

Managing IT Production Costs
Delivering IT Value

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COBIT is a set of best practices (framework) for information technology (IT) management created by the Information Systems Audit and Control Association (ISACA), and the IT Governance Institute (ITGI).

The use of Six Sigma to refer to a set of practices is associated with Motorola in the USA.

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Introduction

Spiralling Costs of IT Production Management

Today, IT Management is faced with an unprecedented challenge.

As IT Managers, we are familiar with the fact that technology changes, and that new revolutionary approaches to using and implementing IT appear regularly from the pages of academic journals and the product literature of software and hardware vendors.

However, the challenge demonstrated in this paper is of a different form.

The issue is understanding where IT costs are being spent – and how to justify and manage this spending.

For CIOs managing the IT Budget effectively means managing two separate IT functions:

- Costs of new project development, including design, development, and deployment of new software and hardware solutions.
- Costs of managing the day-to-day operational support of software and hardware solutions that have already been deployed.

Of these two costs, the former (“IT Development”) is very visible to the Business sponsors, since it involves capital expenditure that is directly or indirectly linked to Business projects and business initiatives.

On the other hand, the latter cost (“IT Production”) is often seen as a “sunk cost” – a fixed overhead that is accepted (often reluctantly) as part of the general costs of running a modern business.

Unfortunately, the costs of IT Production are increasing at a relentless pace, due to the historical legacy of IT infrastructure that the company has to maintain and manage.

It is how to approach the management of this latter cost that is the subject of this paper.

Changing Priorities for IT Management

As the focus of IT Management moves from developing new IT applications to managing existing systems (“keeping the lights on”), there is an increasing need for consultancy services that can help the IT Production Manager deliver improved effectiveness and efficiency.

Production costs in the Application Life-Cycle

In any IT organisation for a large- or medium-size company, the division of responsibility is typically split between IT Development and IT Production functions.

Traditionally, CIOs and CTOs have been primarily concerned with the project development process, the number of new applications and services that are being deployed, and the business benefits they should deliver (“IT Development”)

Once these new applications are deployed, they become the responsibility of the teams who deliver the day-to-day operational support of the system. We use the term “IT Production” to refer to this function.

However, for many CIOs, the cost of IT Production represents a large, and increasing percentage of their budgets (1).

There can be a number of reasons for this.

Pressures on IT Budgets

Firstly, IT Production - the cost of Maintenance and Operational Support – can end up being a significant percentage of the total costs of the application during its life-cycle. Whilst a typical IT development / deployment project may last, say, 6 months, the support for that application may be required for years in the future. In some cases, these costs could make the difference between whether the application is financially viable or not.

In addition, the IT production team is responsible for the ever-growing portfolio of historic business applications which the company has invested in during the years (and sometimes, decades).

Thirdly, as IT technology has changed so new support and production skills have to be imported into the organisation. However, at the same time, the IT Production teams need to retain their old skills in order to support historical (legacy) applications.

Fourthly, as new IT projects are deployed into production, there is rarely much significant consideration given to decommissioning old applications and environments. This, in turn, leads to growing costs to support diverse legacy infrastructure.

(1) Just one example of this is demonstrated by a 2006 Forrester survey of North American and European enterprise IT budgets and spending which found that companies now devote 80 percent of their overall IT spending to maintenance and ongoing operations, up from 73 percent in 2004.

Quoted by permission from “Reducing IT Complexity” by Bob Violino. For the full article, see <http://www.smartenterprisemag.com/articles/2007winter/coverstory.jhtml>

From the CIOs perspective, the demand for IT resources (of which human resources are the most significant) differs significantly between IT Development and IT Production.

Whereas IT Development demand is roughly proportional to the number of applications being developed, IT Production demand is proportional to the number of applications supported; - which is the sum total of all applications since the company started.

As a result of all these factors, the IT Production budget comes under increasing pressure. As new applications are deployed, the proportion of the IT budget that must be devoted to IT Production continues to grow.

