The embedding process from a public policy perspective management essay

Government departments are often tasked to solve very complex policy problems. These complex policy problems can be referred to as wicked problems since they often go beyond the capacity of a single department to understand and respond to. Often, there are disagreements on the best way to tackle these complex policy problems within various government departments. Examples of wicked problems include issues such as global climate change and energy security. Successful management of these wicked policy problems requires a reassessment of some of the traditional ways of working and solving problems within government. The next section describes problem formulation in a public serve sector using the system approach, the author present a process in an actual work environment, describes the process and the outcomes and observations of the effectiveness of the process.

Problem Formulation: Innovation chasm

The term innovation chasm as defined in South Africa, refers to the inability of the country to convert basic knowledge into commercial products and processes. Innovation is recognised as a vital component to the future economic growth and improvement of the quality of life of all South African citizens. In 1996, the South African government developed a White Paper in science and technology, which was followed by the National Research & Development Strategy (NRDS) in 2002. According to the OECD Review of the South African innovation policy, the Department of Science and Technology (DST) stated that the NRDS was the key innovation strategy in to address the innovation chasm in South Africa. In response to the gaps identified in the OECD Review, the DST developed a Ten Year Innovation Plan (TYIP) in 2007.

The TYIP sets out five grand challenges in science and technology, namely the Bio-economy, Space Science and Technology, Energy Security, Global Climate Change, and Human and Social Dynamics. The achievement of the TYIP depends on the achievement and realisation of specific targets that must be achieved by 2018. However, some of the output targets that guide the TYIP are unlikely to be achieved for a number of reasons (refer to figure below)

Figure 1 Performance barometer of the TYIP

System Approach to solving the innovation chasm

In order for to achieve the desired target in 2018, the DST need to design a process which ensure that the targets are achieved in 2018. Using the embedding process the author suggest resolving the problems by asking probing questions such as 1) Why set a target of 3000 SET Phd graduates if the system can only produce at 800 graduates per year? 2) Why target 250 patents when only between 50 to 100 patens can be filled? 3) Why target 2% R&D expenditure when the predicted value is 1. 3 %.

Outcomes and observations of the effectiveness of the process

By using the system approach is the evident that some do the output targets of the TYIP are unlikely not to be achieved. One of the main reasons is that many they fall outside the domain of the DST and thus have dependent alignment with other governments departments. For example, in order for South African universities to produce 3000 SET PhD graduates per annum, this requires a significantly higher numbers of pupils passing maths and

science and pursing SET careers. In order to achieve the TYIP target, it is imperative to improve the level of mathematics and science education at schools and tertiary institutions.

Conclusion

To increase the number of patents, it may be useful for DST to consider introducing incentives for patents similar to when researches publish paper in journals. Currently, there are no incentives for researches who file patens. Lastly, the private sector contributes close to 60% of the total R&D expenditure in South Africa and the government contributes the remaining 40 %. Cleary, the government cannot achieve the target of 2% if it does not partner with the private sector.

Quiz Two: Buying a new house using Multi Criteria Decision Making tools

Decision Making

Decision-making is an essential aspect of in our daily life. We take a number of decisions consciously and subconsciously. A decision may be defined as a course of action which is consciously chosen from among a set of alternatives to achieve a desired result (Webster's Dictionary). According to Trewatha & Newport (1982: 148), decision-making involves the selection of a course of action from among two or more possible alternatives in order to arrive at a solution for a given problem.

Often we find ourselves involved in multi-criteria decision making in our day to day life. For instance if one want to buy a house, one will have x number

of criteria's and at the same time there will be y number of stakeholder (s) who influence directly or indirectly to your decision. Stakeholders are the people who involved in the decision making process. Multi-Criteria decision making tools are aimed at supporting decision makers faced with making numerous and sometimes conflicting evaluations. MCDA aims at highlighting these conflicts and deriving a way to come to a compromise in a transparent process. The next section, illustrates how decision tree making tool can be use to make a choice between three houses.

