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SOEs – Standard Operating Environments

The SOE concept explained in business terms

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Introduction

The use of Information and Communications Technology (ICT) in organisations has gone well past the stage of being unique, novel and even technically difficult. Nowadays, the technology is readily available, thanks to the volume demand from commercial and residential market segments.

Even so, there are benefits from adopting a Standards based approach to choosing and deploying ICT assets; and offering technology based IT services to customers.

This white paper will provide a brief introduction to the philosophy of Standard Operating Environments, and will explain the likely benefits, costs and planning factors that relate to adopting an SOE approach.

Background

When desktop computing and Local Area Networks appeared in organisations in the 1980's, they were small scale and of little immediate consequence. Being somewhat complex, and requiring some hands on technical skills, they were acquired in small quantities. The low cash costs meant they were often purchased 'under the radar' of senior management and IT teams.

The practical use and popularity of PCs and LANs grew, to the point that some organisations recognized the need to account for the cost of assets and people's time spent on support. Since then, industry analysts have studied the real costs using Total Cost of Ownership (TCO) techniques and found that the total costs over the technology lifetime have been around 6-7 times the initial purchase price.

Some organisations that permitted disparate purchasing now have many types, brands and models of computing devices. This leads to a serious IT Service challenge, since end-to-end service can seldom be assured if the devices are not known and understood. This is at a time when organisations have become reliant on technology and consistent levels for IT service.

What is an SOE

A Standard Operating Environment (SOE) is a declared standard regarding a type of technology.

Whilst most commonly, used to describe the ubiquitous Desktop PC, the term SOE, can also be used to declare a standard for almost any type of technology, from PC right through to mainframe. It may also declare a standard for software, a chosen service, process or supplier.

The main principle is that when several choices exist, and that occurs often in the ICT world, the most suitable one for the organisation is chosen and declared as the standard item. This allows the organisation to focus its efforts on fewer technology device types, and this leads to better service, support and prices.

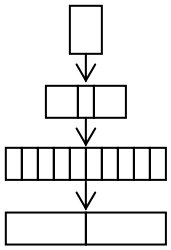
In some cases, multiple standards can be chosen, for example 2 or 3 standard PCs, where it makes sense to guarantee continuity of supply, or to use competition to achieve lower prices or obtain better service.

The extent to which an SOE is defined is governed by the organisations choice at a strategy level.

SOE – How deep?

One of the strategic questions for an organisation, is - *How 'deep' or intensive should an SOE be defined?*

For example in a Desktop PC SOE, an organisation may specify



- Architecture (is it Intel or Mac);
- Vendor (Brand A or Brand B);
- Technology product (specific make and model, or software set);
- Technical standard (processor, screen, disk and RAM size) ;
- Configuration (specific physical and software options);

At each subsequent level, the specification becomes more detailed.

There is no absolutely correct answer. It all depends on what the organisation wishes to achieve; the degree of control possible over changes; what it is prepared to pay; and what risks are involved if this is not done.

It is quite valid for an organisation to select a manufacturer (or reseller) and sub-contract the rest of the worry to them. Some organisations choose to specify right down to the lowest hardware and software configuration item. In these instances there might be mission critical or military specifications to be observed.

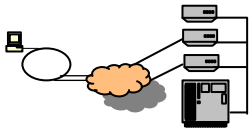
Certainly the deeper the SOE definition, the more hands on effort is required to test, select and maintain the standard.

SOE - What breadth?

The second broad question is - *To what breadth or width should an SOE be defined?*

For example, in a medium to large organisation, where a number a technology domains may be used, the organisation may need to decide if standards apply to some or all of the following categories:

- The User device;
- User Application Software;
- LAN media and servers;
- Wide Area Network and Telco Services;
- Midrange and Mainframe servers;
- Network & Systems Management tools; or
- The total collection of connected technology, End-to-End.



Once again, there is no absolutely correct answer. The choice depends upon how dependent the organisation is on the technology and their desires to manage these inter – connected assets.

Similarly, the broader the extent of the SOE, the more effort is required.

Where have they been used?

The following brief case studies provide some context for the SOE choices:

Case A – A home improvement manufacturer provides an in-home 'measure and quotation' service. Mobile sales people attend customer's homes and businesses to sell them window blinds, screens, security doors and related lifestyle products.

Each sales person is equipped with a notebook computer and a portable plain paper printer. This allows them to enter measurements against product line items and produce a printed quotation. The details are synchronized with the company server later in the day, as part of order processing and record keeping.

