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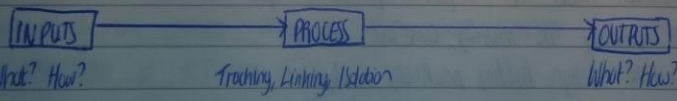
IS EVALUATION

Why it is important?

- Important because of the large amount of money spent on IT all over the world
- Average Org Spends 32% of their revenue on IT. In an information based organisation this is usually 20%
- IS Spending is ranked behind payroll and buildings as the third highest cost ~~element~~ of a service in an organisation
- Global IT Spend estimated at 4.5 billion in 2017 (Gartner)

Know the conceptual basis of Evaluation

- In the conceptual basis for evaluation, the inputs (money and time) and outputs (money, increased productivity) must be measurable
- Outputs are subjective in their valuation; they can very commonly be intangible assets
- In the conceptual basis of evaluation there are issues with tracking, linking the outputs to inputs, and the relationship between cause and effect



- When evaluating, it is hard to establish the causality as there is an uncertainty if a particular project was the sole reason for the output.
- Consider circumstances like market changes, human factors, competitor behaviour and market response.
- It is very difficult to say that an output is solely based on a project when there are so many other variable factors that can also affect the outcome of a project.

Why IS Evaluation is such a difficult problem

- Hardware is easy to value, as it is a physical item that must be signed off, so it's initial costs will be known
- The issues start to arise when time move on and updates become available that are not paid for, there is uncertainty on how to value the automatic updates and how this will then affect the depreciation of hardware as its useful life may also change

-There are many different aspects to take into consideration: ICT value, IS Evaluation benefits, management and realisation.
-The data, or information is the single most important factor, because it is irreplaceable. It is also one of the hardest things to put a value on.

-Three reasons why IS evaluation is so problematic:
- There is no consensus on what constitutes value
- Measuring real cost can be difficult
- Measuring benefits can be extremelly difficult, even impossible.

-The necessity of IS evaluation:
- There is no benefit management without IS evaluation
- Managing IS investment required understanding IS benefit
- Benefit realisation may be related to performance and reward CIS and business

-Basic evaluation model is: inputs → process → outputs
-The inputs generally are money, time and resources
-Process include design, building, marketing development etc.
-Outputs can be increased profit margins or increased services. Issue of linking inputs to outputs

-There are many different variables that can be used to evaluate, but some have conflicting results eg. durability, weight and cost of manufacture
-The more durable a good is, the better the quality for the customer, but more costly to produce
-Some variables are hard to value as there is no unit to measure or compare them

-If an entity is trying to value a particular project, how can they be sure that the project has been the ~~positive~~ effect of the outputs and changes
-They could be the result of many factors together → There is a high degree of uncertainty
-It may not be simple to determine but statistical tools such as regression analysis, Factor analysis, PCA could be used to gain more certainty

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SPECIFIC PROBLEMS IN DEFINING VALUE, COSTS AND BENEFITS

Value:

- Many definitions of value, one definition: "the amount of some commodity, medium of exchange etc, which is considered to be an equivalent for something else; a fair or adequate equivalent return"
- Value is commonly expressed in terms of exchange: it is influenced by context and can be extremely volatile (stocks, house) commodities)
- Measurement of value is a problem; certain things can be easily measured at any given point in time with money (increased sales or lower cost).
- Then there are others that have no metrics, and thus, are not easy to measure such as customer satisfaction, employee morale, impact of non-investment

- Another issue is when to measure
- Value can change over time so this is an important factor to take into consideration.
- There is also the issue of value being subjective
- There are so many different stakeholders in any given company and each of their perspective on the value of ICT may differ
- Different value metrics can give different results

- Consider having to value email, what means could be used, and how would it be measured?
- What is the return in investment of putting such a system in place, and what will this affect directly and indirectly?

- There are many things to consider in valuing assets eg what to include in the valuation, what headings to put things under different budgets, what the write off speed is.
- Value of customised software?

Costs:

- Main issue with cost is visability - the iceberg problem
- Many organisations don't know how much they have invested in IT
- IT costs can arise and be interpreted in different forms; they can be regarded as assets, an investment for return, an expense or lifetime cost.

- There are direct costs associated with IT like hardware, system software, people costs and outsourced activities, these should be relatively easy to measure and be included
- The indirect costs can be learning curves, the disruption to other projects and maintenance and operational costs
- Costs could be said to come in three layers, primary, secondary and tertiary and they become less visible.
- What is not counted does not count- the problem of capturing data
- Missed costs could occur, these include disruption, displacement and dis benefits
- There can be no-assigned costs which include poor coding systems, move and abuse

- costs can be difficult to estimate accurately, they can be difficult to isolate.
- It needs to be determined what exactly is going to be costed, this can be total IS cost, IS project cost or system cost
- When costs are going to be realised also needs to be established
- There is also the allocation of overheads from the company as a whole on the different segments and departments
- An absorption rate for these need to be established - This could be a number of things from the number of employees PC to the disk space usage
- IS budgeting, sometimes management will inflate the budget so they come in under it, and then could be subject to bonuses

Benefits

- An IT benefit is: an advantage or good, An outcome that is desirable for some reason, something produced by or with the assistance of IT which a firm is willing to pay.
- In functional terms, IT benefits relate to the fact that:
  - The technology allows tasks to be completed with:
    - Greater accuracy and quality in less time and for lower cost.
  - It may enable organisation to do something it cannot currently do
  - It may assist a company with regulation
- Easy to quantify impact: - Lower inventory - Reduced headcount - Higher on time delivery rate - Reduced levels of bad debt - Lowering ordering costs

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Dis- Benefit

External	Undermining product value loss of contract	Losing high value customers Virtual & reputational damage
Internal	Turf wars Increased vulnerability Direct	Legal Risk) Time wasting behaviour Indirect.

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- Hard to quantify impacts: -Better teamwork -Better Decisions -staff Satisfaction -Greater customer knowledge Faster communication

- traditional method of benefit: in the beginning the old fashioned way was to spend money, make savings or increase output and work out the return
- Can use accounting methods, capital budgetings, ratios or cost benefit analysis
- cost benefit - work out all the ass, value all the benefits, do benefits outweigh the cost?
- Taxonomy of methods:
  - Financial - use NPV, ROI, and traditional tools
  - Economic/Econometric - seem to use conventional means of input and output
  - Multi criteria - covers a variety of techniques
  - Soft - try to measure user satisfaction, utility etc
  - Portfolio - views IS as a package of investments and seeks to balance
  - Holistic - tries to integrate various techniques

- The productivity paradox: "We see computers everywhere except in the productivity statistics" Robert Solow
- Possible reasons: • Data is not adequate
  - Benefits are lagged
  - Benefits are in areas that are below the radar
  - Benefits are mainly realised by the customer
  - Benefits have been absorbed by other factors
  - Have no benefit because: ICT deployed in areas with low payoff, has only resulted in cost displacement
    - Changes brought by ICT have been minor.
- Result - the great benefits hunt.

- Good practice: • Ensure measurability
  - Clear business objectives
  - Be clear in reasoning
  - Be clear in your time frame