



Stantec Programme Management

Delivering major infrastructure programmes
across six continents



We're active members of the communities we serve. That's why at Stantec, we always design with community in mind.



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Introduction

The Stantec community unites approximately 22,000 employees working in over 400 locations across six continents. We collaborate across disciplines and industries to bring energy, water and infrastructure projects to life. Our work as programme managers, project managers, architects, engineers, and consultants from initial project concept and planning through design, construction, and commissioning begins at the intersection of community, creativity, and client relationships.

In the UK, we provide local services with over 1,000 staff located in seven regional offices. The company has built its reputation on a winning combination of local experience and global expertise. Since 2000 Stantec has managed the delivery of over £10billion of programmes and projects across the UK alone.



Stantec Programme management approach



What can effective Programme Management deliver

FINANCE

- Enhance Return on Investment
- Protect revenue and required expenditure

MANAGEMENT CONTROL

- Boundary management
- Execution of change more effectively
- Improving project and programme management delivery capability
- Management of impact events
- Management of interventions
- Full visibility of performance enabling management by exception

GOVERNANCE

- Assurance, coaching and mentoring
- Implement consistent standards and processes
- Increasing transparency
- Independent oversight and scrutiny
- Protecting reputation
- Providing decision support to ensure the right programmes and projects move forward
- Single source of information

RISK

- Management/oversight of cross-project risk
- Management of programme-level issues and risks

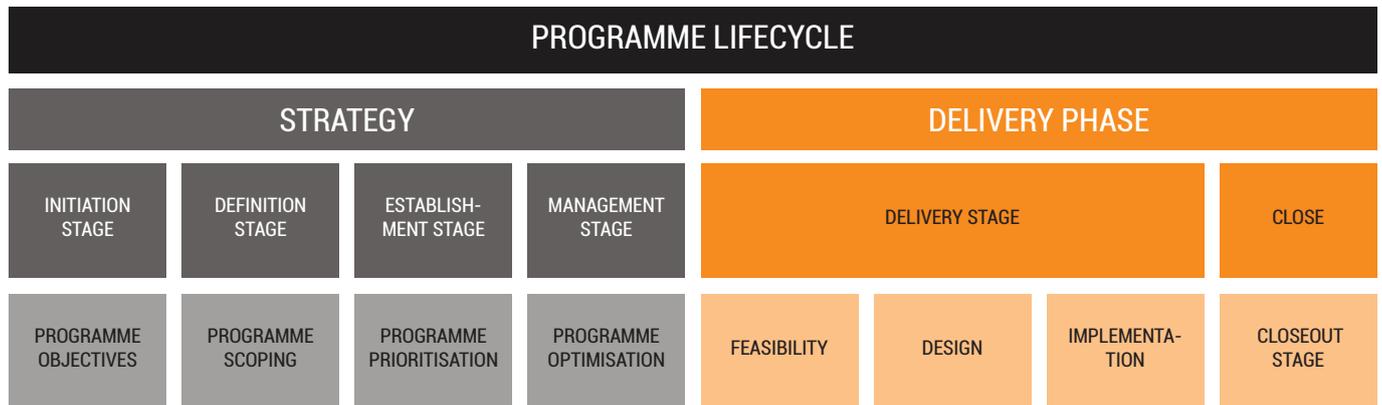
STAKEHOLDER

- Consistent stakeholder management
- Improving accountability around the business between operations, stakeholders and delivery teams

