Old Dog, New Tricks

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Abstract
Enterprises are increasingly adopting a capability based approach to optimise their effectiveness in achieving their outcomes and this paradigm is attracting significant interest amongst the Systems Engineering community. In the UK, the Ministry of Defence (MOD) has adopted Through Life Capability Management (TLCM) as its acquisition model and is transforming itself to more effectively deliver affordable military capability. BAE Systems has been supporting the UK MOD in its implementation of TLCM and early work has identified the essential role of Systems Engineering in defining and addressing the challenges associated with effective capability management.

This paper presents ongoing work by BAE Systems in the development of thinking, methods and tools in the context of capability acquisition. Additionally, the paper offers insights into the changes to traditional systems engineering competencies and processes that will be required to enable industry to efficiently deliver its systems and services within a capability context.

Terminology
The following key terms are used in this paper:

Table 1: Key Definitions

Term	Definition
Capability	Most generally “the ability to do something”, in a UK military context, capability is “the means to generate an operational effect or outcome including its sustainment and enhancement” thus capability is enduring.
Capability Element	The constituent elements that together comprise the capability. UK MOD defines these as the Defence Lines of Development (DLODs) – Training, Equipment, Process, Information, Concepts and Doctrine, Organisation, Infrastructure, Logistics.
Outcome	Outcomes measure the success of a system
Output	Outputs measure observable products of functions and processes
System	A combination of interacting elements organized to achieve one or more stated purposes. (ISO/IEC 15288:2002) Note: A system may be considered as a product or as the services it provides.
Enterprise	A complex, socio-technical system that comprises interdependent

	resources of people, information, and technology that must interact with each other and their environment in support of a common mission[1]. An example of which is the enterprise to defend the UK and its interests, comprising the Front Line Commands, MOD, other Government Departments and industry.
Organisation	A single group such as a business or government department, brought together to achieve a specific goal.

The Capability Challenge

As a society, we are becoming increasingly demanding of the systems and services that surround us and are focusing more on the outcomes from those systems and services rather than the outputs. For example, we want integrated transport services yet require that they provide ever greater value for money, and we expect a national security service that provides high degrees of protection yet has minimal impact on our daily regimes. As a consequence, enterprises such as defence, transport and health are increasingly looking to acquire and manage capability rather than focusing on systems and equipment. Furthermore the current economic climate increases the pressure on organisations to deliver the same or increased capability at the same or lower cost. New capability acquisitions will need to demonstrate value for money through-life whilst providing solutions that are able to respond to changing operational environments and needs. These solutions will be further constrained by the need to make effective use of legacy and extant systems. This capability challenge is an example of a "Wicked Problem[2]" [Rittel and Webber 1983], and requires collaborative working relationships between all stakeholders to address it.

Capability is realised by the orchestration of multiple elements and recognising the value of the relative contributions of these elements to achieve a given level of capability is a key challenge to acquiring and managing capability. In the UK MOD context, these elements are known as the Defence Lines of Development (DLODs) which are described using the acronym TEPIDOIL as follows:

- **T**raining
- **E**quipment
- **P**ersonnel
- **I**nformation
- **D**octrine & Concepts
- **O**rganisation
- **I**nfrastructure
- **L**ogistics

[1] Giachetti, R.E., Design of Enterprise Systems, Theory, Architecture, and Methods, CRC Press, Boca Raton, FL, 2010.

[2] "Wicked problem" is a phrase used to describe a type of problem where there is no single, calculated "correct" answer, instead a formal/informal process of optimisation is necessary to identify and select from alternatives each with differing merits/demerits across a wide criteria set including for instance social, economic, political factors (e.g. PESTLE).

This integration becomes increasingly difficult as multiple organisations are involved in the delivery of the capability components and for some lines of development, the same or similar systems will contribute to numerous capabilities making the task of linking system requirements to capabilities even more difficult (e.g. training system, test equipment, infrastructure elements).

It is unlikely that any organisation will be able to acquire or provide the totality of its desired capability given the real constraints of external influences and limited resources. Therefore, it is most likely that organisations will be required to make trades both across and within capabilities in order to achieve the optimal set of capabilities within the bounds of reasonable risk, cost, environmental policy etc. The types of trade that an organisation may need to perform are as follows:

- *Between Lines of Development* – for example, providing a built-in training system as part of the Equipment to reduce demands for classroom based training facilities
- *Between Capabilities both for single and multiple organisations* – for example the capability to provide an effective health service set against an effective transportation system

In identifying the optimal solution, organisations will be required to consider multiple perspectives such that the proposed solution is balanced with respect to the following:

- Initial and Through Life Cost
- Technical and Operational Risk
- Capability realised
- Timescales
- External Influences – Political, Economic, Social, Technological, Legal, Environmental (PESTLE)
- Industrial Capacity and capability

The challenge for organisations is to find the optimal solution that considers and trades across all the above perspectives whilst supporting current and future needs. To do this, organisations need to focus on what is required rather than perhaps what is desired, taking an outcome rather than output perspective on capability acquisition.

