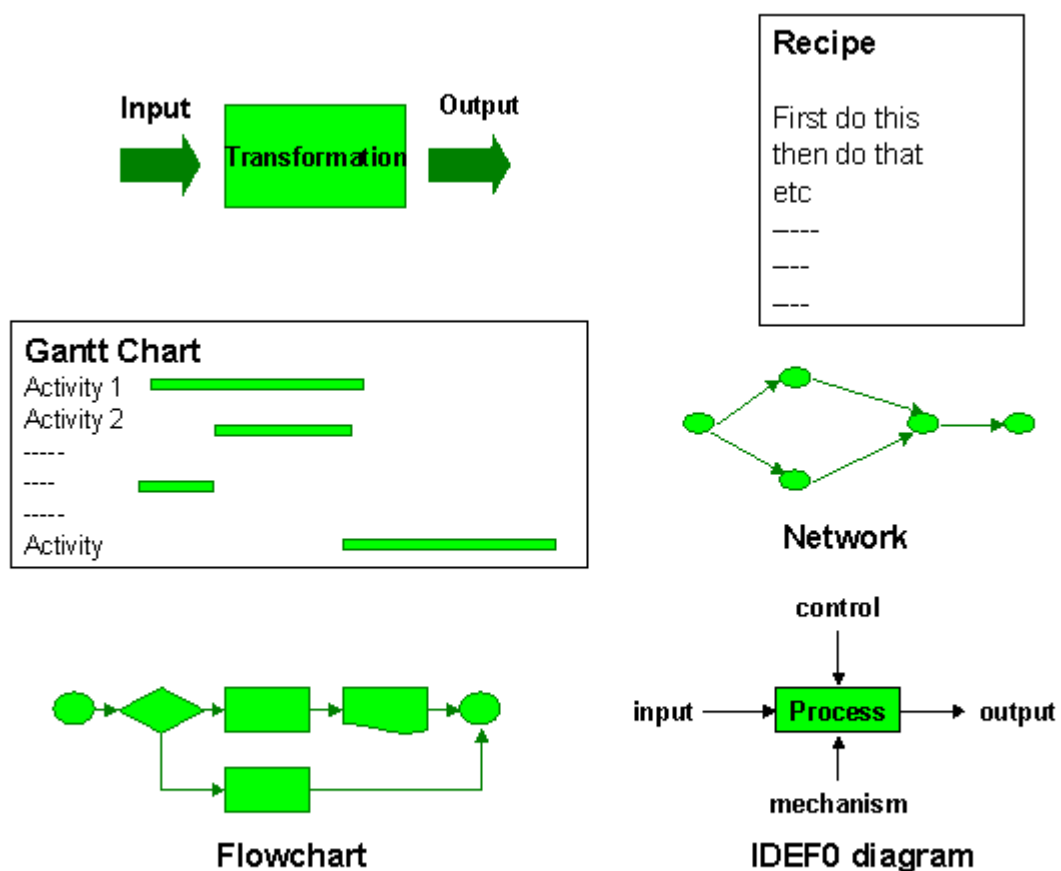


Systemic Processes

A systemic process is not a traditional model of a process. Traditional models include, for example:

1. an input transformed into an output;
2. a recipe;
3. a Gantt or Bar Chart – as commonly used in construction projects;
4. a network chart;
5. a flow chart;
6. an IDEF0 diagram.



A systemic process is quite a different model – though it has all the features of traditional models. The primary innovative characteristics are that processes are

- layered wholes and parts at the same time,
- comprehensive in covering all attributes including both hard (physical) and soft (human and social) systems,
- structurally self-similar – just like a snowflake or the pieces of a jigsaw.

Process 'pieces' form clusters and clusters of clusters which are the layers of parts of the whole. The processes are, of course unlike a jigsaw, dynamic and ever changing. Systemic 'jigsaw' processes capture that change. Change derives from a potential that drives a flow (or dually from flow that creates potential). In classical physical systems potential is electromagnetic or gravitational and flow is movement. For example, voltage, current and velocity, force. In human affairs the potential is contained in answers to questions 'why' – purpose, aims and objectives. The change is contained in answers to questions 'who, what, where, when'. The transformation of the flow from one 'state of affairs' to another is contained in answers to questions 'how'. The aim is to model the right information 'what' (data as performance indicators, success criteria and shared care records), for the right reasons 'why' (purpose), to the right person or organisation 'who' (role, stakeholder), in the right way 'where' (context) and at the right time 'when'.