How Stantec maximises its Programme Management capability

THE PROGRAMME MANAGEMENT PURPOSE & VISION	<ul style="list-style-type: none">• Both for intelligent customer / intelligent delivery capability it is essential to maximise the value from a capital programme. Pivotal to this is leading-edge programme management that has a high level of governance, but is agile enough to react to changing market conditions.
THE BEST PRACTICE MODEL	<ul style="list-style-type: none">• The processes for delivering a capital programme should always be aligned to overall industry best practice models. A programme management capability must clearly identify and articulate the benefits of programme management with proven metrics. This allows effective benchmarking and sharing of best practice with other sectors.
THE PROGRAMME LIFECYCLE	<ul style="list-style-type: none">• Most programme lifecycles are currently in use for programme delivery. To allow companies to exploit best practice techniques, an alignment is needed to external standard programme models which cover upstream strategic processes.
THE ORGANISATIONAL STRUCTURE	<ul style="list-style-type: none">• This identifies the overall organisational structure for the delivery of the programme and the interfaces with other parts of the business.
THE PROGRAMME MANAGEMENT FUNCTION	<ul style="list-style-type: none">• In general, organisational structures for programme management have a discipline bias. Whilst this allows team skillsets to improve, there is a need to align the structures to the delivery cycle to clearly cover the specific service requirements.
PROGRAMME MANAGEMENT SERVICES RESPONSIBILITIES	<ul style="list-style-type: none">• There are specific services that programme management must deliver to provide the overall support and assurance needed. There also has to be a delegation structure with clear lines of responsibility to allow the programme to be a success.
THE FUNCTION OF PROGRAMME MANAGEMENT IN STRATEGY	<ul style="list-style-type: none">• In the strategic phase of the programme, programme management develops methods for managing the overall outcomes and benefits. It also supports the effective prioritisation and optimisation of the delivery programme work.
THE FUNCTION OF THE PROGRAMME MANAGEMENT IN DELIVERY	<ul style="list-style-type: none">• In the delivery phase, programme management provides assurance and support to the senior management and delivery organisations ensuring the day-to-day delivery requirements are met.
CENTRE OF EXCELLENCE SUPPORT	<ul style="list-style-type: none">• As the strategic and delivery elements become fully operational, there needs to be a leading-edge thought element which pushes for continuous improvement, knowledge capture, and can introduce both business and transformational change.

Programme Management interventions



There are four effective interventions to influence and shape your overall programme and individual projects.

These are:

Programme Scoping

During the Identification and Definition stages strategic objectives are set and the enablers required to achieve them are evaluated. In this part of the programme life cycle, we look to limit/restrict enabler scope while still maintaining the sponsor's overall objectives.

We analyse the outcomes needed to support the enabler and assess the different resolutions available to achieve the outcomes to provide the most fit for purpose single or multiple resolutions. By looking at the programme objectives with the specific enablers, outcomes and resolutions instead of basing the analysis around a project, major efficiencies can be achieved. These processes require strategic technical knowledge and involvement working with the programme management Office for it to succeed.

Programme Prioritisation

During the Establishment Stage we can prioritise work within your programme by using processes such as multi-criteria assessments. A multi-criteria assessment prioritises the workload by scoring the strategic benefits and balances them with the strategic risks of delivering the solutions. This allows an element of realism to be built into the programme and is one of the early steps in managing expectations. Financial prioritisation uses other techniques.



Programme Optimisation

In the Establishment Stage we can also optimise your programme by analysing the complexity of projects and applying a scoring process. These scores can be used in two ways. The first is to use a runway process, which allows work that has a repeatable design, comprises a single option or has a low level of complexity to be fast tracked.

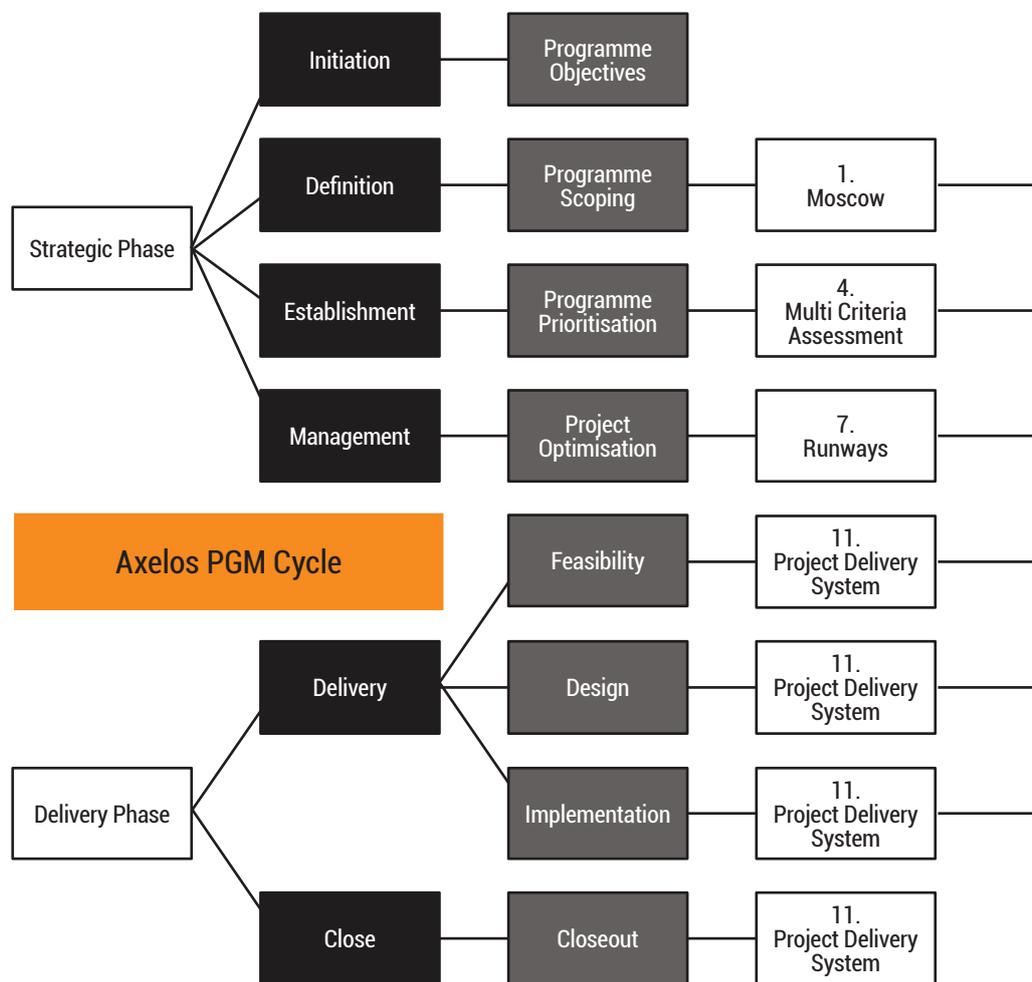
The second is to use the complexity score to alter the governance level needed at a control gateway. Both methods reduce overall cycle times and increase the free float available to the overall programme. This is followed by balancing to suit other issues such as supply and demand on labour, plant and equipment. We also explore options for clustering projects to suit either process type, geographical proximity or other patterns of commonality.

