue contribution of 70%</td>
</tr>
<tr>
<td>2. Increase revenue from smaller scales purchases from retailers</td>
<td>2. Create e-commerce facility for standard products</td>
<td>2. Increase sales through retailers from 15% to 25% of total by year 2; Online revenue contribution of 30%</td>
</tr>
<tr>
<td>3. Ensure retention of key account customers</td>
<td>3. Attain soft lock-in by developing extranet facilities and continued support from sales reps</td>
<td>3. Retain five key account customers. Online revenue contribution of 100% from these five</td>
</tr>
<tr>
<td>4. Improve efficiency of sourcing raw materials</td>
<td>4. Develop e-procurement system</td>
<td>4. Reduce cost of procurement by 5% by year-end, 10% by year 2. Achieve 80% of purchasing online</td>
</tr>
<tr>
<td>5. Reduce time to market and costs for new product development</td>
<td>5. Use collaboration and project management tools</td>
<td>5. Reduce cost and time to market by average of 10% by year 3</td>
</tr>
<tr>
<td>6. Protect and increase efficiency of distributor and partner network</td>
<td>6. Create partner extranet and aim for paperless support</td>
<td>6. Reduce cost of sales in each of five main geographical markets by 30%</td>
</tr>
</tbody>
</table>

Elements of strategy definition for the digital business
Source: Chaffey, Digital Business and E-Commerce Management, 2016, Fig. 5.17
E-Business Strategy

• It has been claimed e-Business strategy is different because
  – often, new business opportunities arise from the arrival of new technology
  – some opportunities have a narrow window, so it is important to act quickly, however
  – large numbers of IT initiatives fail to deliver, or fail to meet their business case, so it is most important to plan and manage them carefully

Activity

• Find the University mission statement  
  – what are the stated goals and objectives
• Create a SWOT chart for this University  
  – aim for around 3 bullets per quadrant
• Pick a sub-division of the University  
  – one you are familiar with, but not ECS  
  – assess its digital readiness
• How can this sub-division use e-business / IT to support the University goals and objectives?
Session 10

Successful IT Investment

The Real Business of Information Technology

A stage model for digital business development
Source: Chaffey, Digital Business and E-Commerce Management, 2016, Fig. 5.3
Common Issues with IT*

- We’re spending too much on IT
- Projects fail to deliver
- IT doesn’t have a customer focus
- Should we outsource?
- Huge and unknown risks around IT
- Lack of trust between IT and business
- Our CIO speaks a foreign language

* Reported by MIT Sloan School of Management

**IT Spending Key Metrics: By Industry: IT Spending per Employee - 2011 ($US)**

Source: Gartner IT Key Metrics Data 2012
The Real Business of IT*

- Show value for money
  - change your way of thinking to avoid the value traps
  - show that IT provides value for money
  - CIO = cheap information officer

- Link IT to business outcomes
  - show how IT improves business performance
  - convince the business to make IT investments
  - CIO = chief improvement officer

- Become a CIO-plus
  - show how you have value beyond IT
  - you can move on to a COO/CFO/CEO role
  - CIO = career isn’t over

* Richard Hunter, George Westerman, Harvard 2009

Source: Gartner IT Key Metrics: Data 2012
Sample = 2,688
Credibility

• Imagine the embarrassment
  – you propose a new system for a key business unit
  – no one asks any questions or shows any interest
  – after the meeting, the head of that unit says to you
    • you can’t run your own business
    • so why should I let you run mine?
• Before you can make successful pitches you must
  – deliver projects as and when promised
  – gather metrics which show the value of IT
    • and that your costs are lower or the same as competitors’
    • consultants such as Gartner collect and publish this data

Value Traps

• Visibility Traps
  – our performance speaks for itself
  – IT is a cost of doing business
  – IT managers deliver great technology
• Excuse Traps
  – nothing is perfect (and IT is complex)
  – follow our rules, or we can’t guarantee it will work
• Role Traps
  – “the business” is IT’s customer
  – the customer is always right
Our Performance Speaks for Itself

• People only see what affects them most
  – which are usually the problems
• Constantly measure and publicise performance
• Express performance in business centric terms
  – support: time to resolve problems, and cost
  – user: system usage, satisfaction, bus. areas supported
  – web site: new contacts/business volume, queries resolved
• Benchmark IT’s performance against peers
• Quantify the improved business performance
  – increased profit attributable to new systems & processes

Exercise Machine Metrics

• Machine centric metrics
  – Number of hours per week machine is used
  – Number of calories burned per session
  – Muscle groups exercised
• User-centric metrics
  – total weight lost since starting exercise programme
  – percentage of target weight loss achieved
  – time to run 100 meters, and how it’s improved
  – how cool I look since I started exercising
IT Delivers Great Technology

• This is the wrong message
• The right message is ....

Improve IT investing

• Distinguish between improvements which
  – maintain / grow / transform the business
• Estimate the benefits, hard and soft
• Show the impact on profit & loss accounts
• Establish clear criteria for decisions, eg
  – financial attractiveness (cost benefit analysis)
  – alignment with business goals
  – IT efficiency / impact
• Introduce a “value harvesting” process
  – also known as benefit realisation
  – post-delivery reviews ensure the goals are being met
Activity

- Consider a typical e-business project
  - eg setting up a web site to sell or promote items
- What are the likely project costs?
  - what budget headings should be used?
  - which of these is likely to be the largest expense?
- How should the project account for staff time?
- Give a formula for the ROI based on the total project cost, additional recurrent expenses, and the projected income

Some Answers

- For many e-business projects the main cost is staff time, ie wages & salaries
- You can account for (internal) staff time as a lost opportunity cost
- ROI = change in annual profit ÷ project cost
  - change in annual profit = extra annual income - extra annual expenses
  - project cost = opportunity cost + other project costs
    - opportunity cost = contractor wages + training + hardware + ...
- Always express ROI as a percentage
Activity

• Keen’s textbook gives a slightly different formula:

\[(\text{increased cash flow in years 1 to 5}) / (5 \times \text{year 0 costs})\]

• What does Keen mean by “year 0 costs”?
• Why are these multiplied by 5?
• What does Keen mean by “increased cash flow”?
• Why does Keen consider years 1 to 5 in this formula?