By adopting a systems approach to Capability Management, organisations will be able to make evidenced-based decisions that consider multiple perspectives whilst providing an understanding as to how the capability can be realised through the acquisition of discrete systems and services.

Systems Approach to Capability Management

To address some of the issues outlined above, the UK MOD has adopted Through Life Capability Management (TLCM) as its acquisition model. Inherent in this approach is the need to work more closely with its industrial partners. TLCM relies upon informed decision making, taking a holistic through-life perspective to enable the MOD to acquire the highest levels of capability within an acceptable cost envelope.

The focus of this approach is to make acquisition decisions based on capability rather than the traditional focus on equipment and technology. In addition, consideration must be given on how to sustain the capability. This requires synchronisation between the lifecycles of systems and considering them within a continuous context. Thus, managing the transition between one generation of capability and the next adds further to the complexity of the problem.

The Fundamentals of Effective Decision Making

One of the key enablers to effective decision making is the availability of high quality, timely and coherent data. To achieve this introduces the need to have a clear and structured approach to information management (IM). The implementation of any IM solution should strive to achieve the goal of "enter once, use many" to help remove inconsistencies and maximise sharing across the enterprise. This approach requires a greater understanding of the provider and user relationships and requires innovative commercial approaches to allow for greater sharing of data across organisations.

Once information is structured in an appropriate manner, it is important that it is used in the most effective manner through the use of intuitive visualisations, methods and toolsets. By considering the context within which the information is to be used, it can be appropriately fused and visualised to support the decision making process. Effective visualisations allow the decision makers to quickly identify and focus on the priority areas and provide sufficient detail such that insightful conclusions can be drawn.

For successful decision making, it is critical that a collaborative approach is taken that enables effective engagement between all stakeholders involved in realising the capability to be achieved. In all cases, these stakeholders will span the customer/supplier boundaries and in particular may require the joint working of competing organisations. It is imperative therefore to recognise each of the stakeholders' objectives to ensure that the outcomes achieved are of mutual benefit, although one must also recognise that in a competitive environment all participants may not be "winners".

The Systems Engineering challenge is to define and develop a framework to support capability-based decision making which allows multiple stakeholder viewpoints to be taken into consideration, respecting the imposed bounds and constraints, to support the capability goals of the enterprise.

An Example Decision Support Framework

BAE Systems has been working closely with the UK MOD to understand and manage the business change needed to operate in a capability-focused manner. Practical experience has shown the importance of systems thinking and adoption of a systems approach to facilitate decision making within the capability context. As a result of some of these early engagements, BAE Systems has developed TRAiDE™ (TLCM Robust Acquisition inclusive Decision Environment) [3] as a means to support capability based decision making and to address some of the key short, medium and long term challenges of capability acquisition (see Figure 1).

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[3] TRAiDE™ is a trademark of BAE SYSTEMS. US patent applied for.

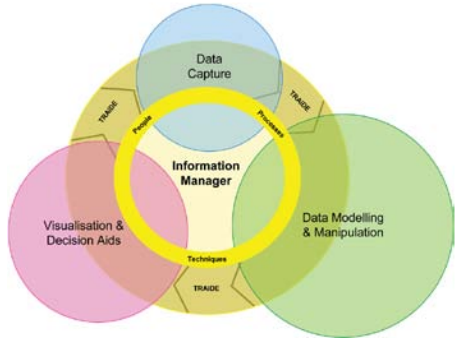

Figure 1 : TRAiDE™ provides a decision framework enabling the user to link separate models via a common Information Manager, and display and combine results in an intuitive format

TRAiDE™ adopts sound architectural principles to structure and articulate the relationships between components of the enterprise within a common framework. This approach allows direct and indirect dependencies between organisations and capabilities to be captured and allows different perspectives to be considered through the use of the standard views within the architecture framework. For the engagements with the UK MOD, BAE Systems has adopted the MOD Architecture Framework (MODAF) although the methodology is applicable to any suitable framework.

The open approach of TRAiDE™ enables disparate sources of data to be exploited, structuring it within the architecture to enable further analysis through visualisation and use of specific methods/tools where appropriate. TRAiDE™ has been developed in an iterative manner to ensure that it can deliver against current needs and incorporate new thinking and artefacts where appropriate.

The following sections discuss some of the approaches and visualisation techniques that have been successfully employed to aid understanding of the capability context and hence support informed decision making.

Methods

In addition to an architectural approach, there are many examples of systems approaches that can be used to support capability-based decision making. Some of the techniques that have been applied within this context are as follows:

Affinity Diagrams

Traditionally used to group ideas in brainstorming, affinity diagrams can be used to partition business objectives into a set of defined operational capabilities. By grouping in this way, organisational structures can then be defined to address the capability needs of the enterprise. The approach also allows for related capabilities to be identified thus allowing for organisational dependencies to be expressed and managed appropriately.

