

Optimizing Engineering Workstation Provisioning Process, Case Sweco Finland

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Master's Thesis
Degree Programme in
Information Systems Management
2016



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Degree programme Information Systems Management, Master's Degree	
Thesis title Optimizing Engineering Workstation Provisioning Process, Case Sweco Finland	Number of pages and appendix pages 44 + 27
<p>The study describes Sweco IT Finland's improvement effort in standardizing the workstation deliveries for company's 2000 users in Finland.</p> <p>Effort includes process creation for application portfolio governance from technical perspective, how to ensure IT understands what customer needs and how that can be reflected the soonest on what becomes available to users' workstations.</p> <p>Engaging in wholesale partner collaboration is described as well as process flow from partner to user's desk and how the workstation lifecycle is managed from beginning to the end.</p> <p>Process feedback and analysis from main stakeholders along with improvement proposals is included.</p>	
Keywords Application portfolio governance, application installation, voice of the customer, workstation pre-installation	

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1 Background

Sweco is a Swedish engineering company with operations in 14 countries and headcount of 16000 around Europe. Sweco's vision is "To be Europe's most respected knowledge company in the fields of consulting engineering, environmental technology and architecture." (Sweco.se, 2016). Sweco's subsidiary in Finland is Sweco's second largest with personnel of 1930 (figure 1).



Figure 1: Sweco's presence in Europe

Author is IT Support Services Department Manager for Sweco IT in Finland, serving the 1930 users in Finland on areas of user support and workstation delivery with Finnish IT Service Desk personnel.

Sweco's growth has been through acquisitions and the strategy has been executed both in Finland and internationally. Sweco in Finland has grown substantially over the last half a decade and is now a 1930 user engineering organization with expertise on all areas of infrastructure building and consulting. Sweco's strategy of acquiring companies had at one point accumulated to over twenty separate companies in almost fifty addresses in Finland.



Figure 2: Sweco's locations in Finland

Sweco Group originates from Sweden and its main area of concentration until recently has been the Nordic countries. In the last two years Sweco has expanded significantly to central Europe by buying Grontmij, one of Europe's largest engineering companies, making Sweco Europe's largest and growing its headcount to 14500. Sweco's headquarters is in Stockholm and Sweden is still the largest country in headcount and turnover, with 5400 permanent employees and 6838 million SEK in net sales. Finland is second by number of 1930 employees, but third in net sales of 1663 million SEK, after Norway (Sweco.se, 2016).

1.1 Sweco IT

Sweco IT is a global organization within the group and provides all IT services to Sweco's business units. IT's operations and development is primarily concentrated to global teams in Sweco's headquarters in Stockholm, Sweden. Global teams do have members outside of Stockholm and Sweden also, but main concentration is in Sweden. Global team members being distributed outside of Sweden secures often needed expertise availability to local matters.

IT has local teams in each country mainly concentrating on user support, incident management and workstation deliveries. In addition to these tasks local IT organizations also manage country or business unit specific legacy applications that do not appear elsewhere in the group. These applications are mainly human relations, payroll or finance related with roots deep down in companies' background operating processes dating back to companies' times before joining Sweco. There are also a few in-house developed engineering applications, which local IT supports to its best capability. However, IT support's role with the aforementioned applications is often limited to that of a platform provider. Departments themselves have trained super users who support users in their daily content related matters.

One key task for local Service Desk organization is supplying users their IT equipment. That is workstation, either a desktop or a laptop computer, a display to it and related peripherals. Also, all related software installations are local Service Desk's responsibility with only few exceptions to the rule. These exceptions are business unit applications which require such expertise, that it is not feasible to have that in IT.

Finnish companies within the group until year 2013 had their own IT support personnel. In 2013 all these IT employees were brought together into one team and IT Service Desk Finland was formed.

1.2 Problems in the Beginning

The aforementioned several companies had developed their own IT practices, which obviously were not similar, and if brought together would to cause confusion and unclarity.