Session 11

How to Be a Chief Information Officer
Background and Motivation

• A “C” level position is at the highest level of even the largest company
  – for example, CEO, CFO, COO
  – this should make you a member of the board
• Responsible for IT operations and investments
  – the obvious executive sponsor for new IT projects
• Having a CIO is a relatively new idea
• And a number of papers and books advise on what CIOs should do and how to do it
  – these typically each have a few good ideas
  – which this lecture attempts to summarise

Advice from Microsoft

• Bill Gates’ Business @ The Speed of Thought* has one chapter on the role of the CIO, which advises you to treat IT as a strategic resource, and argues that
  – the CIO has to be an integral part of the development of business strategy and must be able to articulate in plain language what IT can do to help execute that strategy

* Penguin, 1999
Advice From an Industry Group*

• Successful enterprises:
  – align IT strategy with business strategy
  – cascade IT strategy & goals down the enterprise
  – provide organisational structures that facilitate the implementation of strategy & goals
  – create constructive relationships & effective communications between business & IT, and with external partners
  – insist that an IT control framework be adopted & implemented
  – measure IT’s performance
  – and 7 other bullet points omitted here

* IT Governance Institute, Board Briefing, 2003, www.itgi.org

Advice from Consultants*

1. Lead, don’t just manage
2. Understand the fundamentals of your environment
3. Create a vision for how IT will build your organisation’s success
4. Shape and inform expectations for an IT enabled enterprise
5. Create clear and appropriate IT governance
6. Weave business and IT strategy together
7. Build a new IS organisation – one that is leaner and more focused than its more traditional predecessor
8. Develop and nurture a high-performing team in your IS organisation
9. Manage the new enterprise and IT risks
10. Communicate IS performance in business-relevant language

* The New CIO Leader, Broadbent & Kitzis (Gartner), Harvard 2005
Priorities of Successful CIOs

<table>
<thead>
<tr>
<th>Strategic Goal</th>
<th>Worst CIOs</th>
<th>Below Ave.</th>
<th>Above Ave.</th>
<th>Best CIOs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improving the business and IT relationship</td>
<td>3</td>
<td>6</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Delivering projects that enable business growth</td>
<td>9</td>
<td>5</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Attracting, developing, and retaining IT personnel</td>
<td>11</td>
<td>12</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Building business skills in the IT organisation</td>
<td>13</td>
<td>10</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>Expanding the use of information</td>
<td>15</td>
<td>9</td>
<td>11</td>
<td>6</td>
</tr>
</tbody>
</table>

Source: Gartner CIO Agenda Survey 2009

Recent Research

- One study finds CIOs are more likely to be members of the Board in the USA cf France
  Development of Shared Understanding Between the CIO and Top Management Team..., Preston et al, IEEE TEM 2006

- Another study also considers success factors: skills/competencies, organisational context
  - and notes the risks of promoting a good IT manager into a business leadership role (different skill sets)
    Unlocking the Performance of the CIO, Peppard, California Management Review 2010

- Both papers provide evidence that
  - the CIO should report directly to the CEO
  - the role works best when the Board understand IT
Activity

• Imagine you are CIO of a large organisation
• Your CEO tells you that your IT department is too expensive and ineffective
• If you think the allegation is unfounded, what response would you give?
• If you think the allegation has some truth, what response would you give?

Top 10 CIO Metrics*

• Velocity from concept to production (eg releases per year)
• Quality of delivered projects (eg issues per launch)
• Business value
• End user satisfaction
• Process fragmentation (eg no. of IT systems)
• Financial maturity (eg revenue per employee)
• Security (eg no. of intrusion attempts & actual breaches)
• Business Impact of Outages (eg revenue loss)
• Responsiveness to Service Requests (eg ticket close time)
• Business Alignment (eg time spent with business owners)

* [ciodashboard.com 2015]
Balanced Score Card

- A popular approach to performance management, based on four perspectives
  - financial objectives
  - customer perspective
  - internal/business processes
  - learning and innovation
- Published by Kaplan & Norton, HBR 1992
- Define goals and appropriate measures
- Monitor these, and respond accordingly

See articles on IT Score Cards by Berkman 2002, Tillmann 2004, 2005

Example Internet marketing objectives within the balanced scorecard framework for a transactional e-commerce site
Source: Chaffey, Digital Business and E-Commerce Management, 2016, Table 8.4
The CIO Paradox [Heller 2013]

- IT is intimately involved in every facet of the business yet is often considered to be separate and removed from it
- The CIO is the steward of cost containment (hence cannot fail) but must also innovate (which means allowing room for failure)
- You were hired to be strategic but you spend most of your time on operational issues CIOs must envision the future while upgrading legacy systems
- Your staff is most comfortable with technology but must also possess communication skills & be good with people
- You are accountable for the success of a project but the business has to own it
- IT can make or break a company but CIOs rarely serve on corporate boards
The Wolf in CIO’s Clothing [Nunno 2015]

- IT leaders should be Machiavellian
  - a prince who knows no other control but his own will is like a madman, and a people that can do as it pleases will hardly be wise
- Leaders must master the disciplines of power, manipulation, and warfare
  - harness both light and dark sides
  - lamb & lion, dolphin & shark, dove & snake
- The Wolf combines finesse and force to benefit the enterprise and uses manipulation altruistically rather than for his/her own gain

Activity

- Senior colleagues from business do not attend an important project prioritisation meeting
  - as CIO, should you second-guess their priorities,
  - re-schedule the meeting, or
  - cancel their projects?
- Another executive has started an unapproved IT project using external suppliers
  - as CIO, should you insist it is cancelled, or
  - ensure it fails by denying access to key systems & staff?
Session 12

Technology Adoption

Internet Usage

• Most people using the Internet progress through a similar sequence of activities
  – general web browsing
  – using email
  – searching for information about goods and services
  – buying goods and services
  – using internet banking
• Companies also progress through stages
  – see the diagram on the next slide
Smartphone Usage

- This also seems to progress in stages from
  - searching for web-based information through to
  - more interactive and demanding activities

Source: Chaffey, Digital Business and E-Commerce Management, 2016, Figure 1.13
Rogers (1962) Technology Adoption Curve

* Adapted by Moore (1991), who introduced a “chasm” between the early adopters and the early majority

Technology Acceptance Model

• Published in 1989 by Davis et al, and extended by Venkatesh et al (2000, 2003)
Gartner Hype Cycle

- New technology runs through 5 phases
  1. Technology Trigger
  2. Peak of Inflated Expectations
  3. Trough of Disillusionment
  4. Slope of Enlightenment
  5. Productivity Plateau

For example

Activity (1 of 3)

- Place the following on the Gartner Hype Cycle:
  - driverless cars
  - personal care robots
  - smart home automation
  - speech recognition

- Which of these has the greatest potential for:
  - changing society,
  - changing employment?