Programme Delivery

The programme tranche of projects are now in the delivery stage of the programme cycle and the primary influence of the programme management office is to minimise the risk to outturns in scope, cost and time. The key here is to apply what could be classed as vigilant trust on the supply chain, and to have the ability, skills and processes to identify trends and patterns quickly, followed with the contractual tools to influence the situation.

Best Practice support processes

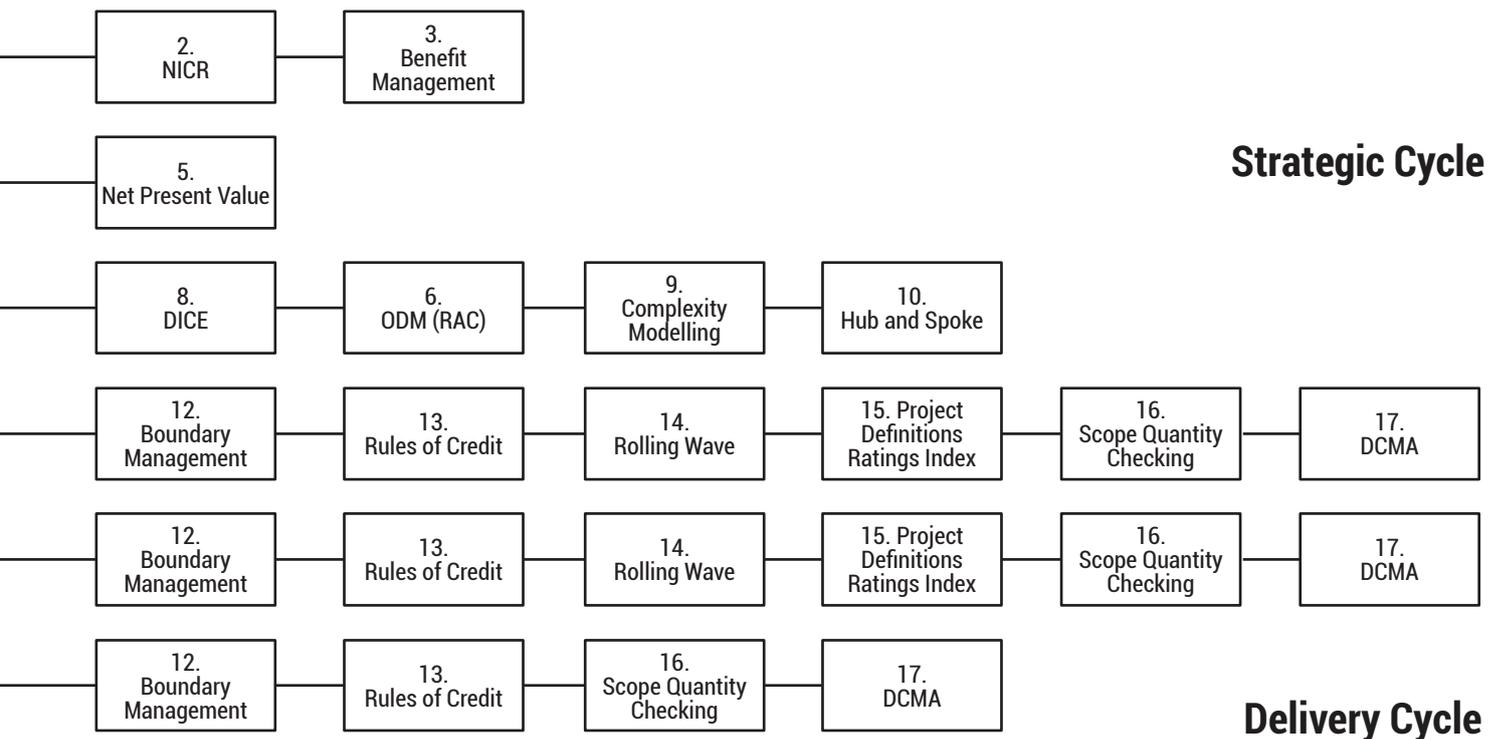
The use of tactical interventions for





Stantec has developed a large number of tactical interventions to allow marginal gains to be achieved over the full programme lifecycle. They are the most effective way of improving the performance of in-flight programmes with minimal disruptions.

or marginal gains





MOSCOW

MoSCoW is used to minimise scope requirements whilst still providing the outcomes of the programme. This usually results in lower expenditure and a maximising return on investment (ROI). It also has other benefits with regards to delivery timescales. By applying MoSCoW, in most cases, the reduction in scope requirements also results in reduction in deployment by altering the focus can be on the most important items.