Systemic processes are wholes and parts at the same time. They are 'being things' that change through natural forces – living or inanimate. You and I are 'being' wholes as individuals and yet also parts of family and social groups. As individuals 'wholes' we are made of parts such as our muscular skeleton structure and digestive systems. We are as we are because the parts collaborate to form the whole – in other words we show 'emergent' characteristics.

In other words, a systemic process is a **peg on which we can attach all other ideas** and becomes a basic tool for describing a system. For example, a product is an output of a process. It is normal to keep these two ideas quite distinct because, for example, it is useful in defining what the client perceives he/she is buying. But because products do things and exist through time then **products are also processes** in a wider systems view.

Using the 6 basic questions of why, how, who, what, why, and when we can 'hang' all our ideas such as quality, value, risk, teamwork etc as below and they become attributes of a process.



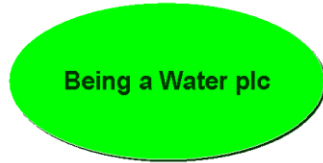
Naming

We name each systemic process using the present participle. That is we use the '___ing' word because that gives sense of action – doing something. So, we have as examples 'Doing a process', 'Driving a car', 'Designing a bridge', 'Calculating the stresses in a beam', 'Testing a blood sample', 'Writing a document', or 'Reading for a degree.'

Structuring the processes

A total system is described by naming the process that leads to success. This is the 'top' process. To achieve the success of this process then many sub-processes also have to be successful. We arrange them in levels in a hierarchy of processes like the clusters of a jigsaw or a snowflake. We call these [holons](#) because they are both parts and wholes at the same time.

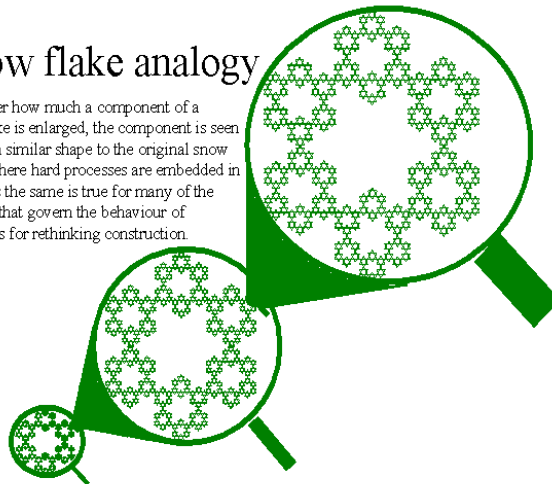
What follows is a hierarchy of the top few processes for a water company. Notice that the very top process is the process of being i.e., 'Being a Water plc'. We could choose other processes as the modeller requires for his/her purpose.