- Discuss your answers with your neighbour
Activity (2 of 3)

- Find a recent Gartner Technology Hype Cycle
- Pick some technologies on or near the plateau
- Identify when the trigger for these occurred
- And also when they reached peak hype
- How long do you think is typical for new technologies to reach maturity and plateau?
- Are there technologies here which will never make it into productive use?
- Discuss your answers with your neighbour

Activity (3 of 3)

- As an entrepreneur or venture capitalist, when should you target a new technology:
  - when it is on the Gartner hype cycle trigger, peak, trough, slope, or plateau?
- As an entrepreneur or consultant, at what point do you propose that an organisation should adopt a new technology:
  - when it is on the Gartner hype cycle trigger, peak, trough, slope, or plateau?
Session 13

Business Cases

Business Case

• A justification for a proposed project on the basis of its expected commercial and other benefits
  – most often presented as a formal document
  – Keen’s textbook has a 40 page example
    • structure is similar to that given in Wikipedia’s article
• The business case audience is the funding body
  – the board of directors or project board
  – they usually review a number of such cases together
    • rank them via a decision matrix, then decide which to fund
• Not to be confused with a business case study
Better Business Cases*

- Consider the Seven C’s of Content Quality
  1. Correct fit with the scope and impact of the proposal
  2. Concerns of the business case audience are addressed
  3. Complete assessment of all value areas
  4. Connection of investment decision to business goals
  5. Credibility of the analysis
  6. Conciseness of expression
  7. Compelling story usage

*Making Technology Investments Profitable, Keen & Digrius, 2003

Seven Hats for Seven Steps

- Note that business cases are produced by a team
  1. Project Manager
  2. Politician
  3. Salesperson
  4. Detective
  5. Investigative Reporter
  6. Analyst
  7. Attorney
Steps 1–2

1. Scope – who expects what (project manager)
   1.1 Define business case drivers and boundaries
   1.2 Identify deliverables, team, and schedule
   1.3 Solidify executive sponsorship
2. Criteria – who cares about what (politician)
   2.1 Define decision participants
   2.2 Identify decision criteria
   2.3 Specify intangibles
   2.4 Filter criteria and assign weights

Steps 3–5

3. Align criteria – connect the dots (salesperson)
4. Calculate – show the money (detective)
   4.1 Construct explanations
   4.2 Define formula sets and variables
   4.3 Locate metrics and calculate
5. Prove – who says so? (investigative reporter)
   5.1 Determine “proof” needs
   5.2 Provide evidence
Steps 6–7

6. Analyse – find the winner (analyst)
   6.1 Review alignment and compute final ROI
   6.2 Identify key themes
   6.3 Determine recommendations
7. Story-tell – explain it (attorney)
   7.1 Construct graphics and narratives
   7.2 Write ROI stories
   7.3 Define and deliver presentations

Executive Summary

- A good business case starts with an executive summary
  - not an abstract, but a document in itself
- It should convince the busy executive
  - your proposal is worth considering for funding
  - they want to go on to read your full report
- Include clear statements of
  - what action or actions you recommend
  - why you recommend this action or actions
  - in particular, the expected return & other benefits
- As well as summarising the whole business case
Business Graphics and Tools

• Complex ideas are best presented visually
• Business graphics add credibility to your case
• Business cases should include several, such as
  – graphs of accounts and project finances
  – value ladder, risk matrix, decision matrix
• NPV and IRR are not needed in this module
  – they are used to assess & compare value added
  – you are expected to calculate ROI & pay back time

Exercise

• Compare the following 3 pairs of visuals
  – pair 1 both show financial returns on investment
  – pair 2 are examples of value ladders
  – pair 3 are examples of decision matrices
  – what are their good and bad points?
  – of each pair, which do you prefer, and why?
• Discuss your answers with your neighbour
A Graph from Excel

A Better Visual (Voxygen)?
Example Value Ladder (niekmuris.nl)

A Better Example (peoplestreme)?

- Achieve Organization EEFT of $50M
- Reduce Cost to Hire to 14% of hire
- Complete Recruitment within 60 days
- Reduce Employee Initiated Turnover from 24% to 20%

- Implement Performance Management Program (system and training)
- Train all Managers on Performance Management
- Train all HR Staff on Implementing Engagement to Performance Management

- Educate all managers on new hiring process
- Reduce time to hire from 8 weeks to 6 weeks
- Improve Engagement from 47% to 55%
### Matrix Diagram Example:
**Long Wait Time**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Weight</th>
<th>Root Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>Customers wait for host</strong></td>
</tr>
<tr>
<td>Customer Pain</td>
<td>5</td>
<td>High (1) - Nothing else for customer to do.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>1 x 5 = 5</strong></td>
</tr>
<tr>
<td>Ease to solve</td>
<td>2</td>
<td>Medium (2) - Involves host and business.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>2 x 2 = 4</strong></td>
</tr>
<tr>
<td>Effect on other systems</td>
<td>1</td>
<td>High (3) - Gets customer off wait</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>1 x 1 = 1</strong></td>
</tr>
<tr>
<td>Speed to solve</td>
<td>2</td>
<td>High (3) - Observations show adequate energy levels.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>1 x 2 = 6</strong></td>
</tr>
</tbody>
</table>

**Totals:** 28 | 18 | 16 | 13

### A Better Example (nd.edu)?

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Weight</th>
<th>Shallow Well</th>
<th>Deep Well</th>
<th>Rainy Well System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>0.3</td>
<td>4</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Maintenance</td>
<td>0.2</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Efficiency</td>
<td>0.2</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Effects on Aquifer</td>
<td>0.1</td>
<td>4</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Susceptibility to Contamination</td>
<td>0.2</td>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total:** 1 | 2.8 | 3.2 | 2.7
Activity

- So far, the technologies which enabled megacities are based on traditional engineering
- How can *information* technology both
  - improve the quality of life in a mega-city, and
  - increase the density of occupation?
- Pick one of these suggestions
  - list the financial benefits
  - list the non-financial benefits
    - where possible, convert these into financial benefits
  - are the financial benefits likely to exceed the costs?

Session 14

Executive Pitches and Presentations
Assignment Reminder

• This module requires you to
  – prepare and deliver a 3 minute (300 word) pitch
    • targeted at the CEO of your chosen business / organisation
  – prepare a 7 minute (700 word) presentation
    • targeted at the board of your chosen business / organisation

• This session is to give you general advice
  – on how to prepare and deliver business talks
  – whether or not you are using Powerpoint
    • your pitch will be delivered without slides
    • you will not deliver your presentation, just submit slides

General Tips

• Aim for high impact
• Give a positive message
• Focus on business benefits
• Be confident of your material
  – and your presentation package

• Be prepared to have your time cut short
• Special effects should be special
  – use them for emphasis, not on every slide / bullet
• Pick a relevant theme and pick a range of graphics/clip art to match
• Use (visual) metaphors that you and your audience are comfortable with
• Draw inspiration from advertisements, movies, TV, and the arts

Presentation Presence

• When using PowerPoint, or your favourite alternative, do you know how to:
  – go back to the previous slide,
  – skip forward to later material,
  – switch to a different application and back again,
  – add hand-written annotations to the slides, and
  – blank the screen?
Beyond Bullet Points*