Each company had had their own practices to managing software installations. There were some similarities with practices, but none was superior to other. Each company had file shares from which software was installed, and even within a company installation related activities varied depending on who executed the installation

At the time of Service Desk formation, the number of disk shares for application installations was near twenty. Some of the companies allowed users to have administrator rights to their workstations, some not. Two thirds of users were able to install applications by themselves, while one third had to turn to support personnel for assistance whenever any installation was needed. On group level there was intention of harmonizing user policies so that administrator rights be removed from users and via automation reach same service level in installations. However, there was no clear concept available for that.

The newly formed Service Desk team had a task of installing applications to all workstations, no matter which company the customer was from. Users' administrative rights did help in some, but not in all situations. Even if users could install applications themselves, they had to be told where to find the software packages. Nevertheless, new workstations had to be installed completely and altered from factory installed settings to one that designer and engineers could use straight from the box, and that was Service Desk agents' duty. Service Desk agents soon began complaining how difficult it is to find software packages from several disk shares. Also, it was difficult to know whether an installation package exists in the first place.

Situation is described in figure 3 – several disk shares from which newly grouped team members were to install applications prior to workstation delivery.

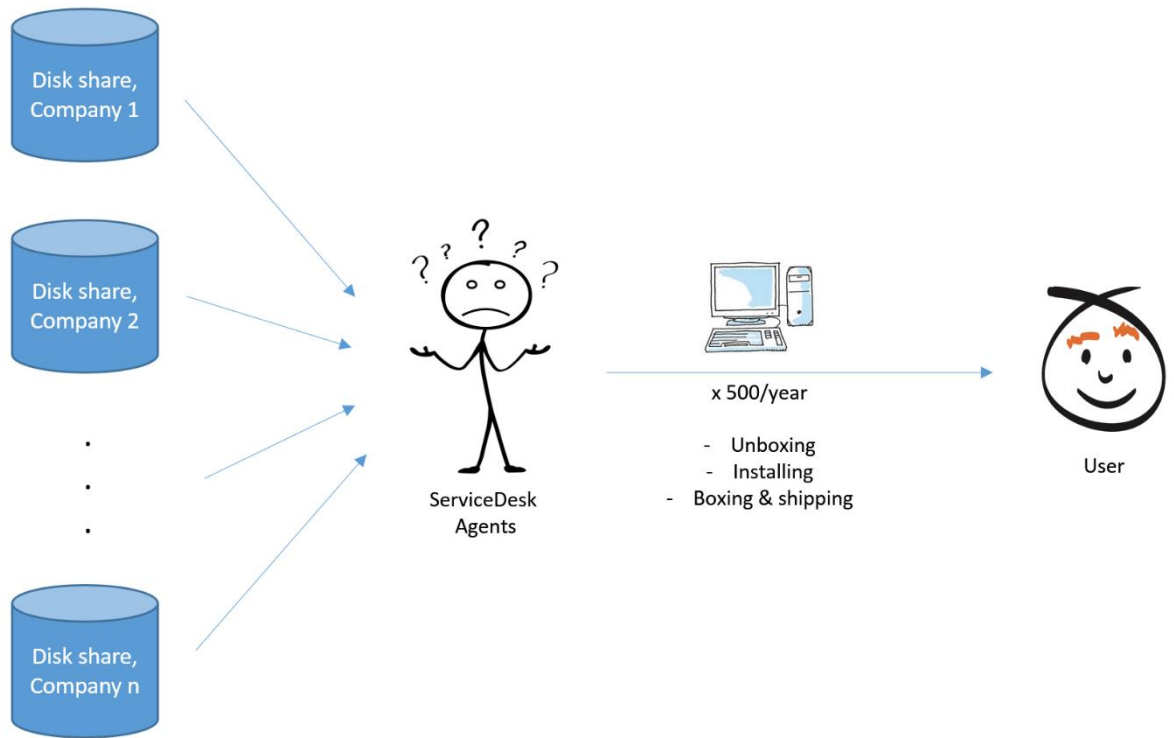


Figure 3: Several disk shares from which to search for software needed for user's workstation. Service Desk Agents unboxing shipments, manually installing software, repacking and shipping to remote offices.