M	S	C	W
Must have	Should have	Could have	Won't have
Scope that is usually a regulatory need and critical to the programme achieving its objectives	Scope that is ranked in priority and needs a strategic, technical decision whether its omission would impact the programme's objective	Scope that is desirable for improved performance but if excluded would not impact the programme's objective	Scope agreed by stakeholders as being excluded from the scope of the programme

BENEFITS MANAGEMENT

The realisation and management of benefits is one of the key responsibilities of programme management.

Benefit realisation management is used in the Strategic and Delivery phases of the overall programme lifecycle. The method is tailored from programme down to individual project level and allows for regular reviews to ensure benefits are realised. Benefits realisation is continuously tracked through the lifecycle of the project or programme. If the benefits deteriorate, the specific project or programme's overall business case becomes threatened.

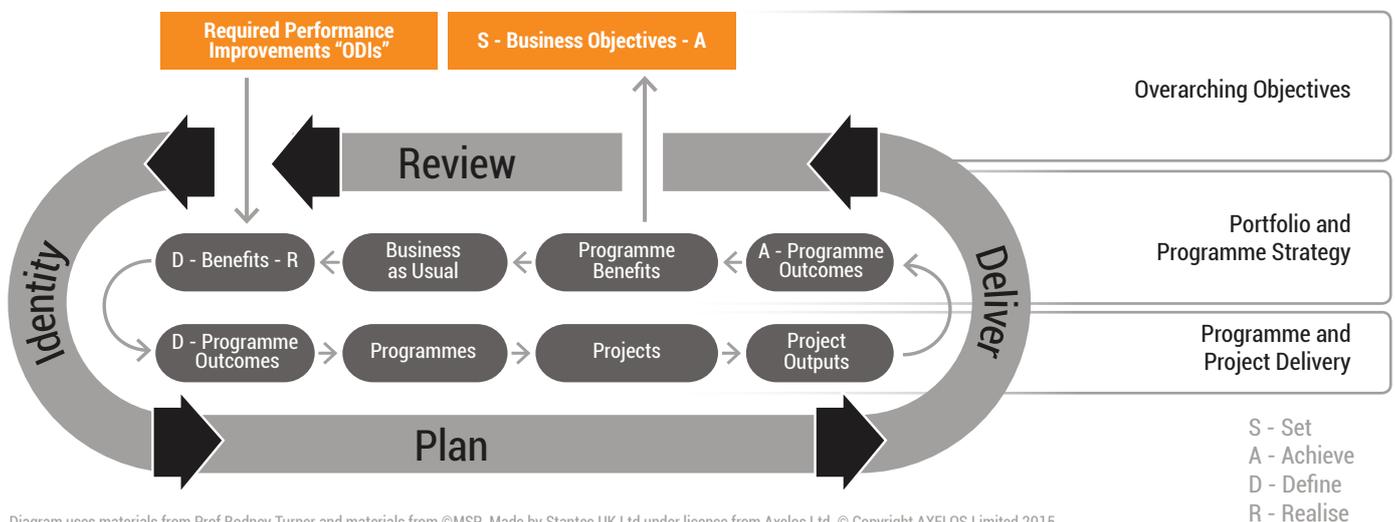


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MULTI CRITERIA ASSESSMENT (MCA)