IT Production = Delivering Value

Given these factors, it is not that surprising that some business (and some CIOs) can view IT Production as a “sink cost”, to be minimised as much as possible. What can be sometimes forgotten is that IT Production is the effective Value Enabler for the applications that the business requires.

It is axiomatic that any application or IT service does not deliver any business value until it is actually used. Whilst IT Development creates applications that have the *potential* to deliver value (and Return on Investment - ROI) to the business, that *actual value* is only delivered when the application is being run in a live environment – in IT Production.

One reason this is sometimes not recognised is, paradoxically, because of the very nature of the IT Production Culture.

IT Production Culture

It is generally recognised that there can be significant cultural differences between IT Development and IT Production. In extreme cases, this can almost amount to an organisational “wall” between the two teams, whereby applications are created in IT Development, and then thrown over the wall, for subsequent deployment and support by IT Production.

IT Production can be a frantic place, concerned with hardware upgrades, software and application deployments, backup and data copying etc. At the same time, there are inevitable minor crises, such as lack of disk space or table space for running systems, and other support calls. In addition, there are capacity issues such as additional users and availability.

Alongside this, there is always pressure to deploy the next big Project.

All this can lead to reactive “fire-fighting”, as IT Production managers struggle to keep the business running, responding to IT incidents and support issues. This, in turn, can lead to “short-term” mentality, and lack of client focus, and in turn to a “blame culture”.

This downward spiral can lead to lack of business support, and reluctance to sanction future investment.

Addressing this downward spiral is a key management challenge.

What is needed, therefore, is expertise that understands the unique issues and challenges of IT Production, and can address this challenge.

A New Consultancy Focus

The factors highlighted in the previous section lead to the conclusion that there is a requirement for a different type of Consultancy organisation which can engage effectively with IT Production Management, understand their unique challenges (which are very different from that of IT Development Projects), and deliver practical solutions.

The Consultancy Marketplace

Until the present time, many Consultancy organisations have tended to focus on IT Development issues. This aligns with the issues facing the CIO – the key executive customer.

However, as the focus of the CIO moves from the IT Development to the IT Production part of the budget (which, as has already been said, is typically the largest slice of the IT Budget), there is a need for a new Consultancy approach that meets these needs.

A Strategic Approach

Such a solution needs to be systematic, to enable IT Production managers to roll out changes in a managed way.

This approach should also take account of the culture of IT Production, when attempting to introduce Change into an organisation that, by its very nature, is expected to be averse to Risk (and therefore Change).

Finally, this approach should reflect the fact that IT Management should not only draw on general Management techniques, but is also a very Technical function in its own right.

IT Management = IT plus Management

What is needed, therefore, is a Consultancy approach that combines strong IT Production skills with input from general Management techniques.

These skills and techniques are combined in the MOPS (2) approach.

This acronym stands for the four key elements that, in our experience, have been shown to be necessary in order to Manage IT Production more effectively, i.e.

- METRICS
- OPERATIONAL TOOLS
- PROCESSES AND PROCEDURES
- STANDARDS

These elements are described in more detail in the following section

(2) The “MOPS” acronym is trademark pending to Dennis Adams Associates Limited. All rights reserved.

The MOPS Approach

The MOPS approach encompasses skills and knowledge both from practical Technical IT Production and from general Management techniques.

When combined, these elements can form the basis for helping IT Managers move to a more Pro-Active, Strategic, way of Managing IT Production.

Metrics

Metrics collection is an essential element of IT Production Management for two reasons. Collection of suitable management metrics enables managers to:

1. Identify where IT Support team effort is being expended, and hence re-direct/re-prioritise accordingly
2. Identify applications or services which are consuming disproportional support effort, and therefore need addressing
3. Plan expected resource demand based on historical data
4. Justify the IT Production effort by means of quantitative reports which demonstrate the service being delivered

Many IT Production Organisations today are investing in a Configuration Management Database (CMDB) that may be used to maintain some of this information.

However, we would hold the view the any CMDB (or sub-set) needs to be deployed in a pragmatic way, and focusing on the end-results above.