• This book covers a particular presentation style
• Each slide should have 3 parts
  1. a headline – which is not the same as a title
  2. a graphic – this can be a photograph or clip art
  3. detailed explanation on the notes page
• The audience will
  – see your graphic, and
  – listen to your explanation
    • which they can read afterwards on your hand-outs

*Beyond Bullet Points, Cliff Atkinson, Microsoft Press 2005

Go Beyond Bullet Points using Meaningful Headlines and Graphics
Go Beyond Bullet Points using Meaningful Headlines and Graphics
Three Act Structure

• Act I (5 “scenes”)
  – where you are, who the audience is, your common goal, the problem & the solution
• Act II (3, 9 or 27 slides)
  – $3 \times 3 \times 3$ (why, how, what)
  – so you can talk for 5, 15 or 45 minutes
• Act III (4 “scenes”)
  – restate the problem, the solution, what its effect should be, and a catchy slogan to summarise

Assertion-Evidence Style

• In the **AE style**, the title is an assertion
  – and the slide body is a supporting graphic
• This approach boosts understanding & recall
  – statistically convincing experimental data
  – subjects were 110 engineering students 😊
• See also Advanced Presentations by Design, Abela; The Craft of Scientific Presentations, Alley; ExtremePresentation.com
Common **Mistakes**

- Too many slides; talking too quickly  
  – it’s not communication if no one understands you
- Putting **too much text** on the slide  
  – go to the back of the room and try to read them  
  – rule of 33: no more than 33 words per slide*
- Using poor colour combinations  
  – the video projector will display them differently  
  – safe combinations are black/white, blue/yellow

* this slide has 58 words, excluding the title and this footnote

**Poor Colour Combinations**

- Red on white
- Green on white
- Yellow on white

- Or vice versa
Busy Slide (1 of 2)

Welm IV

Welm IV (1314 – 15 December 1351) was the margrave of Tuscany (1333–1351) and duke of Spoleti (1333–1351), the third son of Henry IX, Duke of Bavaria, and a member of the illustrious family of the Welfs.

The Welf dynasty (historically rendered in English as Guelph or Guelph) was a European dynasty that has ruled many German and British monarchs from the 8th to 19th century.

Welm inherited the familial possessions in Swabia, including the counties of Altötting and Ravensburg, while his eldest brother Henry the Proud received the Duchies of Bavaria and Saxony, and his elder brother Conrad entered the Church. Henry married Welf to Euphemia, the daughter of Godfrey of Calixt, count palatine of the Rhine. On Godfrey’s death in 1334, a dispute opened up between Godfrey’s nephew Adalbert and Welf over the inheritance of Calixt.

Welf was an uncle of the Emperor Frederick Barbarossa, to whom his mother, Judith, was Welf’s sister. Welf himself was only a decade or less older than his nephew, during whose reign most of Welf’s activity occurred.

When Conrad II of Germany, Frederick’s uncle, confiscated the duchy of Bavaria in 1312, Welf joined his brother in rebelling. In 1322, the Welfs and the Hohenstaufen made peace and Frederick Barbarossa was elected King. He returned Bavaria to Henry V and Henry the Lion in 1326. In October 1329, at Würzburg, Frederick gave Welf as the head of his family, the duchy of Spoleti, margraviate of Tuscany, and principality of Senise among other Italian properties.

Beginning in the 1340s, a feud broke out between Welf and his son Welf VIII and Hugh of Tübingen, count palatine of Swabia. It came to a head between 1344 and 1368 and ended with the resolution of the emperor himself, generally on the side of the Welfs.

When Welf’s aforementioned son-in-law of Italy at Rome in 1359, while campaigning with Barbarossa against Pope Alexander III, Henry demanded the inheritance of all the Welf estates. Welf demanded in return a large sum of money, which Henry did not raise. Welf therefore gave his Italian vassals to the emperor. Welf remained in charge of his Italian dukedoms until 1377, while Christian, Archbishop of Mainz, was imperial vicar.

A rift between Henry and Barbarossa over an Italian campaign in 1366 provided the basis for the proceedings against Henry in 1379, which finally deprived him of all his states, including those he had purchased from Welf. These were given back to Welf, who passed them to Barbarossa’s heir, the Duke of Swabia, on his death in 1393. Thus, all the Swabian Welf estates passed to the Hohenstaufen, descended from Welf’s sister Judith. The male line of Welfs, descended from Henry the Lion, remained with their burgundian patrimony in northern Germany.

Welf was a patron of churches. He was buried in the Premonstratensian monastery that he founded, St. George’s Abbey in Bavaria, where his son had also been buried. He was the patron of the Historia Welforum, the first medieval chronicle of his dynasty.
Things to Remember

• Rich people are busy, easily bored, or both
• You need to hone your message
  – use concise language, and an upbeat message
• Guy Kawasaki’s 10/20/30 rule for venture capital presentations
  – 10 slides or less
  – 20 minutes or less
  – 30 point font at least

Useful Tips

• To boost your confidence, practice
  – ideally, using the actual room / equipment
  – time your delivery
• Ask a friend to give you (gentle) feedback
  – tone, pitch, volume and pace
  – irritating gestures you should abandon
  – whether your jokes are funny
Activity

• Reduce the text below to 80 words or fewer

Chilean Exports

• Fresh fruit leads Chile’s export mix – Chile emerges as major supplier of fresh fruit due to ample natural resources, consumer demand for fresh fruit during winter season in US and Europe, and incentives in agricultural polices of Chilean government, encouraging trend toward diversification of exports and development of nontraditional crops – US Dept of Agriculture, Economic Research Service Report.

• Chile is among the developing economies taking advantage of these trends, pursuing a free market economy. This has allowed for diversification through the expansion of fruit production for export, especially to the US and Western Europe. Chile has successfully diversified its agricultural sector to the extent it is now a major fruit exporting nation. Many countries view Chile’s diversification of agriculture as a model to be followed.

• Meanwhile, the US remains the largest single market for Chile’s fruit exports. However, increasing demand from the EC and Central and East European countries combined may eventually surpass exports to the US, spurring further growth in Chile’s exports.

Activity

• How would you reduce the text below to 33 words?

Chilean Exports

• Fresh fruit leads Chile’s export mix – Chile emerges as major supplier of fresh fruit due to ample natural resources, consumer demand for fresh fruit during winter season in US and Europe, and incentives in agricultural polices of Chilean government, encouraging trend toward diversification of exports and development of nontraditional crops – US Dept of Agriculture, Economic Research Service Report.

• Chile is among the developing economies taking advantage of these trends, pursuing a free market economy. This has allowed for diversification through the expansion of fruit production for export, especially to the US and Western Europe. Chile has successfully diversified its agricultural sector to the extent it is now a major fruit exporting nation. Many countries view Chile’s diversification of agriculture as a model to be followed.