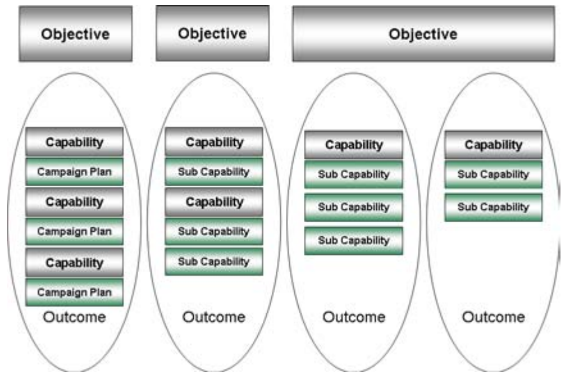

Figure 2: Affinity Diagrams can identify natural relationships between capabilities

Quality Function Deployment (QFD) Matrices

Used as a methodology for translating the customer's desires into engineering requirements, the QFD matrix can equally be used at the higher level when assessing the contribution of systems to capabilities. The approach enables better understanding of the cross-capability contributions of systems and facilitates better understanding of the potential cross-capability and cross-system impacts of changes.

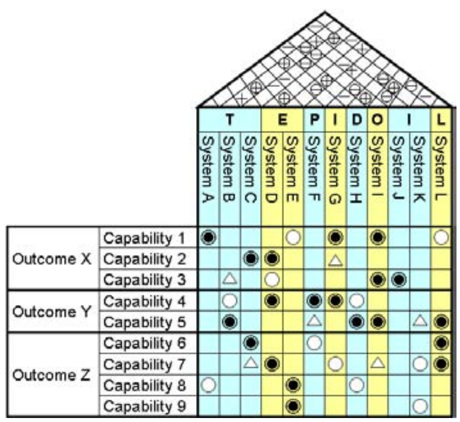

Figure 3: A QFD Matrix articulates the relationship between systems and capabilities

The approach can also be used to improve understanding of risk and priorities by weighting each system contribution by its *technical risk* and each capability by its *importance*.

Ishikawa Fishbone

Commonly used for quality defect prevention, the approach can be used to identify the cause and effect relationship between capability elements and the overarching outcome to be achieved. There are two uses that could be considered for Capability Management, the first is based on the capability elements (or lines of development) that when integrated, realise the capability (see Figure 4). The process can be used to identify the ripple effect of a system failure within a line of development (e.g. delay to an equipment system programme) on the overarching capability and when overlaid with the probability and risk impact, can be a useful risk mitigation tool for successful management of the capability.

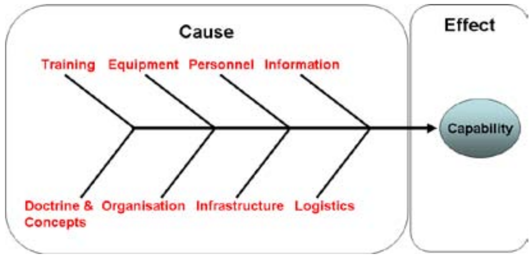

Figure 4 : Failure within one or more capability elements can lead to failure of overarching capability

The second example is that of the *influences* of capability, drawing on examples of use of the fishbone within the service industry. The categories show the impact of factors such as the environment, legal policy and technology on achieving the desired outcome. By understanding how a change in economic trends can impact on the capability (perhaps by a forced cost reduction exercise), a decision can be made as to the appropriate method and process to be applied to mitigate the impact. Figure 5 shows an example where the risk of achieving a capability is articulated in terms of its PESTLE influences.

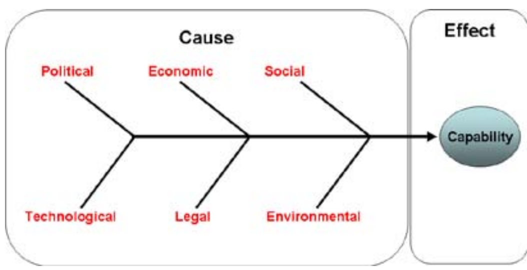

Figure 5 : Changes to external influences such as introduction of new environmental policies can have a profound impact on the capability

The "cause" categories within the method can be derived by applying the affinity-grouping process described above.

Visualisations

Compelling visualisations provide a mechanism for translating complex sets of information into a form which the brain can analyse and interpret more easily. This enables conversations between people about the relative merits of different options and can help to bring out some of the issues hidden within the data. A number of the specific visualisations used in TRAiDE™ have been developed using the MooD software[4].

Bullseye

The bullseye visualisation is used to show a cause and effect relationship between different components of the capability. Figure 6 shows an example of the bullseye which has been used to show a simple hierarchical breakdown of capabilities within an organisation. A further application could be to use the bullseye to show more indirect relationships between components and how they impact on the overarching capability goals.

