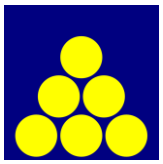
Capacity Management: Process Types

Two process types exist - plan and do. The capacity management knowledge domain processes are used as examples to explain this differentiation. These processes include produce capacity report, produce capacity plan and produce capacity assessment.



CapProcess

Processes that work!

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Introduction

Knowledge and work

To complete complex tasks people form and work in organisations. Organisations require people with different skills to work together to accomplish something that no individual could achieve alone. The work is broken down into activities and tasks that are allocated amongst the group. Over time people specialise in areas due to some form of preference or need (personal skills, knowledge, technical skills, enjoyment, team/organisational need). Combining the knowledge of different people allows us to solve more and more complex issues.

In time people start to meet and interact with others of similar skills usually at conferences and at meetings. Larger organisations may have several people with similar skillsets who can cooperate to share their knowledge and experiences. This shared knowledge increases our skillsets, increases our confidence levels and improves organisational performance (and our marketability). Our increased knowledge enables us to influence thinking in our organisations. Capacity management is such a knowledge domain.

Knowledge domains

ITIL describes these knowledge domains as processes, but they are not. They are actually several processes. Each of these processes is executed to support the goals of IT service management.

The primary goal of IT service management is to ensure that the IT operational areas perform efficiently and effectively. As such, IT service management performs a support or governance role – ensuring that the owner's wishes and organisation directions are taken into account so that the desired outcomes are achieved. Encouraging the use of best practices and continuous improvement ensure the organisation evolves to match the changing environment.

IT service management acts as the link between the business and the resources required to deliver an outcome. It achieves this by defining a concept, the service, which maps business requirements and expectations into a grouping of related resources whilst giving it a name. The resources include people, hardware, software, processes and supporting materials.

For IT service management, the knowledge domains include event, incident, problem, change, release, SLM, availability, capacity, ITSCM and finance. For operations the knowledge domains are technical such as database, communications and operations.

Capacity management

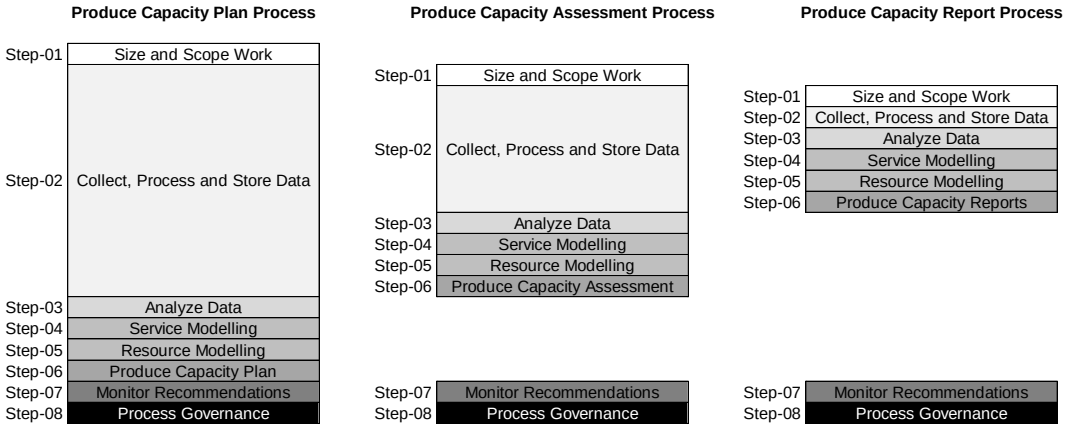
ITIL V3 2011 (Hunnebeck) lists the capacity management process as having three sub-processes: business capacity management, service capacity management and component capacity management. It also lists the relevant activities, which include:

- agreeing service level requirements
- designing (procuring or amending) service configurations
- verifying service level agreements
- supporting service level agreement negotiation
- exploiting new technology

- designing resilience
- monitoring
- threshold management
- analysis
- tuning
- demand management
- modelling and trending
- application sizing
- reporting
- capacity plan production.

But these activities overlap and do not lend themselves to creating simple process descriptions. Some are horizontal (processes and procedures) and others are vertical (activities and tasks). Such a mixture of concepts cannot be easily turned into a process or set of processes without some considerable conceptual work.

The capacity management knowledge domain usually manages IT capital resources to minimise capital spend. Commodities (non-capital items) are better managed through operational activities and tools such as Economic Order Quantity (EOQ) models. Capacity management influences the depreciation, maintenance and software costs of the organisation. The capacity management knowledge domain includes activities to make best use of the resources through the use of tuning techniques and translating the business requirements and plans into the capital items needed to support those requirements and plans. It requires several processes. These processes can include: raise performance change, produce performance assessment, produce performance report, produce capacity assessment, produce capacity plan and produce capacity report.