MCA provides an objective approach to the prioritisation of the programme and can help programme management make more informed consistent and transparent decisions. MCA can be adapted to suit any organisation; programme management should act as a facilitator to ensure that all stakeholders agree on the method used. The MCA process prioritises projects in a sequence order that protects the specific benefits which are needed to deliver the future state and support the overall strategic objectives. It also quickly identifies projects that are not fulfilling that criteria.

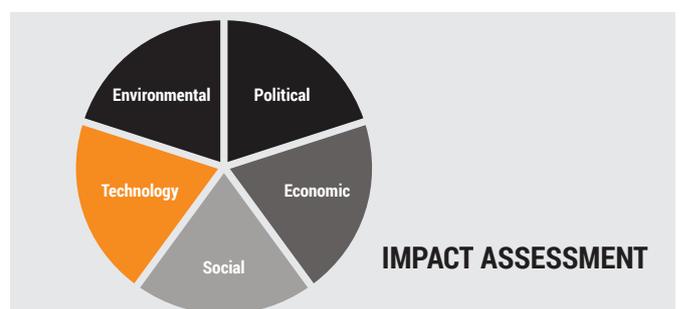
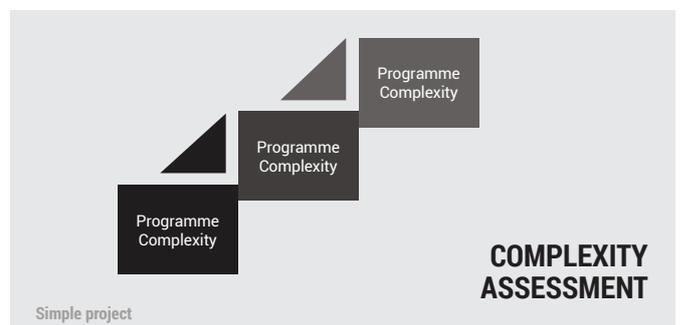


COMPLEXITY MODELLING

The purpose of using a complexity modelling process is to enable the asset owner to assign the right level of governance and the appropriate lifecycle (potentially runways) required for a project based on its complexity. This provides a structured but flexible approach that is scalable to all the projects within the programme delivery tranche.

Each project in the programme will be scored against a range of criteria to give an overall complexity rating. The criteria may include several elements which can be tailored to suit the asset owners organisation, but will usually include factors such as: budget, timescale, number of suppliers, process, and business functions impacted.

Once a project has been scored it can then be allocated its governance and lifecycle requirements in line with a scoring matrix.



Specification based programmes

Case study 1

Southern Water 4D AMP4 and AMP5

Project description

Stantec was part of a capital programme delivery alliance that spanned two (five year) regulatory periods (AMP4 and AMP5) that was responsible for all aspects of programme management, consenting, engineering design and construction.

Our role

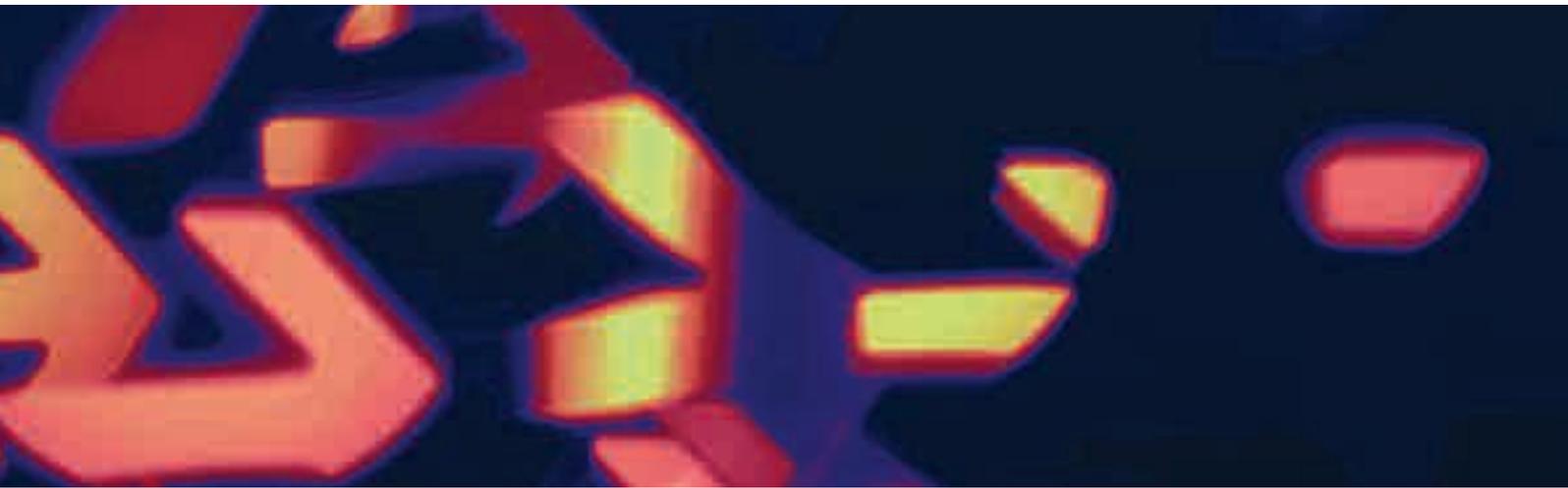
Stantec developed and implemented the programme management approach for the delivery of Southern Water's AMP4 and AMP5 (2005-2015) Quality programmes, ensuring 100% of the 250+ regulatory outputs were achieved. Enhanced efficiency in AMP5 was achieved through improvements made possible by learning from delivery in AMP4.