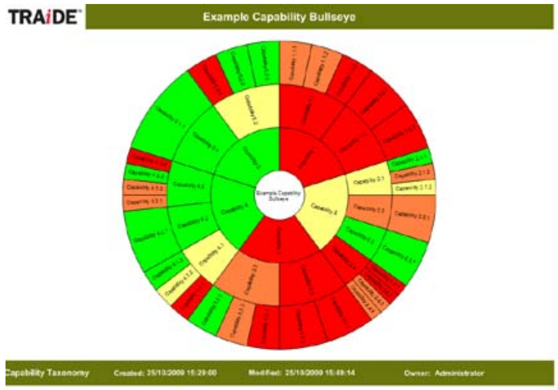

Figure 6 : Bullseye visualisations show the cause and effect relationships between architectural components[4]

The colourings of the segments could be attributed to reflect a number of different perspectives such as performance, cost, risk, environmental impact etc. They show a snapshot in time but may be repeated to demonstrate the evolution of a capability through time, or the merits of particular options.

Campaign Plan

Campaign plans can be used to show the interrelationships between contributors to the capability over time. By understanding the dependencies over time between the elements that comprise the capability, the impact of changes to the baseline can be understood and those impacts mitigated. Figure 7 shows an example campaign plan that shows individual elements of capability (DLODs) that contribute to the capability required and their relationships through time.

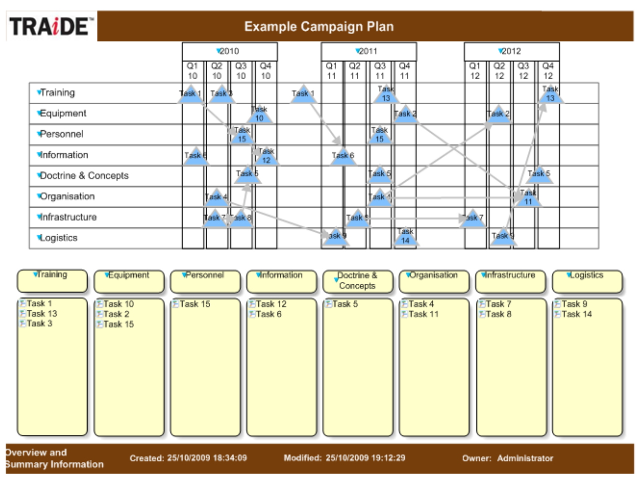

Figure 7: Campaign Plans can be used to identify dependencies between contributors to the capability through time[4]

The above view could be re-drawn with components of the capability hierarchy as the rows. This provides a capability perspective on the same set of information, and by using the two (or more) views concurrently the interdependencies between the components of the capability (the hierarchy,

[4] Bullseye, Campaign Plan and Swimlane visualisations were produced in MooD, a registered trademark of The Salamander Organization (TSO)

more commonly referred to as the Capability Taxonomy), the elements that develop them (DLODs) and the capability outcomes can be achieved.

For capability campaign plans to have the greatest utility and impact they must be used in conjunction with other visualisations such as the bullseye, using the information manager to provide a coherent view onto the data sets that pertain to a particular decision.

Swimlanes

As with Campaign Plans, swimlanes can show enterprise dependencies but are used to show the dependencies within a process context rather than through time. They are widely used within business modelling and are useful in a capability context as they can show interrelationships across the organisations and identify the key stakeholders for different phases of the Capability Management processes. Figure 8 shows an example of a swimlane which has been applied across the three boundaries of Capability Management, Planning, Delivery and Generation.

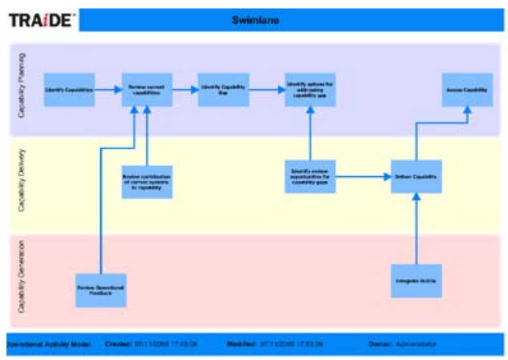

Figure 8: Swimlanes can identify the interrelationships between organisations across the Capability Management processes[4]

Enablers Selection Process

When selecting enablers to support decision making within a capability context it is imperative that the philosophy of “just enough engineering” is applied. The process that is recommended for this is shown in Figure 9 which focuses on the desired “outcome” and the decisions that are required to achieve this. By concentrating on the decisions involved, conclusions can be drawn on the information needs and decision outputs. Once the information analysis has been performed, an assessment can be made as to appropriate visualisations, methods and tools to be provided to support the decision making processes. This assessment should be weighted against the following criteria:

- **Availability of appropriate data –** ensuring that the correct data is used for the decision, documenting assumptions where it is not available.
- **Level of Detail –** ensuring that the appropriate aggregation/disaggregation of data is applied to support the decision.
- **Timescales –** ensuring that decisions can be made within the required timescales.
- **Priority Areas –** ensuring that focus is applied to areas which pose the greatest risk to achieving the outcome, or which can deliver most value for least effort (the Pareto Principle).
- **Availability** of appropriately skilled/qualified resources to engage in decision making.

