

Case Study

Sydney Water's Technical Capability Program



Introduction

Technical Capability Frameworks

This case study describes a major project at Sydney Water to create a **Technical Capability Framework** for staff working in Production (previously Treatment). This Sydney Water Business Unit is tasked with Water, Wastewater and Recycled Water treatment services, Resource Recovery and Deep Ocean Outfalls. As part of their change journey towards a more customer-centric operating model, Sydney Water's Technical Capability Program is an example of an organisation-wide approach towards establishment of a **Capability Framework** that is fit-for-purpose for the roles and responsibilities in each specific part of the business. In this example Sydney Water have identified 10 technical capabilities where Production Hub staff need to demonstrate an appropriate level of proficiency. The Capability Framework provides support tools for staff to achieve proficiency through integration with Sydney Water's Contribution Development Planning (CDP) process, to ensure staff skills and knowledge stays current and keeps up with technology and industry trends.

Sydney Water

Sydney Water are Australia's largest water and wastewater service provider, a statutory State-owned Corporation, wholly owned by the NSW Government. The performance targets and service standards for Sydney Water are set out in the Operating Licence 2015–2020, which is governed by the Independent Pricing and Regulatory Tribunal (IPART).

Sydney Water provide safe drinking water to almost five million customers across Sydney, the Blue Mountains and the Illawarra. They also look after wastewater, recycled water and some stormwater services. Key service statistics for the 2016-17 year are shown in Table C1.1.

As of 2018 there were 2550 (FTE) staff employed at Sydney Water (See Table C1.2). The workforce is diverse in terms of age range and ethnicity and the gender balance across the business is at 33%. In Production, the focus of this case study, the Production Officer headcount is around 250 people. The gender balance in the Production Hub is around 20% females. Staff are from a broad range of ethnic backgrounds, although the age range is somewhat skewed towards older workers (e.g. 50+).



Table C1.1: Sydney water key statistics, 1 July 2016 to 30 June 2017

Approximate area of operations	12,700 square kilometres
Estimated population serviced by drinking water	5,037,000 people
Quantity of drinking water produced	551,406 million litres
Length of drinking water mains	21,951 kilometres
Estimated population receiving wastewater services	4,944,000 people
Quantity Wastewater collected	564,154 million litres
Number of wastewater treatment plants	16 plants
Length of wastewater mains	25,597 kilometres
Estimated population serviced by recycled water	2 87,000 people
Quantity of recycled water supplied	38,339 million litres
Number of water recycling plants	14 plants

Table C1.2: Sydney Water Workforce Profile 2018 - executive summary

Key Metric	Result	Key Issues
Employee Headcount	2550 people	10.2% of all NSW employees are public sector
Median Tenure	11.2 years	Long serving staff may restrict career progression for early career staff
Median Age	45.8 years	
Staffing rate, over 55	24%	Impeding retirement of large % of staff
Staffing rate, under 35	21%	
Staffing rate, Women	33.2%	Gender balance and diversity
Staffing rate, Women in leadership	35.4%	Aim to have an appropriate mix of male and female leaders to recruit the best.
Staffing rate, A&TSI	0.9%	Diversity & inclusion

Key Program Drivers

Sydney Water's Strategic Plan 2020 aims for the business to transition to a customer-centric operating model. This requires Sydney Water to undertake a process of translating its strategic goals into its day-to-day operations. Hence, Production must change the operating model to be more customer focused, more efficient, more technology focused, more adaptable and more scalable.

Key Driver 1: A customer-focused organisation

Historically the treatment part of the Sydney Water has operated based on geographic boundaries, with several individual teams each responsible for their geographic area. This resulted in duplication of resources in some cases. The focus was primarily on management of assets, with no clear priority for customer requirements.

More recently the team has aspired to become a "frontier treatment organisation." This involves a focus on aligning and prioritising team resources to meet customer needs. Further to this, Sydney Water's overall customer-centric operating model has created a driver for treatment products and services to be more directly linked to customer needs.

Key Driver 2: A highly efficient organisation

Sydney Water has a duty to IPART to reduce operating costs and in the past the focus has been on benchmarking against peers. This created a perception that Sydney Water's cost base was higher than that of other utilities. Restructure and realignment of the Treatment team into the new Production Hubs is aimed at creating clearer accountabilities and minimal duplication. The intent is for a highly utilised workforce in core operations and support functions, as well as a focus on continuous improvement.

Key Driver 3: A technology-focused organisation

Sydney Water has long been an active adopter of new technologies. However, the application has on occasion been fragmented and inconsistent. An emerging opportunity for Sydney Water is in the Resource Recovery space. Fully exploiting the potential of this new product has been hampered due to the fact that it has not been viewed as core business for operations.

The new operating model at Sydney Water aims to focus on applying the right technology for a given service or product, particularly with regards to Resource Recovery. Supporting this is the need for a clear roadmap for the adoption of new technologies.