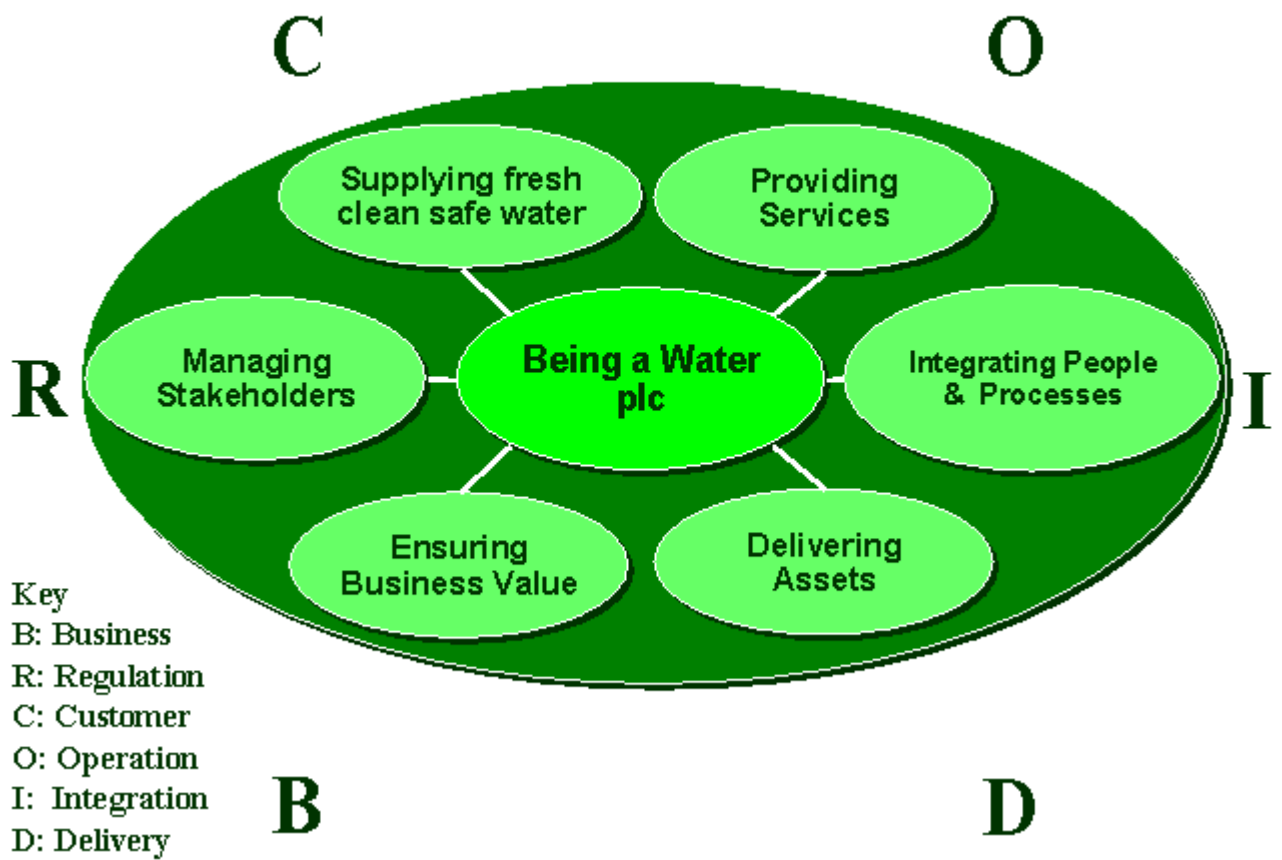


Let's divide this top process into some sub-processes with B for clusters of Business processes, C for Customer/Client, I for Integrating, O for Operational and D for Delivery as below.