We provided:

- **Project planning and control:** we prepared a fully resourced programme containing 44,000 activities within 12 weeks of contract award. The programme was built using a combination of data and algorithms, established from previous project experience. Project reviews and benchmarking performance of milestones against the baseline, identified early corrective measures to be made. Programme level KPIs were reported on a monthly basis to track overall performance.

We deployed an integrated programme management system known as mPRISM to be used by both 4D and Southern Water.

- **Risk management:** we introduced a project and programme based approach to risk which gave early visibility of key risks, and the measures being taken to mitigate them and maximise opportunities. Project risk was categorised within mPRISM. This enabled common risks to be identified, monitored and mitigated at a programme level, driving efficiency, minimising impacts and maximising opportunities.
- **Change control:** we managed change within mPRISM which provided a consistent approach and enabled early visibility of the scope and value of changes. This provided a good understanding of the impact of proposed changes at a programme level.
- **Reporting:** we provided accurate reports from mPRISM which used one source of date (from Primavera P6), that allowed the rapid production of high level reports comprising reporting by exception that used traffic lights and other visual indicators to demonstrate performance against baselines and targets.
- **Outputs/benefits management:** we focused on safety and Southern Water achieved an industry leading AFR of 0.1 (the industry standard is 0.4) and they met every regulatory output and realised savings.



Case study 2

Babcock and MOD HMS Astute Readiness Programme Management

Project description

HMNB Clyde (Faslane) was identified as the home and berth for the new Astute Class submarine (HMS Astute) when launched. The first in its class, the vessel was being constructed at BAE Systems Barrow in Furness facilities but serious concerns were raised about the readiness of HMNB Clyde to receive the vessel including the nuclear safety case completion.

Our role

Stantec was commissioned by Babcock Marine to establish a small programme management Office (PMO) at Faslane to provide a vehicle through which readiness could be achieved. We created an integrated team with Babcock and MOD staff, facilitating effective programme management, risk management and project delivery, leading the way to improved project delivery. This enabled HMNB Clyde to demonstrate readiness to the Defence Industry Nuclear Regulator and the wider stakeholder community.

Our new method of working and approach to defining, managing and successfully delivering a wide variety of projects on the Naval Base involved:

- **Programmatic approach:** we defined the various projects and provided rigor and business discipline to ensure project delivery and regulatory compliance.
- **Risk management:** we clearly defined and developed an understanding of the risks both at project and programme level which enabled the PMO to intervene and mitigate potential issues in advance and support the final outcome of the programme.
- **Programme board:** we created a board to oversee the entire programme and provided detailed reporting systems to demonstrate issues and enable direct intervention to resolve delivery risks.
- **Outputs/benefits management:** we established and staffed an integrated team to deliver the programme management functions and supported the MOD and Navy to demonstrate naval base readiness to a multi stakeholder audience including the nuclear regulator.

Transformational programmes

Case study 3

AltaLink Programme Management Office

Project description

AltaLink is Canada's only independent, investor-owned electricity transmission company who develop and operate 11,800 km of transmission lines and 270 substations in Alberta. They serve 85 per of Alberta's population and provide the transmission link between the state's deregulated power generators and regulated distribution companies that provide electricity to homes, businesses and communities. In 2011, AltaLink began a four-year, CAD\$7 billion capital programme to expand its transmission network to support renewable energy growth and reinforce its existing transmission assets.