Key Driver 4: Adaptable and scalable Production teams

The previous geographically-focused operating model typically had staff based at one treatment plant. There was limited staff exchanges or secondment to other sites, there was also inconsistency of competency levels between teams. The new Production Model has divided the 34 individual plants into 12 hubs. The idea of adaptable and scalable teams is that all staff understand the minimum levels of proficiency and the required skills and knowledge to safely and competently perform their roles across the individual plants in their Production Hub, irrespective of the site that they may be deployed.

The Program – Technical Capability Framework

Capability Framework Design Approach

The Production Hubs Learning & Development (L&D) Strategy forms part of a broader overall Production Improvement Program, linking back to the key organisational drivers described above. The L&D Strategy required a new system and support tools to link and facilitate consistent L&D outcomes across the Production Hub.

These include:

- A Capability Framework
- A Capability Proficiency Guide
- Capability Development Guides
- A Capability Self-Assessment Tool
- Success Profiles
- Role Pathways

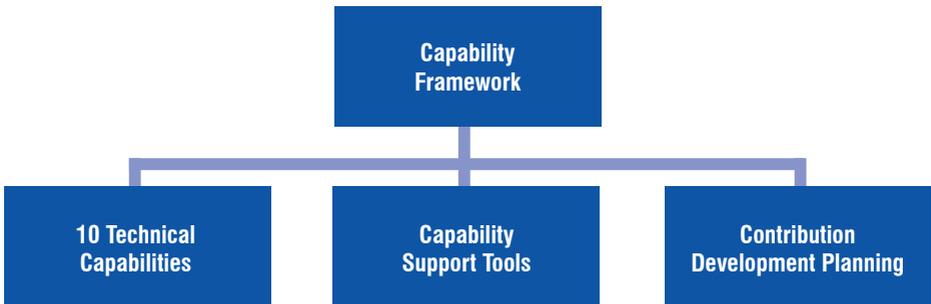


Figure C1.1: The Capability Framework Design Approach

Capabilities Specific to Production Hub Roles

The Capability Framework has been designed for specific roles within the Production Hub, including:

- Production Officers, Level 1, Level 2 and Senior PO
- Operations and Maintenance Coordinator
- Process Controller
- Reliability Engineer
- Process Engineer, Senior Process Engineer
- Process Manager
- Interface Manager
- Production Manager
- Production Leadership Team

There are 10 capabilities that relate to the Production Hub roles:

- Risk
- Safety
- Product Quality
- Environment
- Operations
- Asset Management
- Asset Maintenance
- Analytics & Insight
- Continuous Improvement
- Project Management

These have been assessed to four levels of proficiency: Foundation, Intermediate, Advanced and Expert (Table C1.3). Each of the 10 capabilities are further broken down into technical components. For example, the Product Quality Capability is made up of; Product Quality Management Systems, System Analysis & Management, Training and R&D, Review. These components also have a specific proficiency requirement. The average proficiency level of the combined technical components determines the proficiency level of the capability.

Table C1.3: Definition of proficiency levels

Level	1	2	3	4
Title	Foundation	Intermediate	Advanced	Expert
Description	Has some knowledge, skill and ability in this capability – or the minimum standards required to carry out specific tasks.	Has sufficient knowledge, skills and ability in this capability. Mostly autonomous requires minimal oversight and/or guidance.	Has a great deal of knowledge, skill or ability. Fully autonomous, can coach and guide others as well as coordinate and delegate tasks.	Has extensive knowledge, skills and ability. Role model and known as a thought leader in this area.

The required levels of proficiency were assigned to each production role through the creation of Role Profiles. These profiles outline the purpose of the role, the team the role relates to and the line manager. The role profile also sets out core activities and responsibilities, key skills and performance expectations. The roles are described in more detail in the Role Thumbnails, which expand on the purpose of the role, any direct or indirect reports and a comprehensive list of accountabilities.

A small working group was assembled to assign the appropriate proficiency levels to each role in the Production Hub, using the Role Profiles, Thumbnails, and proficiency level definitions for guidance. The working group discussed and agreed upon all proficiency levels across all roles to create the Capability Framework for the Production Hub. Table C1.4 shows the outcome of this exercise for the Product Quality Capability, with similar tables created for the other 9 capabilities.