House Comparison Table

Feature

House A

House B

House C

Location

Waterkloof

Midrand

Centurion

Price range

1 360 000

1 200 000

1 00 000

Size of House

620 m2

320 m2

320 m2

Lot Size

1 150 m2

840 m2

600 m2

Transfer costs

Excluded

Included

Excluded

Rates and Taxes

800

700

750

Type of house

Double storey

Double storey

Single storey

Number of bedrooms

4

3

3

Number of baths

3

2

2

Kitchen

Huge open plan

Cherry wood granite

Upgraded kitchen

Dining room

1

1

1

Living room

1

1

1

Laundry

1

1

0

Study

1

1

1

Extras room (Office, Staff Quarters)

Flatlet

Staff Quarters

Office

Number of garages

Double + 2 carports

Double

Double

Patio

1

1

0

Extras (Fireplace, Spa/Jacuzzi)

Pool

Fireplace

Fireplace

Garden

Established garden

No garden

Neat garden

Condition

good

New

TLC

Neighbourhood features

Proximity to Schools

5 km

15 km

20

Proximity to Work

10

30

40

Proximity to shops

3

5

10

Public transport

Bus route

New area

Gautrain

Security

Stand Alone

Security Estate

No security

Decision Trees

Decision trees are a simple, but powerful form of multiple criteria decision making tools. They are a support tool that uses a tree-like model of decisions and their possible consequences, including chance event outcomes, resource costs, and utility. Decision trees model is an excellent tool for assisting a decision maker to choose between several courses of action. They provide a highly effective structure within which a decision maker can lay out options and investigate the possible outcomes of choosing certain options and also help one to form a balanced picture of the risks and rewards associated with each possible course of action.

Quiz Three: Briefing document on Systems Thinking: A literature study

Quiz Four: Chaos theory: Public Service Perspective

Chaos theory offers enormous options for improving our understanding of both public policy development and public administration. Its fundamental concepts of non-linear relations, unpredictability, self-organisation and complex systems provide interesting insights about patterns that can assist managers address the limits of linear based policy and administrative strategies. Chaos theory refers to an attempt to understand the relation between chaos and order (Dolan et al. 2003: 24).

A number of organisations, including government operate in turbulant and dynamic environments, which means uncertainty, unease and feelings of powerlessness with people in and around organisations. Modern public management is often characterised by a tendency to rely on performance measurement in order to reduce complexity. Public service managers are often comforted with uncertainty and ambiguity when performing their work. Ambiguity refers to the absence of or conflicting interpretations about what needs to be done, when and where.

Understanding chaos theory is important because of its significant implications for public administration and public policy analysis and implementation (Farazmand 2003: 341). Regrettably not much has been written about chaos theory and public administration and organisations. The author is a Deputy Director at the Department of Science and Technology (DST) and describes a problem within the DST, and applying the chaos theory principles.

Work Complex Problem: Culture survey

Every organisation has a particular culture, determined by the individual's values and experiences which each person brings to it, the ways in which people behave and interact with each other. The DST recently conducted a culture survey within the organisation. All employees were given the opportunity to participate in the survey. Survey data was processed by external consultants, in order to ensure respondents anonymity and to ensure objectivity in analysing the data. Some of the key findings of the culture survey were that a high percentage (43%) of middle managers considered leaving the organisation. The survey data indicated that perceptions related to a number of problems including a) Communication b) Personal Development and Career Management and c) organisation values. The next section the present an alternative solution that could assist the organisation achieves a fractal quality. The key characteristic of fractal quality refers to a state where irrespective of the where you penetrate the organisation the same behaviour permeates throughout.

Complex problems implies more than one solution to a problem

Complex problems have multiple causes and thus it is unlikely that there is one solution or intervention to solve a complex problem. It is more likely that there are a range of possible interrelated actions, and the role of the manager is to facilitate a process that gives rise to a coherent, self-reinforcing string of reactions that move the overall system in the desired direction.

A fractal quality within the DST can be achieved only if the people are eager to lean new ways of thinking and doing things. The employees should be encouraged to put aside their differences and learn to be open with each other, understand what the organisation needs to achieve, agree on a shared vision and work together as a team to achieve a common goal.

Complex systems self-organise

Looking across the three key findings of the culture survey it is possible to identify some repeating patterns using the complexity lens offered by the chaos theory. According to this theory all culture survey problems must be viewed as a dynamic interaction between people with different cultural, religious and economic background. Emergence has its origin in the capacity of these different systems of backgrounds to self-organise and take on systemic properties that cannot be reduced to either religious or cultural factors.

Social boundaries are open systems that are fluid and socially constructed

Managers often define limits of social systems, for example by dividing the work load according to different divisions and creating job descriptions for each employee. However, if a manager is unaware of the artificial nature of these boundaries he risk missing critical factors that could trigger positive or negative responses from within the organisation. Being aware of these artificial boundaries can help avoid a number of problems. A good manager is able to explore boundaries between individuals and groups from multiple perspectives. Working across artificial boundaries requires knowledge of how the existing boundaries were created and maintained by social processes. In

practice, this is depended on the managers ability view the complex problem from multiple perspectives and to sense a way forward.

Quiz Five: Multiple Choice

False

Statement 2

True

True

True

True

b

Quiz Five: Du Pont Case Study

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