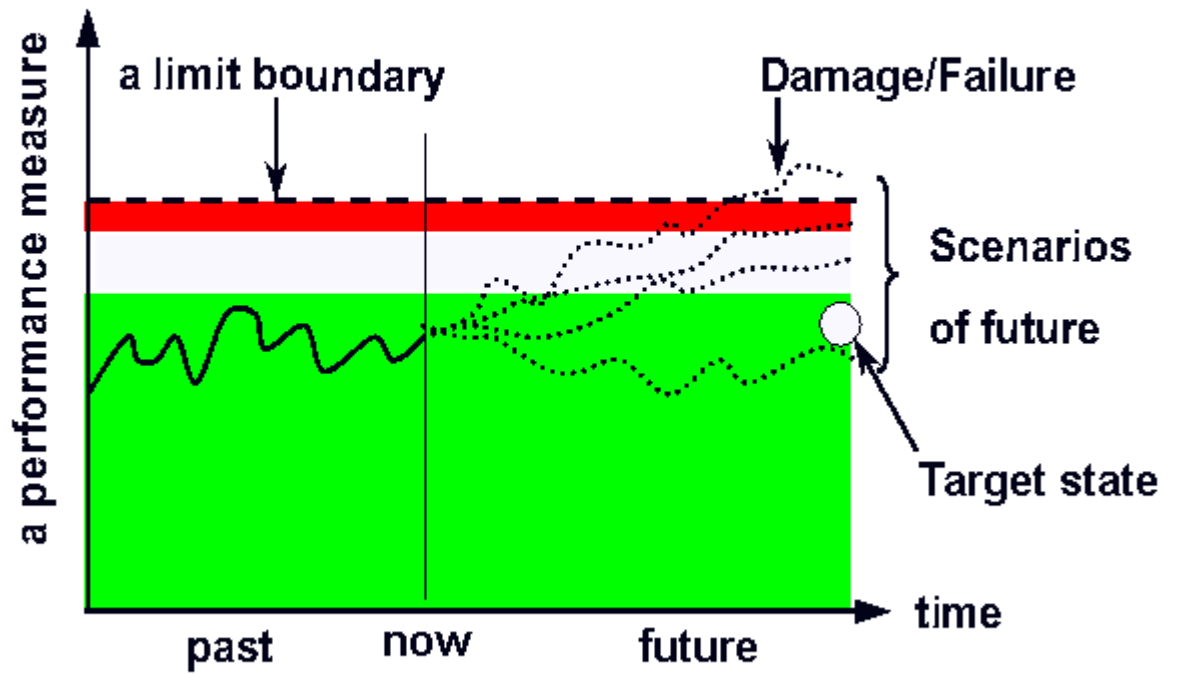
Snow flake analogy

No matter how much a component of a snowflake is enlarged, the component is seen to have a similar shape to the original snowflake. Where hard processes are embedded in soft ones the same is true for many of the systems that govern the behaviour of processes for rethinking construction.

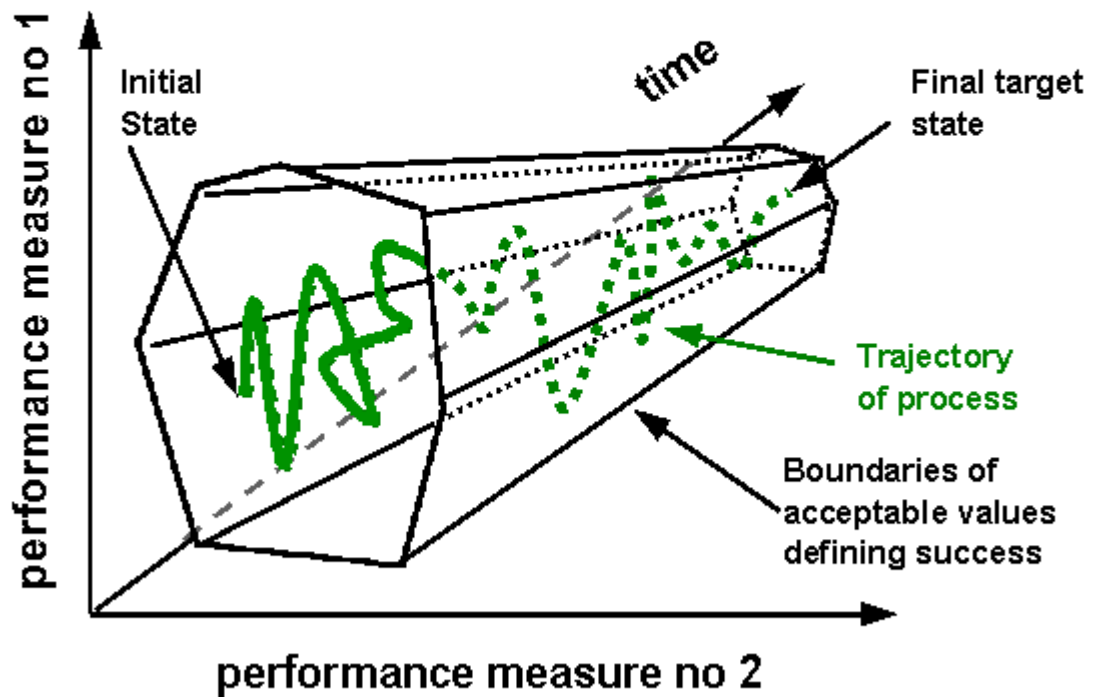




Each small ellipse is a process, and the large ellipse defines a set of processes at a 'level of definition' of the company. We continue the process of naming new processes.



Now we show two performance measures.



Of course, in general, there are very many performance measures. Some are easy to measure and reasonably precise such as the dimensions of a building. Some are more difficult and uncertain such as the settlement of a building. Some are even harder to establish such as financial measures like dividend cover or share price. Most difficult of all are 'soft' people issues such as 'team spirit' or 'morale'. These are very real phenomena, easy to recognise but very difficult to measure dependably.