In addition experience suggests that other statistics that are often not stored in a CMDB are also important to IT Production Managers.

Identify Key Information to be captured and maintained in order to make informed Management decisions and justify IT Investment.

Operational Tools

It is well known that the key elements of any Management system are People, Processes and Products. The latter is reflected in the Operational Tools element of MOPS.

The MOPS approach focuses on the importance of deploying software to help IT Production both do the job better, and (equally importantly) report on what they are doing.

Operational Software Tools can assist IT Production to:

1. Capture the Metrics of IT Production, including Time Used, Support Calls, Business Transactions, statistics on the Infrastructure Supported etc.
2. Automate the day-to-day support role, including Batch processing, Backup, Central Console, Alerting etc.

In practice, one of the issues with operational software tools is that they are often implemented "in isolation". Hence, the MOPS approach emphasises the importance of having a "referential" approach to Operational Tools deployment, as part of an overall Tools Strategy.

One aspect of a “referential” approach is to make sure that you have common naming conventions for all your applications, servers, etc. in each of the different tools.

Experience also reinforces the fact that the more tools an organisation has, the more complex the task of integrating them together.

Advise on the selection and integration of appropriate software tools to manage the infrastructure and the people who look after it.

Processes and Procedures

Processes and Procedures advocates having a consistent, repeatable way of doing things, so that the work done in IT support is done efficiently; (“working smarter, not just harder”).

IT technical teams are sometimes averse to the implementation of Processes and Procedures. This is a natural consequence of the technical skills they have.

On the other hand, it is clear that the pragmatic deployment of appropriate Processes and Procedures can add real value to the IT Production organisation.

Properly implemented, Processes and Procedures can:

1. Speed up the way support is managed
2. Reduce costs
3. Ensure that the business has a predictable service

The corollary, which has been shown by IT Production experience over the years, is that badly implemented Processes can:

1. Slow down the ability to respond to business needs
2. Increase Costs
3. Lead to a loss of Service

The Processes and Procedures element of MOPS emphasises the importance of introducing processes that add value, not bureaucracy. It also recommends that managers concentrate on the linkages between IT Production and external teams (developers, business units etc.).

Many of the processes that are required in IT Production can be based on the ITIL framework. However, other management techniques – such as six-Sigma and LEAN process improvement methodologies – should also be used.

Not only that, it is essential that any deployment work is done in a pragmatic way, by people who have a practical understanding of the IT Production environment.

Implement pragmatic processes based on ITIL and build linkages with Business and Development team processes.

Standards

The topic of Standards was included in MOPS because it is a key technical imperative for the management of IT Production costs in the long term.

The modern IT Production datacentre is a very heterogeneous environment. Sometimes this simply reflects the “march of technology” as new technical solutions (blade servers etc.) become available. However, this is not necessarily the sole reason for the heterogeneous nature of IT Production.

The technology that is managed today is a result of technology choices which were made when the application or service was first deployed.

In some cases, the choice of Technology for a new Application can be driven by Developers' choice. For example, there may be:

- Useful Development Tools associated with a technical solution.
- Key Design and Development Features to speed development
- Familiarity with certain technologies on behalf of IT Development
- A desire to try out the latest technology?

These may be valid reasons for choosing a specific product stack. However, without considering the support implications of such technology choices, it can lead to Applications whose Development costs may be Low, but whose Support Costs may be high (or even prohibitive).

Defining and Managing Standards from an IT Production perspective can redress this balance.

As part of this initiative, it is necessary to formally create an IT Production Architecture function, with a specific remit for looking at the "Production Suitability" of technology choices, and ensuring that Infrastructure Architecture is created with an eye to the supportability of applications, as well as their business functionality.

Introducing simplicity and standardisation in production can lead to economies of scale in Support and can also contribute to controlling the costs of Maintenance and Support within IT.

Implementing MOPS

Whilst many CIOs or CTOs may recognise the benefits of introducing some of the elements, above, there may be a concern about the feasibility of implementing them into the IT Production organisation.