These facilities ensure that measurement takes place only once; there are no mistakes from illegible handwriting; and there is no need for a second (repeat) visit.

The customer receives a professional and uniquely numbered quotation, from which they can order immediately or at a later date.

Behind the scenes the road warriors PC SOE is:

- Planned by the IT coordinator with the help of an external consultant;
- Assembled and delivered by the chosen reseller of the PC Notebook and Printer; and
- Maintained by the same reseller on a Service Level Agreement.

The SOE ensures all sales staff are equally equipped; that spare equipment can be readily used; and downtime for technology maintenance is minimised.

Case B – A large international organisation operates 45,000 desktops for the use of personnel in their daily business processes. They have technology standards in place for most technology domains to ensure consistency for users.

This is particularly important for customer contact personnel, who are located in call centres and use the desktop technology to access several local, midrange and mainframe based application systems concurrently. These people may be fulfilling orders or answering service and billing enquiries, whilst the customer is on the phone.

Behind the scenes the ICT infrastructure standards and assets are:

- Planned and defined by a single architecture setting group, plus one of a number of national engineering focused teams, consisting of trained specialists;
- Assembled and delivered by a number of contracted vendors who pre configure most items to the standards before delivery; and
- Maintained by regional operational groups who manage the infrastructure and ensure service delivery.

The SOE ensures the organisation can optimize its IT Service availability and realise financial savings by establishing large volume contracts.

Benefits

Most of the benefits of an SOE are derived from achieving a high degree of uniformity in the technology. These benefits may include:

- More consistent IT service, since the technology is either uniform or at least up to a minimum revision level;
- Poor quality is eliminated up-front. Service quality is improved since only known 'good' products that pass specific tests are added to supply contracts and thereby 'allowed into service';
- Technical incidents and problems are quicker to diagnose and repair since the technology is part of a known set of products. Unique items or configurations tend to stand out because they are different, and they can be quickly identified;
- The management of the 'assets fleet' can be simplified. All asset categories and types are known, as they have been assessed through an approval processes. Additionally, the use of 'Lease Finance' may help to better maintain asset records;
- Software deployment can be achieved at a faster rate and with greater confidence. The knowledge about items in the fleet allows the use of software distribution technology (tools);
- Leveraging the vendor workforce and facilities. Since a small number of standards have been defined, the organisation can arrange for the vendor to 'pre-load' software, from a standard image or template;
- Improved user perceptions. Since most users will understand the intention to provide them with a known and similar level of IT Service;
- Better use of people and skills. End user personnel are no longer needed to provide a significant level of local 'IT expertise', and these people will be able to focus on core business rather than IT Support;

- Reduced purchase costs. When hardware and software purchases are structured under larger common contracts, the organisation can use the volume purchase level to negotiate better prices. Additional services such as stock holding levels, free delivery, extended warranty, technical support and so on, may also be possible;
- Simpler transition to an outsource (or insource) provider model, since the assets are known and service quality can be more readily measured; and
- The opportunity to reduce the Total Cost of Ownership (TCO).

Costs and Issues

The costs associated with implementing an SOE may include:

- People, to plan and implement the program, as well as those to manage it as a regular ongoing function;
- Test facilities and technically skilled people to conduct product testing;
- Network Management Tools such as software distribution technology;
- Time and skills to better manage the vendor, although this will most likely be offset by better service levels from the vendors;
- Change management effort to negotiate and bring the change into effect. Some relocation of personnel may be required; and
- Communications and Education. Particularly for the ongoing provision of information about the technical standards and standard products.

Organisations are encouraged to examine where the most value is to be gained based upon their present activities and knowledge about costs.

Basic Business Case

The business case for implementing an SOE maybe based on one of the following:

- To ensure consistent or stable service;
- To allow faster deployment of new technology; or
- To reduce costs.

Stability

If business continuity is the prime area of interest, an SOE can improve service reliability and extend available service times.

Organisations are encouraged to seek funding offsets in aspects such as the prevention of downtime; more consistent service quality; reduced stress for users; and ultimately better end service to customers. An organisations risk management policy and plans may offer a means to quantify these further.