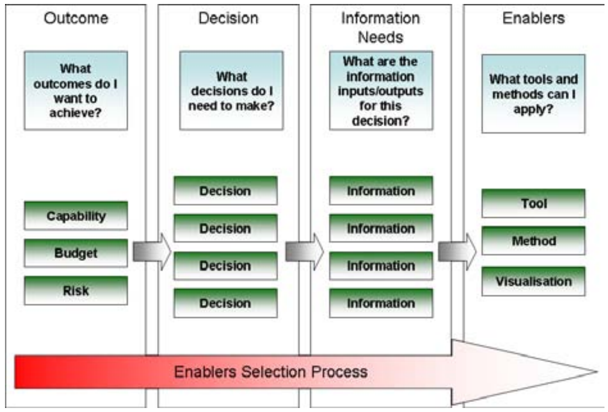

Figure 9 : By focusing on outcomes, organisations can structure their business processes and practices to facilitate decision making at all levels of the hierarchy

Applying the "just enough" philosophy allows for effective execution of decision making processes and ensures that the correct proportion of focus is allocated to those areas which pose the greatest risk to achieving the required outcomes.

All of the aforementioned methods and tools are useful in their own right but greater benefit can be achieved by bringing them together within a central framework. TRAiDE™ provides such a framework whereby tools and visualisations can be linked via the central Information Manager to provide cross cutting insights on the data.

From Capability to Systems

Traditionally, the role of defining, acquiring and sustaining capability has been that of the customer, where capability requirements are decomposed into systems and service requirements that can be delivered by the supplier base. Industry has then been responsible for delivering against these requirements and through rigorous verification and validation procedures handing over the systems and services to be integrated and put into operational use by the customer. This "over the wall" process has its merits, in particular the roles and responsibilities of the respective parties are generally clear but it relies heavily on system interfaces and requirements being well defined which restricts the capacity for innovation, flexibility and agility within the programme.

Fundamental to the whole process, Systems Engineering provides the means by which systems delivery programmes can be managed in a more capability focussed manner and requires the providers of systems and services to be much more aware of the contribution that they make to the desired outcomes.

The following section examines the existing Systems Engineering processes and their applicability to the capability context. The subsequent section will discuss some of the key competencies that are required to operate within this environment.

Systems Engineering Processes

The processes for developing systems with a capability outcome focus are essentially similar to those for output-based systems. Both will require translation of customer need into a system definition which can then be decomposed to an appropriate level of detail, such that a solution can be delivered through a set of robust project processes. However, for the outcome-focused system the context within which the customer needs are considered is likely to be much broader than that for the traditional system.

The reasons for developing new systems will originate from the high level capability need and within the MoD TLCM framework will be driven by the results of a set of Capability Audit activities. These activities analyse the “As Is” state of capability within the current business plan (assessing forward needs as well as current) against the higher level capability needs of the organisation within a set of defined scenarios. The results will identify any capability shortfalls in the plan which may be due to one of the following reasons:

- Changes to Capability Need – *e.g. change in policy*
- Retiring/Performance Drop of Existing Systems – *e.g. skillset deterioration in People Line of Development*
- PESTLE Influence – *e.g. changes to Environmental legislation*

All of the above will give rise to changes to one or more systems within the contributing SOS, the change being either the introduction of a new system or change to an existing system to meet the changing need.

The “V” Systems Engineering process model has successfully been applied in many different industries and maps well with the ISO/IEC 15288:2008 “Systems Life Cycle Processes” and is a useful framework to be applied when considering capability management (see Figure 10).

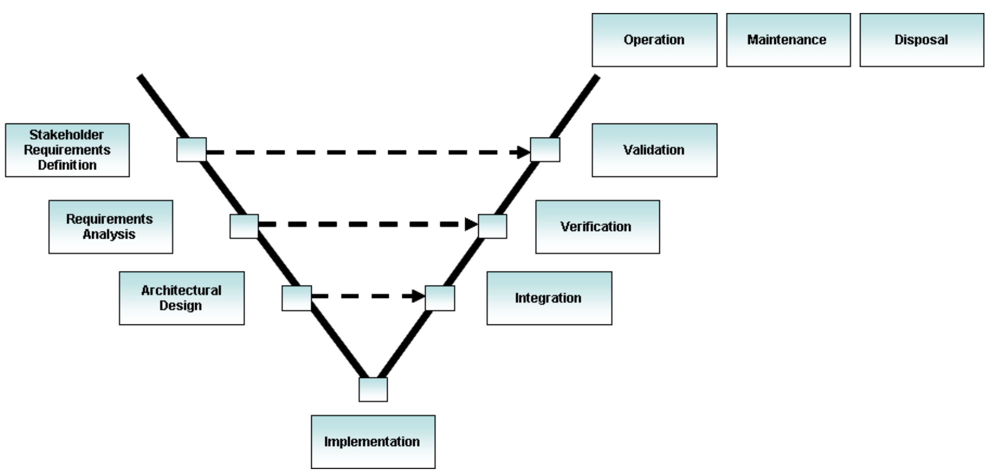

Figure 10 : The Systems Engineering Processes

For many phases of the process, the standard definitions and methods will be sufficient, although it is still important that the principles of good decision making are applied throughout. However, for the early and latter parts of the “V”, more consideration should be made in terms of the capabilities to which the system contributes.