• Meanwhile, the US remains the largest single market for Chile’s fruit exports. However, increasing demand from the EC and Central and East European countries combined may eventually surpass exports to the US, spurring further growth in Chile’s exports.
Chilean Exports

• Fresh fruit is Chile’s leading export
  – ample natural resources
  – demand during winter in US and Europe
  – policy incentives encourage diversification
  – development of non-traditional crops
  – free market economy

• The US remains the largest market

Session 15
Example Elevator Pitch and Boardroom Presentation
Elevator Pitches

• A short informal sales pitch to a wealthy individual, or group of potential investors
  – as long as a ride in an elevator (aka lift)
• You therefore have no slides or other aids
  – so you must rely on “word pictures”
  – and a good “hook” to get audience attention
• Plenty of advice and examples on the web
  – be natural, focus, connect, get invited back

Wow Projects

• Tom Peters claims all work is project work
  – pick projects which matter: Wow projects
    • or re-define them so they do; add personal passion
  – all projects are learning opportunities
  – five criteria for success
    • Wow, Beautiful, Revolutionary, Impact, Raving Fans
• A pitch is about communication and caring
  – just 3 main points, or 1 perfect metaphor
Example Elevator Pitch

Dr Grove, your breakfast factory has gone from strength to strength in the last two years, thanks to your new franchise business model. Standard IT systems have ensured a consistent experience and performance in each café. But the competition is not sitting still, and established companies like MacDonald’s are starting to target your market. Now is the time to lock in your valued customers and reward their loyalty with the Breakfast Café App. At busy times, customers may have to wait up to 5 minutes for their boiled egg. This delay can happen too when the café is quiet and the production line has stopped. But the app will automatically tell the café when the customer is five minutes away, using a combination of geolocation and travel time prediction. Their breakfast will be piping hot and ready when they arrive. We know that each minute saved boosts café revenue and profit by 1%, so this app should give us 5% extra profit. You can use some this profit to provide loyalty discounts, particularly in areas where the competition is most intense and café footfall is falling. Moreover, an advertising campaign promoting these benefits should attract up to 5% extra customers for each café. So this app will generate extra profits and protect existing profits. It’s got to make sense, a BCA for the ABC – who’s going to argue with that? (230 words)

Activity

• Rate this pitch on a scale of 1-10
• What were the strong elements of the pitch?
• What needs to be improved?
  – can you suggest any specific changes?
Andy’s Breakfast Café

Board presentation by
XYZ Consulting

Monday 22 February 2016

context

“In the last year alone, the number of Breakfast Cafés has increased 50%, contributing to a healthy increase in profits of 13%. Our focus is to sustain these increases, and we believe there are plenty of opportunities for doing so.”

Chairman’s Statement, 2015 Annual Report
context (continued)

- In the most recent quarterly filing, however, we can see that ABC has set up only 143 new franchises, down from 231 in the previous quarter.
- Moreover, profits, even in established franchises, have fallen from around 12% a year ago to just 6% in this quarter.
- It is clear that increased competition is having a significant impact on your business.

analysis

- no competitor has replicated the throughput of your patented ABC breakfast factory line
- they continue to provide more choice, but longer queues (lines)
- we know from our own research that each 1 minute extra delay reduces customer numbers by 1%
- in some cases our competitor’s cafés are in more convenient locations, however
- so we need to capitalise on our value proposition
  - advertise to bring new customers and loyalty rewards
  - a mobile app to boost convenience
automated pre-ordering

• your aim is zero delay
  – deliver a piping hot breakfast as the customer sits down
  – this is achieved in 80% of cases
  – not always at peak times, or when the café is very quiet
  – delay can then be up to 5 minutes (to boil the egg)

• pre-ordering could help you achieve 100% success
  – orders come from a mobile Breakfast Café App
  – no user intervention required, pre-ordering is automatic
  – the App identifies when the customer is in 5 minute range
    • using GPS or Wifi geolocation, and past data to predict arrival time

benefits

• we assume 50% of ABC customers use the app
• at present the average wait time is 1 minute
• we believe this can be reduced to ½ minute
• assume 1% extra revenue & profit for minute
  – this translates to 0.5% extra revenue and profit
  – which is an extra $350K profit per year
• and of course this app will encourage new franchisees to sign up with us
loyalty rewards

- can return some profits via loyalty discounts
  - after 10 visits
  - but limited to 1 free breakfast a month
- or collect points toward free ABC merchandise
  - to help promote the brand and boost loyalty
- at present, we have no data in customer churn
  - once the app has a good user base it will provide us with sales frequency metrics
  - and identify when a once loyal customer is lured away by a competitor so we can try to bring them back

advertising boost

- loyal customers are happy to promote ABC
- we know that 50% of your new business is through word of mouth
  - this app should boost customer promotion by 5%
  - as confirmed by your VP marketing, Harry Smith
- in addition, the app will be promoted on your web site, via Google and on Facebook
costs

• we have consulted five major developers
  – each has produced at least 10 mobile apps already
• their estimates range from $80K to $200K
• promoting the app will cost $75K
• staff need to be trained, another $225K
• in the worst case, the project will cost $400K
• so it will take only 14 months to pay for itself
  – or 2 years if the profit prediction is over-optimistic

recommendation

• we strongly recommend that the Board should allocate a project budget of £300K, plus a contingency budget of £100K, to the proposed programme:
  – new CBA mobile app
  – loyalty programme (free breakfast or ABC merchandise)
  – staff training & additional advertising to launch the app
• reduced waiting time will ensure pay back within one year, and extra profit of $350K per year
  – more loyal customers will promote your business
  – you will also be able to monitor and reduce churn
Activity

• Rate the talk on a scale of 1-10
• What were its good points?
• Which aspects can be improved?
  – what specific changes would you make?

Activity

• You have only 7 minutes to deliver this talk
  – which slides or bullet points would you omit?
Session 16

The Influence of Technology on Business Productivity

Productivity

• Consider an article like manufacturing fabric
  – originally this was a labour-intensive craft
  – Adam Smith argued for the division of labour
  – the industrial revolution developed machines
    • powered first by water, then steam, finally electricity
  – factory machinery is increasingly automated
    • industrial robots
• The amount of fabric a single person can produce in a day has increased enormously
  – these days, all they have to do is monitor and maintain the machines which do the real work
Global Productivity Growth

• Productivity grew very slowly until the 1700s
• After that, it has grown up to 2.5% per year
  – RJ Gordon (2012) discusses the graph below

![Graph showing productivity growth over time](image)

The IT Productivity Paradox

• Robert Solow [1987] claims “we see computers everywhere but in the productivity statistics”
• Dedrick [Computing Surveys, 2003] summarises over 50 articles investigating this paradox and find IT investment does lead to real returns
  – but the fact that it took so much study to reach this conclusion shows that the correlation is, at best, weak
  – the top firms, in fact, spend less than average on IT
  – and the return on IT training is much more certain
• CIOs must therefore justify IT spending carefully
Does IT Matter?