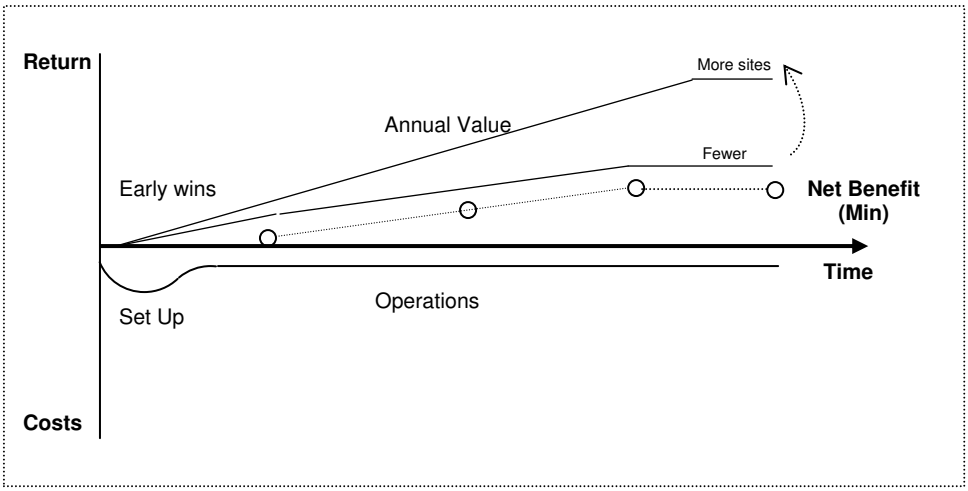
Deployment Rate
If an organisation needs to achieve infrastructure changes quickly, the adoption of known standards can speed up planning and implementation times for deployment projects.

Organisations should find there are savings through the shortening of project execution times and thereby receiving benefits earlier. Additionally, external help can be engaged

Costs
An SOE requires some up front costs which are recouped through efficiencies and economies of scale.

The financial case can be modeled, for an organisation according to its requirements. A discounted cash flow analysis technique is recommended since the implementation options are likely to extent over various time periods.

The most convincing financial case exists when there are few standards and many deployed sites. In this case, which is illustrated below, the investment in the R&D test lab, technical specialists and the change program, can be recovered early in the project. For organisations with many sites, the net benefit is stronger and is realised earlier.



Planning factors and Challenges

Factors to consider when planning an SOE implementation are as follows:

1. Availability of funds and expertise to form the shared function;
2. Availability of funds over a period of time, to progressively replace assets with standard items;
3. Acceptance by people in the organisation. This includes the culture in the organisation, regarding the acceptance of IT products selected by others; as well as the attitude of potentially displaced personnel;
4. Senior management support, to engender 'follower-ship' and to realise the benefits;
5. Capabilities in the IT team, to deliver and manage the standards. This includes the culture and readiness of IT personnel to accept and perform a leadership role; and
6. Lessons learned from past policy, governance and standardization initiatives.

The adoption of an SOE is an initiative which requires consideration from the perspectives of:

- Change Management from a business viewpoint;
- Competence in the management of technology;
- Internal Marketing; and
- Effective IT Service Delivery.

In many organisations, the IT team is not fully skilled in these aspects. Management may need to provide ongoing support and direction for a period of time. Consideration should be given to the likely reaction from people in the business units of the organisation.

Attention may also be required in the ongoing communications of what the standard products and services are. Skills may need to be developed in the area of documenting and describing the services and their characteristics, in an internal application of services marketing.

Support

Fortunately, support is available to assist organisations in planning and implementing a Standard Operating Environment.

The processes required to design and maintain an SOE program, are contained in the Release Management process, of the IT Infrastructure Library (ITIL).

Network management tools, such as those to produce and maintain software images, have been available for some years. Tools are also available to automate network inventory, version management, and software distribution tasks.

Vendors are also a useful resource, having gained expertise from dealing with their other customers. They will often provide help on a minimal fee basis, providing order quantities are sufficient.

Finally there are also a small number of organisations which offer services such as consulting assistance, planning advice and mentoring.

Conclusion

SOEs have been around for about a decade, and some organisations have achieved effective management of their ICT investments as well as stabilized their IT Services. There appears to be opportunities for other IT Managers to also consider this initiative.

References

Useful references links include:

ITIL (Release Management and other processes)	www.itil.co.uk
Other white papers from Tech Partners Consulting	www.techpartners.net.au

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Alan offers 20 years experience in the management and implementation of technology and technology based services. He holds tertiary qualifications in Communications Engineering and additionally has pursued post graduate studies in Business and Marketing. He also holds the Service Manager certification in IT Service Management.

His experience is gained from time in the Telecommunications industry, IT Services Management, Project Management and ICT Consulting.

His professional interests include change via the introduction of technology; and the marketing and delivery of ICT services within and between organisations.

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