Our role

Stantec provided programme management expertise and resource augmentation to support AltaLink's capital programme. We developed and implemented standardised controls, reporting and programme management tools to increase AltaLink's oversight, control, and confidence helping them meet their expenditure goals.

These comprise:

- **Project planning and control:** we developed standardised cost control processes and templates and developed an EPC cost reporting procedure. We also established standard project schedule template with associated key milestones and developed EPC scheduling standards and integration protocols. This increased the accuracy of monthly cost forecasts and certainty in achieving key project milestones.
- **Risk management:** we developed a standardised risk management process and database aligned to AltaLink's corporate risk framework. This enabled risks to be managed consistently across all projects and led to a greater confidence in risk control and contingency estimation.
- **Change control:** we created a standardised change management process aligned to regulatory reporting requirements. This provided AltaLink with clear visibility of project changes and their impact on risk contingency.
- **Reporting:** we produced a standard reporting process incorporating AltaLink and EPC performance data and developed executive-level dashboard reports which improved control and enabled timely decision making.
- **Outputs/benefits management:** we created a staged delivery model and associated key deliverables, which included detailed process flowcharts and associated procedures and templates using mPDS™ (a Stantec configured tool). This provided a consistent delivery approach across all projects. We also developed stage gate process and associated requirements and created standardised templates to present key information to Stage Gate Panels for effective decision-making.



Case study 4

Manchester Airports Group (M.A.G) Capital Airports Group

Project description

Manchester Airport Group needed to implement a Programme Office to support their ambitious expansion plans comprising the purchase of new airports, increased capacity at others and the £650m Airport City development at Manchester Airport. This required an in-depth review of their capabilities to improve project, programme and portfolio processes, practices and systems to ensure successful delivery. M.A.G. required an approach that would allow them to prioritise and track projects against business drivers, regulatory requirements and customer satisfaction.

Our role

Stantec was appointed to implement a new programme management system for M.A.G. which provides them with a level of project visibility they have never had before. These, combined with their new Project Delivery System (PDS), enable them to plan and report on business metrics in a language that everyone understands. The project templates help the project controls section to plan and predict problems much earlier than before and so improve the governance available to management.

Our services comprised:

- **Programme Management approach:** we reviewed M.A.G's entire programme management approach and developed processes, practices and systems which would allow flexibility for future expansion. Following the review, we embedded the new processes and systems for their existing Capital Delivery portfolio.
- **Project Delivery System (PDS):** we interviewed key M.A.G personnel across the business, studied their existing business processes, internal interfaces, their reporting and control systems, related business systems, their infrastructure. We then developed an improved PDS combining industry best practice with their existing approaches, to ensure changes were only made where there was genuine business benefit.
- **Knowledge management strategy:** we developed a knowledge management strategy that enabled M.A.G's dispersed team to focus on maximising customer satisfaction.
- **Risk and change management approach:** we developed and embedded a standard risk and change management approach. This involved working closely with M.A.G's Health & Safety team to embed H&S in to every aspect of their PDS and developing an eight step Knowledge Management approach based on best practice.

Societal based programmes

Case study 5

Vero Insurance New Zealand Ltd. Christchurch Earthquake Reinstatement Programme

Project description

On 4 September 2010 a 7.1 magnitude, shallow focal point earthquake hit the Canterbury region of New Zealand causing widespread damage. Estimates of the total damage were as high as \$40 billion NZD making it the biggest insurance event in the world since 1953.

Our role

Stantec was selected by Vero Insurance to manage and coordinate the repair and rebuilding effort of commercial and residential projects for over 2,000 of their policy holders. Our services included assessing and procuring consultant services, including fee structure, contract, assessment, recommendation and preparation, fee (cost control), consultant instruction and coordination.

Each individual project required full management from verification through to construction close out and documentation. By using a systematic approach we ensured the programme was delivered ahead of schedule and on budget.

This was achieved by:

- **Project planning and control:** we established a centralised database (called the CRMS) containing 2,000+ discrete projects. It enabled efficient programme and procurement management and for the public to access the status of their project.
- **Risk management:** we used a risk-based approach to schedule the rebuilding of properties in Christchurch using a multi-criteria decision tool based on a GIS application. This comprised scoring each property based on technical hazards and risk, and applying a social criteria to rank them in order.
- **Change control:** we established a formal change control process to enable the assessment of modifications and improvements to the CRMS before they were tested, developed and implemented into a live production system.
- **Reporting:** we setup a SharePoint and Aconex portal to enable the rapid transfer of project information for over 1,000 claimants.
- **Outputs/benefits management:** we created a dashboard incorporating both traditional programme performance criteria and also a balanced scorecard to monitor benefits.