Table C1.4: The Capability Framework for Product Quality

Role	Product Quality				
	Product Quality Management Systems	System Analysis & Management	Training, Research & Development	Review	Overall
Production Officer Trainee	Foundation	Foundation	Foundation	Foundation	Foundation
Production Officer Level 1	Foundation	Foundation	Foundation	Foundation	Foundation
Production Officer Level 2	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Process Controller	Advanced	Advanced	Advanced	Advanced	Advanced
Process Manager	Expert	Expert	Expert	Expert	Expert
PLT Representative	Expert	Expert	Expert	Expert	Expert

Managing Employee Capability

Sydney Water manages the learning and development of all staff across the business via their Contribution Development Planning (CDP) process. This is an annual cycle of improving individual and team performance, through setting of team and then individual goals in line with the strategic goals of the business. Integration of the new Capability Framework with the annual CDP discussions required the development of a set of tools for both employees and their managers:

- **Self-Assessment Tool:** Enables staff to assessment their own level of proficiency against each Capability and technical components therein. Allows for assessment of gaps in proficiency for current and aspired roles.
- **Development Guides:** The guides provide learning and development options using a 70:20:10 methodology for the 10 Capabilities and the 4 levels of proficiency. The guides are to assist CDP conversations between employee and line manager, highlighting training options to meet the capability gaps.
- **Role Pathways:** These are a map of the various career progression options available to staff from their current role towards aspired positions. They indicate the levels of proficiency required to achieve the capability to undertake a role in a new area or at a higher position.
- **Success Profiles:** Provide a snapshot of the behaviours, attributes, aptitudes, technical and non-technical expectations, accountabilities and experience required by each role. They project what success looks like to help motivate employees to meet these standards.



One final consideration in the Capability Framework and CDP process, is the opportunity for formal recognition through professional credentialing. In the case of Production Officers, this is likely to involve a process of adopting the National Certification Framework (NCF). Certification is an assurance to regulators, communities and consumers that a standard of competency and capability exists within the production Hub.

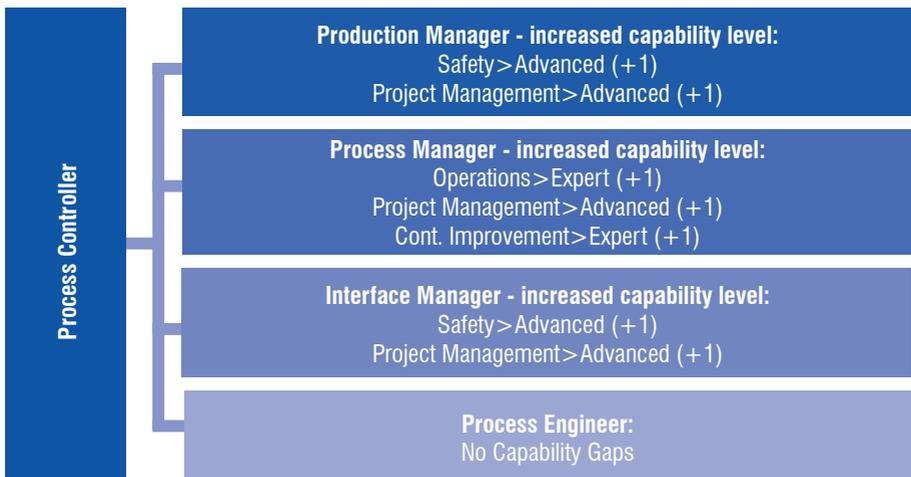
Discussion

Role Pathways and Implications for Career Progression

The creation of the Production Hub Capability Framework has enabled a transition away from the historic qualifications- based system of career advancement, where staff could advance by gaining a full qualification (e.g. Certificate III or IV in Water Industry Treatment). This meant that only those staff who were prepared to do significant amounts of study and formal education could have a realistic chance of advancement.

The Capability Framework opens up the career opportunities to all Production Hub Staff, with a fair, equitable and transparent framework for progression. Staff can confidently apply for roles based on not just qualifications, but also knowledge, experience, leadership and, most importantly capability.

Figure C1.2: The Role Pathway and career progression opportunities for a process controller



Capability Snapshot of Sydney Water's Production Hub

The development of the Capability Framework has also facilitated an exercise to gain a snapshot in time of how the Production Hub are tracking for development and progression of staff against the required capabilities and proficiencies across all roles and teams. In 2018 there were 269 staff who were assessed in a Capability Snapshot exercise across all areas of the Production Hubs, by assessing their current proficiency levels against a comparative future role. The results of this exercise showed that the majority of the workforce either met (47%) or exceeded (37%) the requirements of their "potential future role", with only 16% having a proficiency gap identified. This demonstrates how valuable the Capability Framework could be for workforce planning purposes, both now and into the future.

Conclusion

The Sydney Water Capability Framework Program for the Production Hubs is an example of how Production roles can be clearly articulated through Role profiles, and the required skills and knowledge can be determined based on key capabilities and specified proficiency levels. Key aspects of Sydney Water's program encompass the following L&D principles:

- A clear link to organisational vision, strategy and core values. Sydney Water and its Production Hubs strive to become a “frontier treatment organisation”, with a focus on aligning and prioritising team resources to meet customer needs.
- A performance planning and review process (CDP), with supporting tools for both staff and managers to actively engage in their career development.
- An L&D needs analysis that identifies the gaps between an employee's capability to perform their role and the required levels of proficiency.
- Evaluation and improvement, with initiatives such as the Capability Snapshot undertaken across the Production Hubs in 2018 demonstrate the power of the Capability Framework for assessing current and future skills needs.

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Technical Competency Project Supporters