Implementing Change into an organisation such as IT Production (which, by its nature is Change averse) takes skilled consultants who understand the IT Production culture.

With the correct skills in place, a systematic approach can be taken.

The main steps in a major MOPS deployment are typically as follows:

1. ANALYSE existing IT Production under the MOPS headings.
2. IDENTIFY the gaps under each of these headings.
3. PRIORITISE from IT Production perspective, but also....
4. ENGAGE with Sponsors and Business, to get appropriate buy-in,
5. CREATE the Strategic Roadmap owned by all stakeholders
6. INCREMENTALLY role out changes to the way the department works

This incremental approach can be used to ensure that changes are deployed effectively in IT Production.

Establish Technical Strategy and Architecture Standards to ensure that future applications can be supported at optimal cost

Client Benefits

Using the services on a specialised IT Production Management Consultancy can lead to a number of benefits to clients. Some of these benefits are immediately quantifiable. Others are enablers to improve the effectiveness and efficiency of the IT Production teams.

Better Strategic alignment

- The Metrics initiative leads to explicit measures of effort and investment on a per-application basis. This enables the IT Production manager to demonstrate where his team is investing time and effort in support of the business goals.
- The use of Standards in IT Production can demonstrate where cost-savings can be achieved by the use of centralised IT Production on behalf of the business units.

Pro-Active, instead of Reactive culture

- The deployment of appropriate Operational Tools and a tools “referential” approach can be used to encourage a more pro-active support culture in IT Production.

Improved Cost Management

- Use of Metrics gathering can demonstrate where the IT Production support costs are being consumed, and so lead to improved cost management.

- Operational Tools, when properly integrated in a “referential” approach, can leverage the skills of IT Production team members, and lead to overall improvements in efficiency of support.
- Introduction of technology Standards can reduce the range of technologies managed and supported in IT Production. This, in turn, can lead to a reduction in skill-sets which are required, and hence a more efficient use of resources.

Improved Client Focus

- By making IT Production more transparent, the Metrics initiatives can help focus the IT support effort onto those areas of activity that best align with the business requirements.
- Processes and Procedures (such as those based on the ITIL framework) can lead to a more client-focused approach to the way IT Production works.

Making the case for IT Investment

- IT investment can be difficult to obtain if IT Production is seen as just a “black hole” of costs. The introduction of Metrics, in particular, can help demonstrate the value-add of IT Production, and therefore make the case for further investment.

Case Studies

The following example case studies are anonymous, based on experience with real IT Production environments. Dennis Adams Associates does not disclose any client names, details, or any commercially sensitive data with third parties.

Reduced Costs of Database Support

An international company was in the process of choosing a new software product for worldwide deployment.

The IT Production Architecture team had defined clear Standards for Operational acceptance of products into Production. Hence, the team was able to guide the selection the package, to ensure that the final selection was Supportable in Production.

As a result, the expected costs of supporting the application were significantly reduced.

Faster Response to Major Incident

An IT organisation was faced with a major incident involving outage of one of the data centres.

They had recently invested in a basic CMDB showing applications and the equipment that they were hosted on.

As a result, the organisation was able to accurately prioritise and schedule the recovery of services, and deliver a faster response to their customers.

Improvement in Help Desk Incident Resolution

A medium-sized IT Production department was able to achieve immediate benefits from the introduction of a basic Problem

Management and resolution process, based on ITIL principles.

These processes were introduced in a pragmatic way and made optimum use of the client's skills and resources. As a result, the number of Help Desk Incidents was reduced by means of pro-active problem resolution.

Reduction in Support Costs for Business Applications

A timesheet system, properly configured to address the way IT Production works, was deployed in the IT Production department of a large organisation.

The success of this system was demonstrated in that it was able to identify the key business applications that were taking a disproportionate percentage of support time - and leading to application support cost reductions

Reduction in Overnight Support Call-Out rates

A multinational banking organisation agreed to the deployment of an integrated alerting Tool to pro-actively identify risks before they became incidents.