• Nicholas Carr (2003) argues however that the strategic importance of IT is declining
  – IT standards mean adopting new solutions is quick
  – so any IT-enabled business advantage is short-lived
  – “first mover advantage” may no longer exist
    • let someone else make the expensive mistakes
    • for example, UPS versus FedEx
• So, you should estimate for your proposals the
  – ROI (Return On Investment), and
  – aim for pay back within 3 years
  – which means you should aim for ROI > 30%

The Digital Advantage*

• A survey of ~400 large companies (revenue > $500M)
• These divide into four quadrants
  – beginner, fashionista, conservative, digital master
• Digital masters (digirati) combine high digital intensity with strong transformation management
  – and achieve high revenue and profits (see below)
Impact on Revenue and Profits

<table>
<thead>
<tr>
<th>Revenue cf Average for Sector</th>
<th>Profit cf Average for Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fashionistas:</strong> +6%</td>
<td><strong>Fashionistas:</strong> -11%</td>
</tr>
<tr>
<td><strong>Digital Masters:</strong> +9%</td>
<td><strong>Digital Masters:</strong> +26%</td>
</tr>
<tr>
<td><strong>Beginners:</strong> -4%</td>
<td><strong>Beginners:</strong> -24%</td>
</tr>
<tr>
<td><strong>Conservatives:</strong> -10%</td>
<td><strong>Conservatives:</strong> -9%</td>
</tr>
</tbody>
</table>

- To achieve high revenue and profits, you need to be strong both in digital intensity and in transformation management.
Digital Intensity Questions

• Rate your agreement with the following statements:
  – we are using digital technologies to understand our customers better
  – we are using digital channels to market our products and services
  – we sell our products and services through digital channels
  – we use digital channels to provide customer service
  – technology allows us to link customer-facing and operational services in new ways
  – our core processes are automated
  – we have an integrated view of operational and customer information
  – we use analytics to make better operational decisions
  – we use digital technologies to improve our existing products & services
  – we have launched new business models based on digital technologies

Leadership Questions

• Rate your agreement with the following statements:
  – executives have a transformative vision of the digital future of our company
  – executives and middle managers share a common vision of digital transformation
  – everyone in the company can contribute to our digital transformation
  – the company is promoting culture changes needed for digital transformation
  – the company is investing in the necessary digital skills
  – digital initiatives are coordinated across functions & regions
  – roles and responsibilities for governing digital initiatives are clearly defined
  – digital initiatives are assessed through a common set of KPIs
  – IT and business leaders work together as partners
  – the IT unit’s performance meets the needs of the company
Activity

Name an Organisation for each of these Four Quadrants

<table>
<thead>
<tr>
<th>Fashionista:</th>
<th>Digital Master:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginner:</td>
<td>Conservative:</td>
</tr>
</tbody>
</table>

Activity

• Do you agree that IT boosts productivity?
• Can you think of one example?
• What evidence can you provide in support?
Activity

• Forbes investigated the value of big data

• McKinsey investigated benefits of search

• If you find any similar reports, let me know

Session 17

Business Process Improvement
business process improvement

#1 CIO priority* in both 2005 and 2010

* Gartner CIO Survey

distinguish between ...

• the new business
  – Amazon, eBay, ...
• the established business
  – Tesco, the University of Southampton, ...
## Organisational Theory

- **Coase: the Nature of the Firm (1937)**
  - interaction costs define organisations
  - and limit how large they can grow

- **Dunbar’s Number (1992)**
  - limits the size of a stable social group
  - to around 150

- **Studying Organisations (Grey, 2005/8/13)**
  - a short book covering many theories
  - from bureaucracy & scientific management
  - to culture & change management
automation of work

- payroll, invoicing, accounting, stock control, automated manufacturing, ...
- motivation was *local efficiency*

business process

- a network of activities that creates value
- examples:
  - product design process
  - sales process
  - order fulfilment process
processes span the vertical boundaries

Q: so how did they ever work?

A: people and paper
a traditional office

SO ...
example 1 – direct line

• quotation time slashed
  – from weeks (for traditional insurance quotes) ...
  – to < 3 minutes in 97% of cases
  – and further reductions to support on-line sales
• demanded
  – radical re-design of entire process
  – explicit coding of business rules
  – integration of many separate IT systems

example 2 – BT Broadband

• order entry and processing via web or call centre
  – capacity >1000 orders per hour
  – reject rate <1%
• demanded
  – process integration across departments: retail, wholesale, billing, ...
  – integration of several IT systems: order entry, CRM, network capacity control, billing, ...
common principles

• design from an end-to-end process perspective
  – rather than a ‘departmental’ one
• minimise ‘special cases’ that require manual intervention
• integrate existing IT systems
  – with a new ‘whole process layer’ on top
• require the customer to do the ‘manual’ parts of the process
  – and take responsibility for errors!

claimed benefits

• **BMP fundamentals** survey data shows:
  – 76% increased process efficiency
  – 75% continuous process improvement
  – 71% increased process quality/compliance
  – 65% cost reduction
  – 63% increased customer satisfaction
  – 57% better executive reporting
  – 52% ability to re-use (sub-)processes
Alternative terms for using IS to enhance company performance
Source: Chaffey, Digital Business and E-Commerce Management, 2016, Table 10.2

<table>
<thead>
<tr>
<th>Term</th>
<th>Involves</th>
<th>Intention</th>
<th>Risk of failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business process re-engineering</td>
<td>Fundamental redesign of all main company processes through organisation-wide initiatives</td>
<td>Large gains in performance (&gt;100%)?</td>
<td>Highest</td>
</tr>
<tr>
<td>Business process improvement</td>
<td>Targets key processes in sequence for redesign</td>
<td>(&lt;50%)</td>
<td>Medium</td>
</tr>
<tr>
<td>Business process automation</td>
<td>Automating existing process. Often uses workflow software (Chapter 2)</td>
<td>(&lt;20%)</td>
<td>Lowest</td>
</tr>
</tbody>
</table>

Hammer urged businesses: Don’t Automate, Obliterate\(^1\)
Hammer & Champy’s best-selling book\(^2\) expanded the argument
Re-engineering was linked with redundancies and lost popularity
so the other phrases are more common these days


Alternative terms for using IS to enhance company performance
Source: Chaffey, Digital Business and E-Commerce Management, 2016, Table 10.2
Activity 1

• After business process re-engineering
  – new software licensing costs £500K per year
  – 100 clerical staff are no longer needed
    • their average salary is £15K
• How much is the annual saving (aka return)?
  – and why might it be more than that?
  – and why might it be less than that?