At this stage, it is important to note that when referring to systems we are not limiting the definition solely to the Equipment Line of Development and the term has been used generically to encompass all DLODs and their contributing systems. The following sections will discuss the changes that are required to the traditional application of the "V" diagram in order to develop systems with an outcome focus.

Stakeholder Requirements Definition

For a traditional system, the stakeholder requirements process begins with the identification of stakeholders of the system (users, acquirers, operators etc) from whom the needs, expectations and requirements are elicited to describe the intended uses of the system in terms of user interaction within defined scenarios. Adopting a capability approach, the process must first start with a mapping of the system to the overarching capabilities to which it contributes (see Figure 11). This then allows not only the stakeholders of the system to be identified, but also the interdependencies between related systems (both extant and future) and their stakeholders who should be engaged with at an appropriate stage to ensure alignment of assumptions, dependencies and plans. It should be noted that in many cases, individual systems will contribute to more than one capability with potential for conflicting requirements, hence good stakeholder management throughout the system lifecycle is important.

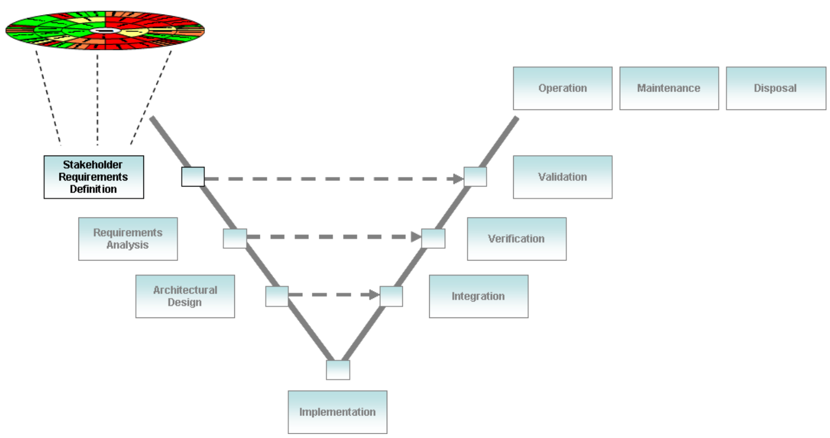

Figure 11 : Mapping the system to the overarching capabilities identifies additional interdependencies

This approach ensures coherence across the capability space and can provide opportunities for further efficiencies by identifying common solutions across related capabilities.

Requirements Analysis

In the traditional definition of the process, the Requirements Analysis process should consider the technical requirements of the system based on the systems interfaces identified within the stakeholder requirements definition process. Within this new, capability-focussed context, the requirements will be broader than the traditional technical requirements, based on the higher level capability needs of the organisation. In this case, the QFD matrix can be used to describe the relationship between the systems and the capabilities they contribute to both inter and intra line of development (see Figure 12) as identified in the previous process. This helps to identify the impact of changes to one or more systems over the whole capability set and in turn allow for the critical components that contribute to each capability to be recognised.

By utilising a similar scoring system as used in traditional applications of QFD to assess Key User Requirements and in turn the key Technical Requirements, those systems which are key to the realisation can be identified. This allows for the impact of changes to one or more systems over the whole capability set to be understood and in turn ensure that the key systems are identified and their associated risk to the overarching delivery of capability quantified.

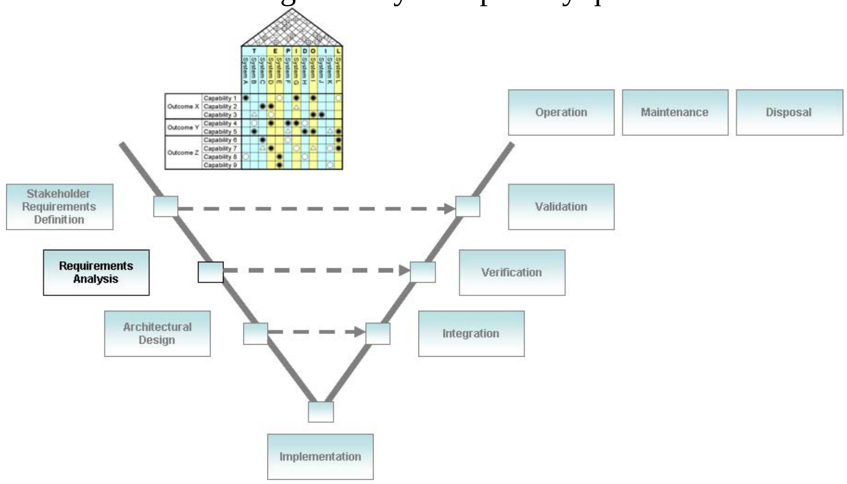

Figure 12 : Using a QFD matrix can identify the interfaces between the system and other contributors to the capability

The process can then be decomposed further to articulate the technical requirements of each system based on their contribution to the overarching capabilities and interfacing systems. This allows a more capability-focussed approach to risk management to be undertaken to ensure that the implementation risks of the system are understood in terms of the capability impact that they pose.