Case study 6

Queensland Government Transport Network Reconstruction Programme (TNRP)

Project description

In 2010, 2011 and 2012 cyclones and flooding in Queensland, Australia, caused major damage to large sections of the state's road network. In response, the Department of Transport and Main Roads (DTMR) established the Transport Network Reconstruction Programme (TNRP) to coordinate numerous reconstruction projects over a large geographical area. The TNRP incorporated principles of both programme and project management.

At the peak of construction there were 15 individual contractors working on over 50 sites across the region with works mostly undertaken under live traffic conditions to avoid economic impacts on stakeholders, e.g. 24-hour mining, livestock and commodities and tourist traffic. Extensive coordination of traffic at each construction site and between sites was necessary to minimise driver delays.

Through rigorous and ongoing internal and external evaluation, the collaborative approach between DTMR and Stantec demonstrated transparency and accountability for the government and the public. It promoted partnership between the public and private sector and accelerated design and construction ensuring stakeholders and the public saw tangible action.

Our role

Stantec was appointed by DTMR to fast track the repair and rehabilitation of the road network in the Fitzroy Region - one of the most heavily impacted areas. Over 100 Stantec employees partnered with DTMR staff at Regional Programme Offices (RPMO) in Rockhampton and Emerald.

As a united team, the RPMO managed all aspects of the programme's delivery including construction, procurement, submissions, design, community engagement, surveying, environmental management and safety and traffic management.

The RPMO achieved a baseline delivery schedule with most major works completed six months ahead of the mandatory deadline. The programme was recognized with a Highly Commended award in the collaboration category from Consult Australia.

A photograph of a business meeting. Several people in light blue shirts are gathered around a glass table, looking at and pointing to various documents and charts. The charts include a pie chart and a bar chart with a line graph overlay. The scene is brightly lit, and the focus is on the hands and documents in the foreground.

Programme Management toolsets

Programme management systems are used in both strategy and to manage the delivery cycle. Programme managers determine which applications are required to deliver the programme.

Programme management systems, whether covering schedule, cost, risk or benefits, are usually complex software applications needing specialist skills held by the end-users. From a management perspective the data has to be transposed into a more simple information format.

This usually means collating the disparate information into a central source then extracting for different groups which can then be sorted into viewable reports. The key is to automate this to prevent the programme management function from becoming just an expensive reporting function instead of a key enabler that adds value.

Programme information, in most cases, is in the form of Gantt charts, cost tables and graphs but many of the base information toolsets are poor at allowing visualisation by senior management. This results in either a myriad of information which cannot be easily digested or the need for a large programme management capability to convert information into understandable formats.

Programme managers should consider automated interactive dashboards for KPIs, and schedules. These toolsets should exploit management by exception techniques to reduce the analysis time needed to make decisions.

There are benefit and outcome mapping tools available which allow the overall programmes of work to be judged on outcomes performance and not just deliverables.

Intelligent geospatial information is now common place and is seeing a move from the BIM (Building Information Model) to AIM (Asset Information Model). This information assists programme and project management considerably allowing 4D and 5D modelling for cost control and schedule review.



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Stantec has produced this leaflet in the aim of improving project & programme management, the values and ranges within it do not represent other companies and sectors

Stantec Core Business

P3M Services

Stantec

- ⊙ Asset Planning
- ⊙ Strategic Planning
- ⊙ Business Transformation
- ⊙ Commercial, Finance and Risk Consulting
- ⊙ Whole Life Costing (TOTEX)
- ⊙ Regulatory Consulting
- ⊙ Customer & Stakeholder
- ⊙ Portfolio Management
- ⊙ Programme Management
- ⊙ Operations
- ⊙ Programme Delivery
- ⊙ Project & Construction Management

Technical Services

Stantec

- ⊙ Operational Efficiency Advice
- ⊙ Numeric Modelling
- ⊙ Technical Advisory Services
- ⊙ Needs Analysis & Challenge
- ⊙ Engineering
- ⊙ Optioneering, Outline & Detailed Design
- ⊙ Environmental Management
- ⊙ Planning & Permitting
- ⊙ Data Collection
- ⊙ Operations
- ⊙ Asset Surveys
- ⊙ Outline & Detailed Design
- ⊙ Commissioning