Activity 2

• Consider an organisation you are familiar with
  – it could be the one you chose for your assignment
• How are its processes defined?
• Where are the process definitions stored?
• How many processes are automated?
• What other processes could be automated?
• What would be the benefits of doing so?
Session 18
Pricing in Theory and Practice

Pricing

• Setting the right price is key to business success
• The price may be fixed or variable
  – it may be set by the seller, buyer, or via negotiation
  – in early days, goods were traded by barter
  – in many markets, haggling is still common
• Prices are fixed in product catalogues & shops
  – there may be discounts for volume and/or loyalty
  – and also sales, promotions, vouchers and coupons
• On the web, prices are infinitely variable
Optimum Pricing

• As you increase the unit price, you sell less
  – that is to say, the demand drops
• This implies an optimum price
  – at which the total profit is maximised
• Pricing theory considers demand *elasticity*
  – how much the demand drops as the price rises
  – if demand drops 1% when the price goes up 1%
  – then profit doesn’t change, so is at its maximum
  • note that profit = demand × (unit_price – unit_cost)

Demand Elasticity
Source: Chaffey, Digital Business and E-Commerce Management, 2016, Fig. 8.22
Other Factors

• Finding the optimal price is important
  – but so too is raising the price customers will pay
• In practice, sales volumes also depend on
  – product, promotion, packaging, place, peers, ...
• The amount the customer will pay is not fixed
  – the perceived utility can be influenced
  – which contradicts rational economic theory
• Psychological experiments confirm irrationality
Psychological Experiments*

- Earning twice as much does not make you twice as happy
- A watch which costs double is not twice as desirable
- People do not always pick the highest return
  - would you rather have $3000, or
  - an 80% chance of winning $4000 (and a 20% chance of winning nothing)
- People react differently to losses
  - would you rather lose $3000, or
  - an 80% chance of losing $4000 (and a 20% chance of losing nothing)
- People sometimes turn down “free” money (see next slide)

* Priceless, W Poundstone, 2010

Activity

- Player 1 is given £10 to share with a stranger
- Player 1 offers £n of this to player 2
- Player 2, the stranger, can accept or refuse
- If player 2 refuses, no one gets any money
  - otherwise player 2 gets £n, player 1 gets £(10 – n)
- Player 1 writes down the amount they will offer
- Player 2 writes down the minimum they will accept
- If possible, play this game in threes
  - player 3 checks the papers, and notes the result
  - and each of you can take turns in each role
The Ultimatum Game

• Players are more generous with their friends
• If the offers are verbal, £5 is the most likely
• Player 2 usually refuses amounts below £3
• The outcomes vary in different cultures
• The outcomes can also depend on gender
• Subjects are more selfish with no observer
• Player 1 is more selfish if player 2 cannot refuse

• Q: What is the relevance to pricing theory?

Pricing Points

• Most customers will buy at some price
• So many businesses offer a range of prices
  – value (cheap), standard and premium products
• Customers choose how much they pay
  – which means that everyone wins
  – provided the price exceeds the cost of the item
  – and the value items don’t damage your brand
• Variable pricing lowers or raises prices
  – to match the maximum each customer will pay
Supermarket Pricing Techniques

• Supermarkets use a range of methods
  – offer items for sale at prices like £4.99 or £9.95
  – keep the same packaging, but reduce the contents
  – re-arrange the store so customers find new items
  – place premium products at eye level
    • and place “value” products on the bottom shelf
    • with comparatively plain packaging
  – multi-buy purchases: buy one, get one free
  – bundling: sell X and Y and Z together
    • even if the customer only wants X
  – anti-clockwise shoppers spend more than clockwise

E-Business Pricing Techniques

• On the web, you can try out many more prices
  – to get a more detailed plot of the “demand” curve
  – users may not realise they are your “guinea pigs”
• Experiment with different layouts to maximise sales
  – maybe it works to display “value” items in a smaller font
  – and without an attractive photograph
• Price comparison sites find you the “best” deal
  – but they cannot check all possible web sites
• A web page can vary the price over time
  – an airline ticket which goes up each time you look
  – try looking at the site later using a different computer
Activity

• Businesses use many methods to alter their customers’ perception of the value of their goods and services
  – identify one method which you believe is ethical
  – and one method you believe is unethical
• Discussion your answers with your neighbour
  – do they share the same ethics as you
Definitions

• A business model is a design for its operation
• Kagermann has four interlocking elements:
  – customer value proposition; profit formula
  – key resources; key processes
• Gassmann et al have four questions:
  – who is your target customer (segment)?
  – what do you offer to the customer?
  – how is the value (proposition) created?
  – why does the business (model) generate profit

Business Model Engineering

• ETH / St Gallen researched business models
• They identified and mapped 55 of these
• They recommend for model change you should:
  get executive support  set up a diverse team
  be prepared for change  iterative approach
  change the dominant logic  a culture of openness
  limit risks by prototyping  don’t over-calculate
  protected/safe environment  manage the process
Some Example Models

- Examples include
  - no frills, performance-based contracting, subscription, hidden revenue, cash machine, franchising, rent instead of buy, freemium, multi-sided platform, crowdsourcing, supermarket
- Each model has used in multiple sectors
  - sometimes in combination with other models
  - the map gives a timeline for each model
- See Business Model Navigator, Gassmann et al, Pearson 2014, for the map and explanations
Apple Computer

- Founded in 1976 by Steve Jobs and Steve Wozniak – members of the Homebrew Computer Club
- Introduced the Apple II personal computer in 1977
  - benefits from the Visicalc spreadsheet, its “killer app”
- IPO in 1980, market value $1.8B
  - raised more capital than any IPO since Ford in 1956
    - over 300 millionaires (founders, early employees, investors)
- Introduced the Macintosh in 1984
  - with a GUI inspired by Xerox PARC research
    - Apple Laser Writer & Aldus PageMaker fuel its success
- Jobs left Apple between 1987 and 1997
  - power struggles with management, business declines
Return to Profitability

- 1997 Microsoft invested $150M, new M/S Office
- 1997 Apple On-Line Store (build to order)
- 1997 Jony Ive appointed Senior VP Design
- 1998 iMac was introduced
- 2001 Mac OS X (based on BSD Unix, NeXTSTEP)
- 2001 first Apple Retail Stores opened
- 2004 iLife/creativity apps: iMovie (‘99), iPhoto, …
- 2006 MacBook Pro introduced, uses Intel CPU
- 2008 MacBook Air introduced (1st ultraportable)

Mobile Devices and Platforms

- 2001 iPod introduced, sells 100M in six years
- 2003 iTunes Store introduced, $0.99 per song
  – 5B songs downloaded in five years
- 2007 change name to Apple Inc.
- 2007 introduction of the iPhone
- 2008 App Store sells apps for iPhone, iPod touch
- 2010 iPad tablet introduced
- 2011 death of Jobs, Tim Cook appointed CEO
- 2015 Apple Watch introduced
Reflection