Verification

In the strictest sense, the Verification process ensures that the system meets its technical requirements and certifies that "you built the product right". From a capability perspective, the verification processes should confirm that the system can be integrated successfully within the System of Systems (SOS) both inter and intra line of development (see Figure 13).

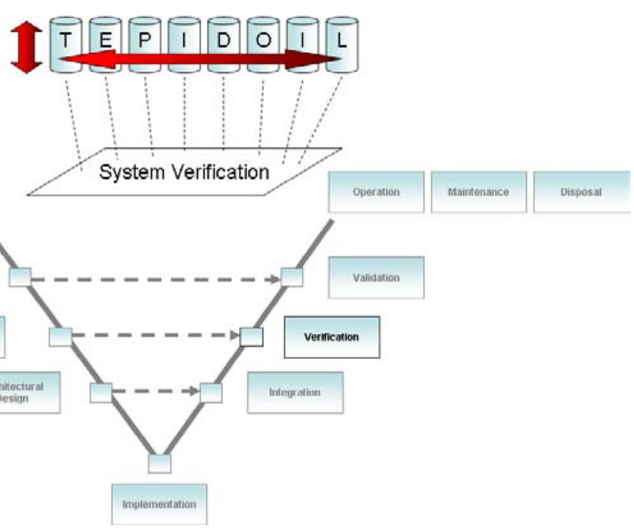

Figure 13 : Verification of the interfaces ensures that system interdependencies are met

From an acceptance viewpoint, this poses several challenges as programmatic changes to an external interface, for example a training system, can have a profound effect on the way in which the verification processes are conducted.

Validation

As the Verification process determines if “you built the product right”, the Validation process ensures that “you built the right product”, in other words the system meets the user needs. Capability Validation requires assessment of the contributing fully integrated SOS through a set of exercises at the capability level to demonstrate that all the building blocks of the capability can be successfully brought together (see Figure 14) within the set of required scenarios.

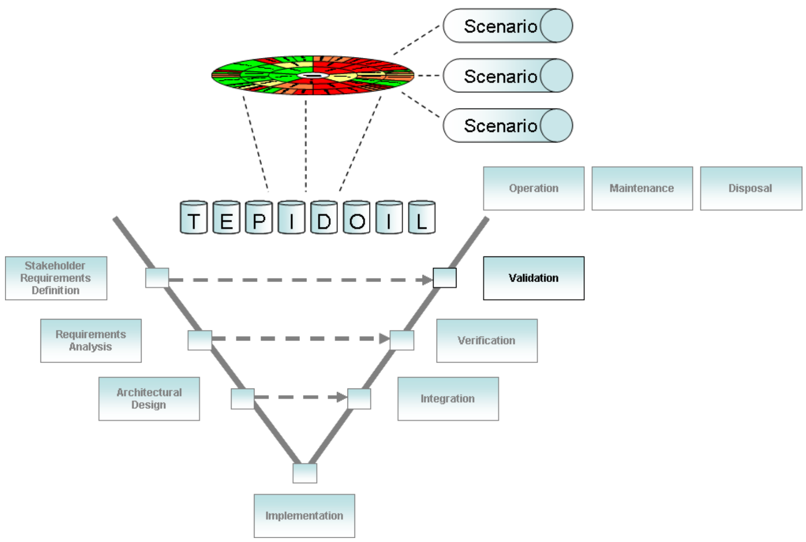

Figure 14 : Validating that the systems combine to produce the specified effect within the desired scenarios ensures that the capability can be realised

Practically assessing the system against these scenarios is implausible as it may not be possible to instantiate some scenarios in order to test the performance of the capability (for example the capability to protect a nation against a nuclear attack). For situations such as these it is important that techniques such as Operational Analysis, Simulation and Modelling and Experimentation are employed to de-risk the realisation of the capability where possible.

Maintenance, Sustainment and Disposal

In the later stages of the Systems Engineering Lifecycle Processes, focus will be on the maintenance and sustainment of the system against a background of changing external factors. The drivers for change can originate from all directions (see Figure 15):

- **Top Down -** through changes to the emerging threat, policies, scenarios or priorities
- **Bottom Up -** through changes to the system (e.g. performance drop off, integration of new technologies
- **Left Shift -** through introduction of new related systems
- **Right Shift -** through the retirement of related systems and services

All of these drivers could identify the need for a Capability Change programme which in turn will instigate a new (set of) “V” curves to address the changes required.