The produce capacity plan, produce capacity assessment and report capacity processes interact as represented in the diagram. The steps (Step-xx) are listed down the page in time order. The size and scope (preparation) activities are interrelated as the work of each process has to support the other processes. The produce capacity report process collects the data and produces the regular (weekly/monthly/quarterly) capacity reports. These reports and some of the analysis work are used by the produce capacity assessment and produce capacity plan processes. The produce capacity

assessment process undertakes additional analyses to answer what-if questions (from the business or internal IT). The produce capacity assessment modelling and reports (assessments) are also inputs into the produce capacity plan process. The produce capacity report and produce capacity assessment activities combine with other analyses of the organisational strategy, the business and regulatory environment and business plans to formulate a comprehensive plan for the next few years in alignment with the financial capital budget time horizon.

The produce capacity assessment process conducts a review of a subset of the environment such as an application, location, technology or service and acts as an input to a business case. It provides the expected IT resources and costs associated with some business change or plan.

The produce capacity plan process assesses the entire environment. It combines system and resource measures with forecasts based on business plans, projects and strategies (and applicable capacity assessments) to build a view of the additional equipment required. This is translated into a funding request for inclusion in the organisation's capital budget. The capacity planner must also understand the organisation's situation such as the availability of funding and important end customer service delivery requirements. Note that the final solution or design is often the domain of architects and designers.

The produce capacity report process is usually established after the other two processes (produce capacity assessment and produce capacity plan). Alternatively, if the tools and capability exist and only need modifying then the produce capacity report process can be established before (and support) the produce capacity plan and produce capacity assessment processes. The produce capacity report process automates some of the activities and improves the turnaround time for the produce capacity assessment and produce capacity plan processes.

The capacity planning and performance management processes differ in that the processes operate on different cycles in the business timeframe. The performance management processes occur more frequently (usually daily and weekly) while the capacity planning processes occur less frequently (usually monthly or annually).

The produce capacity assessment process is usually triggered by a request from the business for IT management input into the business case for some change.

The produce capacity plan process is triggered from the organisation's business planning / capital budgeting cycle and needs to start sufficiently in advance for delivery to the capital budget.

The produce capacity report process should operate on a monthly cycle to create reports that show growth trends and forecasts that incorporate known and/or approved business plans/projects. It should show whether the forecasts remain accurate or not. If the accuracy is not good enough a review and revision of the forecast is required, creating a feedback loop to improve the processes.

Two types of process

In simple terms, two types of process exist. Those processes are the planning processes and the doing processes. The capacity planning processes (produce capacity plan and produce capacity assessment) are planning processes, whilst the reporting processes (produce performance report and produce capacity report) are doing processes. Each has some features of the other process type – plan has some features of do (it usually has to produce a report as an output) and do has some features of plan (preparation/scoping).

The planning processes can be divided into several steps. These steps are:

- scope – understand the context and stakeholder requirements/needs
- collect – gather relevant data and understand the environment
- analyse – assess problems and build a model
- model – make predictions and assess possible solutions
- report – inform stakeholders and propose actions
- (implement) – take relevant action (trigger and drive a separate process)
- track – track and investigate variances
- oversee (governance) – report to management and stakeholders.

The doing processes can be divided into several steps. These steps are:

- scope – understand the context and stakeholder requirements/needs
- collect – gather relevant components
- assemble – build the product
- test – test the assembly – does it work as designed?
- approve – inform stakeholders and seek approval to progress
- implement – take relevant action
- track – track and investigate variances (continuous improvement)
- oversee (governance) – report to management and stakeholders.

The breakup of a process into steps or standardised activities is an over-simplification. The reality is that the boundaries of the process activities are blurred and loopbacks and re-work frequently occur. These loopbacks and re-work occur to collect more inputs or to even re-scope or re-design the solution and re-program the way forward. This is similar to the differences between waterfall versus agile development methodologies.

Conclusion

Structure the capacity processes as a standardised set of produce capacity report, produce capacity plan and produce capacity assessment as well as providing similar performance and demand processes.

A standardised set of processes can improve both the process documentation and our understanding of the ITIL processes by ensuring a process exists for each of the key deliverables: produce capacity report for producing the regular (monthly and quarterly) reports; produce capacity plan for producing and delivering the capacity plan (annually); and produce capacity assessment for producing ad hoc assessments.

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Philip Bailey is an expert in the field of IT capacity management. Phil has

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Phil has established a capacity planning methodology at various organisations. He has also trained several capacity practitioners over the years. He is an ITIL V3 Expert and ISO 20000 Consultant certified. He has written articles and spoken extensively about the methodology he developed relating to the IT capacity management process and its underlying activities.

Phil has a habit for acquiring and reading non-fiction books.

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CapProcess is based in Sydney, Australia.

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