- Apple started as a computer manufacturer
- And built a reputation for excellent design
- They then moved into consumer electronics
  - which has proved hugely successful
- They also changed their business model
  - or combined existing models in a new way
  - which contributed equally to their success
  - see the list overleaf (Gassmann et al 2014)
Apple Business Models

• the Razor and Blade pattern is named for Gillette
  – give away free razors, sell blades for a profit
  – Apple reversed this (costly h/w, cheap apps & songs)

• Revenue Sharing: iTunes and iOS apps
  – Apple provide the platform, take 30% of revenue

• Digitisation is converting physical goods to bits
  – Fraunhofer invented the MP3 format and license it;
    Apple has earned far more selling MP3 songs & h/w

• the Long Tail is another pattern Apple exploits
  – on-line stores with large numbers of low volume items

Models for Traditional v. Tech Businesses
Pure Digital / IT Business Models

• On-line Auction:
  – platform allowing participative pricing
  – not only eBay but also specialist sites eg WineBid

• Exploit User Data:
  – add value by analysing customer/user data
  – Google, Facebook, Twitter personalised adverts

• Freemium
  – choose between free basic or paid premium services
  – e-businesses such as Dropbox, Hotmail, Skype, Spotify

Pure Digital / IT Business Models (2)

• Open Business:
  – partners contribute ideas and innovations
  – Valve’s games and platforms encouraging mods

• Open Source:
  – services based on free open source software
  – Red Hat makes a profit selling maintenance & support

• Peer to Peer:
  – provide a platform allowing individuals to transact
  – Zopa allow individuals to lend anonymously to others
### Some Example Business Models

<table>
<thead>
<tr>
<th>Traditional</th>
<th>Both</th>
<th>Technology Led</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rent instead of Buy</td>
<td>Direct Selling</td>
<td>Long Tail</td>
</tr>
<tr>
<td>No Frills</td>
<td>Revenue Sharing</td>
<td>Open Source</td>
</tr>
<tr>
<td>Target the Rich</td>
<td>Razor and Blade</td>
<td>Peer to Peer</td>
</tr>
<tr>
<td>Franchise</td>
<td>Subscription</td>
<td>Freemium</td>
</tr>
<tr>
<td>Supermarket</td>
<td>Pay per Use</td>
<td>Exploit User Data</td>
</tr>
<tr>
<td>Integrator</td>
<td>Self Service</td>
<td>Digitisation</td>
</tr>
<tr>
<td>Orchestrator</td>
<td>Licence</td>
<td>Open Business</td>
</tr>
<tr>
<td>Reverse engineering</td>
<td>Affiliation</td>
<td>On-line Auction</td>
</tr>
<tr>
<td>and 11 more</td>
<td>and 20 more</td>
<td>and no others</td>
</tr>
</tbody>
</table>

### Activity

- Consider the following questions
  - are there other technology specific models?
  - or should technology businesses just look for better ways to exploit traditional models?
- Share your thoughts with your neighbour
Session 20
Ethical, Legal and Social Issues

Context

• Society has moved from being mainly
  – hunter / gatherers
  – agricultural workers
  – industrial workers
  – internet / IT users

• These changes are known as
  – the agricultural revolution
  – the industrial revolution
  – the information revolution
Activity

• Is the information revolution real?
  – or is it just hype and exaggeration?
  – does it really compare with the previous two?
• A sanity check
  – how are people lives and work changed?
    • now people work in offices, not farms nor factories
  – how much has stayed the same?
    • foraging for mushrooms is no different
    • but hardly anyone in the UK still forages

Current Situation

• E-business has had significant impact
• It is now possible to use the internet to
  – listen to music, watch movies or TV, and
  – buy most things on-line
• Easier, faster and more convenient than shops
  – these are rarely open 24/7, and
  – cost you time and money to visit
• You can use social media to
  – post photos, update your status, and
  – keep in contact with friends wherever you are
Some Disadvantages

- These innovations are popular and mainly positive
- But the same ease of access and use also enable
  - fake news and degradation of public discourse
  - cyber security threats such as identify theft and fraud
  - on-line harassment and revenge porn
- There are new mental health concerns
  - can you be addicted to the internet / social media?
  - does virtual contact reduce mental resilience?
- Impact of e-business on salaries or employment
  - will e-business destroy more jobs than it creates?

The Shrinking High Street

- Many sectors now have no high street presence
  - insurance brokers, video rentals, music stores
- Banks have reduced the number of branches
  - and there are fewer travel agents than previously
- These are replaced with lower value businesses
  - coffee shops, charity shops, nail bars, ...
- It seems clear that e-business has contributed
  - e-business is now ~17% of retail in the UK
  - but retail has not expanded by 17%
  - so the high street must have lost out
Less Visible Impacts

- Algorithms can be used to filter job applications
- These may learn from H/R experts
- If the experts have unconscious bias
  - then the algorithm may learn the same bias
- There are many difficult issues here
  - can unsuccessful applicants find why they failed?
  - can they sue if the algorithm used is biased?
  - who and how would they sue?
    - the software developer, or the H/R experts?

Unpredictable Impacts

- Self-driving cars and drones are in the news
- It is possible / likely these will have big impact
  - self-driving cars and trains use less fuel
  - will our roads really be safer?
  - what jobs will be lost:
    - train / taxi-driver, postal delivery worker?
  - what new jobs will be created that replace them?
- Note that economies tend to expand over time
  - “a rising tide lifts all boats” cf “beggar my neighbour”
Legal and Financial Issues

• E-businesses can reduce the tax they pay
  – set up headquarters in a low tax country
  – claim that all profit is made in that country
  – traditional businesses also play the same game
• Automation will further erode the tax base
  – some have asked: should robots pay taxes?
• When selling to the world
  – which country’s laws apply
    • where the item was sold, packaged, or bought?
  – likewise with privacy and data protection

Social Impact

• airbnb has been hugely successful
  – ordinary people may find it harder to rent
  – if landlords can rent at a higher rate to tourists
  – is it desirable to push more people to the suburbs
• of course, society is always changing
  – some countries are becoming more prosperous
    • often by benefiting from e-business / teleworking
  – mature economies are aging
    • who will look after the elderly?
    • low-wage care staff or robotic care assistants?
A Current Controversy

• Governments are losing patience with Google*
• They promise to remove unsuitable content
  – but this often takes a long time, and may not happen
• The German government may introduce fines
• UK customers have withdrawn advertising
  – their ads have appeared next to hate videos
  – which contaminates their brand
• Is this just a business issue?
• Or is legislation required?

* Similar problems exist with Facebook, Twitter, ...

Activity

• Pick one practice you feel is unethical
  – and find an e-business which exploits this
  – can and should government(s) change the law?
  – or are there other solutions?
• Share your thoughts with your neighbour
• Do they share the same ethics as you?