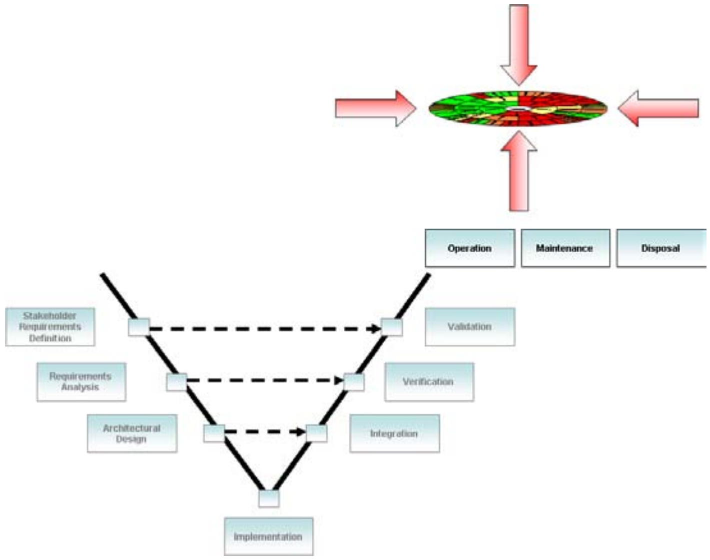

Figure 15 : Changes to the Capability throughout the In-service phases can instigate a number of Change Programmes and new “Vs”

As system may be disposed of for two reasons:

- The system is no longer required due to change in capability need/replacement systems
- The system is retired for practical reasons (e.g. additional cost of supporting legacy systems)

For the latter, it is important that the impact of the change on its interfacing systems and capabilities is fully understood to ensure that the replacement system can be developed in the appropriate timescale and integrated effectively.

In the case when a capability is no longer required (perhaps due to change in policies or priorities) it is broken up into its constituent SOS and their contributing systems. These systems can then be assessed from a pan-capability perspective to identify candidate systems for retirement. In some cases, the disposal of a capability will release extant systems and their groupings which can be used to deliver emerging or changing capabilities. In addition, the released systems could simply provide the means for a better and more efficient configuration for the realisation of extant capabilities, thus releasing alternative configurations for retirement. In both cases, the systems are “repackaged” into new SOSs to be delivered through a new change programme, thus initiating a new “V” curve of activities.

Competencies

Whilst it is recognised that there will not be a need for all Systems Engineers to operate at the capability level (indeed if this were the case there would be a severe shortage of engineers to deliver the contributing systems!), there is a growing need for a small percentage of Systems Engineers to operate at the capability level in order to articulate, develop and deliver outcome based SOSs that meet the higher level capability needs. To operate in this space it is imperative that Systems Engineers have good communication skills as there will be an increasing need to engage with stakeholders to understand the desired outcomes of the system. Early work within BAE Systems has shown that adopting a consultative approach to stakeholder engagement and working with them in the problem space is successful in identifying multiple perspectives and needs within the scope of the problem.

The existing Systems Engineering competencies (as defined in INCOSE UKAB Systems Engineering Competencies Framework v2) will still be applicable when operating in the capability domain, however the relevance and extent to which each are useful may well change given the change of emphasis required when operating at the higher levels. The following competencies have been identified as key when operating in a capability-based environment:

- Enterprise Integration – *for considering the capability outcomes*
- Holistic Lifecycle View – *for considering the system in a through-life context*
- Systems Thinking – *for considering the system within its wider context*
- Concept Generation – *for defining the future needs of the system*
- Interface Management – *for defining the related systems and services needed to contribute to the higher capability*
- Architectural Design – *for both the system and its contribution to the wider enterprise*
- Determine and Manage Stakeholder Requirements – *for the management of direct and indirect stakeholders of the system*
- Transition to Operation – *for considering as to how the system will be applied in the operational context*
- Super-system capability issues – *for consideration of the interoperability of systems for realising the desired capability*

Summary and Future Work

This paper has discussed some of the challenges involved in managing complex enterprises in a capability context. Early work in this area has identified the need for collaborative working between all stakeholders and has shown the importance of Systems Engineering in addressing the challenges involved both in the capability decision making processes and the required changes to Systems Engineering processes.

Capability Management requires a rigorous and robust set of methods and tools and this paper has discussed a number of these which have been successfully applied within this context. The application of these enablers should be proportionate to the complexity of the decision to be made and its criticality to achieving the objectives of the enterprise.

The paper has also examined the applicability of the current Systems Engineering Processes and Competencies to the delivery of systems within a capability context and has identified those areas which are fundamental to the transition from systems to capability.

Current work in this domain is focused on the translation of capability-based approaches and thinking to the delivery of systems and services within BAE Systems.

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Biography

Jennifer Mollett is a Systems Engineer in BAE Systems Integrated System Technologies. Since joining the company in 2004 she has gained experience in a number of roles across the naval sector. Currently Jennifer is seconded into BAE Systems Strategic Capability Solutions working as a Capability Consultant in the Land sector engaging with the UK MOD and BAE Systems in several initiatives in the domain of Through Life Capability Management.

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