The bank was able to drastically reduce the overnight incident callout rate for database administration for the organisation, which lead to improved business processing.

Improved control of Infrastructure Change

There are documented examples where the pragmatic introduction of ITIL-based change and release management was able to improve the quality of application service delivered to the business, and thus lead to improved cost control.

Conclusions

As the focus of IT Management moves from developing new IT applications to managing existing systems (“keeping the lights on”), there is an increasing need for consultancy services that can help the IT Production Manager deliver improved effectiveness and efficiency.

Such consultancy services need to be resourced by consultants who are able to combine both technical IT knowledge and generalised Management knowledge. This is because Management of IT Production is both an IT skill and a Management skill.

Dennis Adams Associates was formed specifically as a consultancy to fulfil this need.

The company represents a group of experienced consultants who have an established career history in IT production, and the ability to help IT Production Managers to:

- Improve cost controls and cost visibility.
- Create a more “client-focused” culture.
- Smooth application deployment and operational handover.
- Pro-actively manage the Production environments.
- Justify future IT Production expenditure to the business.

To supplement the Consultancy resources, the company has also developed a comprehensive approach to IT Production Management Consultancy – the MOPS approach.

This approach is based on the four key elements that are necessary in order to Manage IT Production more effectively.

Drawing on both generalised Management knowledge and skills and a solid background in IT, the MOPS approach delivers a strong management framework that can be used to manage, and continually improve the management of, IT Production.

Consultants are chosen to work with Dennis Adams Associates because they are able to combine the Technical elements of IT Consultancy with soft-skills from business Management Consultancy.

Typically, consultants have many years experience as technical support team members (DBAs, System Admins etc.), followed by practical experience putting in management solutions (ITIL, Six-Sigma, COBIT etc.)

Managing IT Production requires both Technical IT knowledge and skills, combined with General Management knowledge and skills.

Dennis Adams Associates is proud of the slogan “We Understand Managing IT Production”.

Services provided by Dennis Adams Associates

Dennis Adams Associates provides a number of consultancy services to help address the specific needs of IT Production Management.

Strategic Auditing

Dennis Adams Associates can use their experience of advising IT Production Managers over many years to assess the IT Production environment against the key MOPS criteria.

We can then advise clients on how to define and IT Production Strategy to deliver improvements in the way IT Production is managed, to the benefit of the business client as well as making IT Production a more pro-active working environment.

MOPS Services

The core of Dennis Adams Associates Consultancy offering is based around the key MOPS which are necessary to manage IT Production efficiently.

Working with each client on an individual basis, we can address some (or all) of the MOPS categories, with the objective of being able to demonstrate “quick wins” which deliver measurable value to the IT Production Manager.

In many cases, our clients already have specific MOPS shortfalls in mind, in which case we can work on delivering each on in turn. The following are some examples;

1. Creation of regular Metrics reports that can be used for monthly business

reporting and/or for internal use by IT Production.

2. External consultancy to assist with the choice of Operational software tools and integration of them into an overall IT Production Tools Strategy.
3. Design and implementation of new IT change and release management Processes, specifically tailored to the culture of the client’s IT department.
4. Assistance with creating an IT Production architecture team with responsibility for defining Standards based on production-worthiness criteria.

Training

Dennis Adams Associates can periodically run training courses on how to assess organisations according to the MOPS criteria, and how to approach the deployment of MOPS.

Other training courses are more specialised, such as how to define “production worthiness” criteria and addressing the issues and challenges of creating an IT Production Architecture function.

Interim IT Management

Given their extensive experience as IT Managers, our consultants can sometimes be asked to fulfil roles as interim IT Managers.

This gives them the opportunity to address interim management issues at the same time as demonstrating their pro-active approach to running IT Production.

Further Details

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For further details, register at the company web site: <http://www.dennisadams.co.uk>

We would be pleased to arrange a free appointment to discuss the issues you are facing in Managing IT Production.

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