Another problem was knowing if a user's installation request was legitimate. There was no list of supported or allowed applications, and from IT's perspective the business unit input was unstructured (figure 4) as input often was sought for only for isolated cases and there was no mechanism to record the input for further use. There was no one source from a unit who could say how the set up was to be and workstations became tailored for each user.

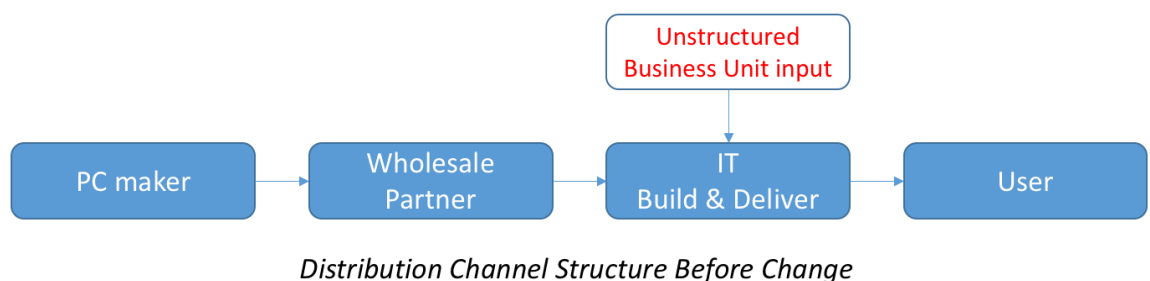
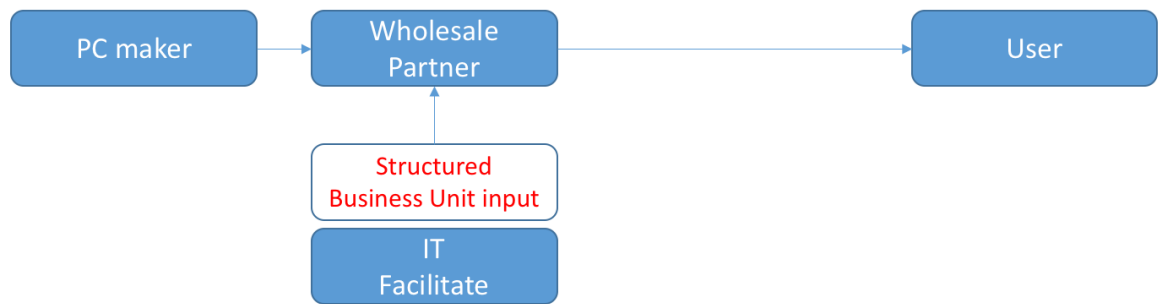


Figure 4: Wholesale partners deliver workstations as-is from PC maker, Sweco IT modifies pc contents to suit Business Units' needs. Outcome varies, even within a Business Unit.

For historical reasons two thirds of the workstations were financed by leasing partner, while one third of workstations and peripherals were bought. The lease length was primarily 36 months. That gave operation structure and prevented technical debt creation, but it also put a big pressure on IT organization to get replacing workstation orders in on time, build the machines and deliver workstations on time just before the leasing expiration. Some companies did not lease and that allows those companies' workstations to escape the renewal process as there is no external pressure to get them updated. That, in turn, creates an opportunity for technical debt to emerge as companies which are not doing well may seek for saving opportunities by not updating workstations. There were no internal guidelines of how often to renew pc's, but leasing agreement forces the companies for periodical renewals. Leasing returns' cyclicity guided the process a lot. The cycle for leasing expirations and respective workstation orders and reclaims had to be run every three months. Having renewed pc's on users' desks on timely manner with less IT involvement was one of the main drivers of the effort.

2 Objectives

The target of this study is to describe Sweco IT Finland's efforts to move IT Service Desk personnel work content to more value adding activities by structuring the Business Unit input to application portfolio content, and moving the installation part of process for wholesale partners and users to manage (figure 5).



Distribution Channel Structure After Change

Figure 5: Wholesale partners install additional software to suit Business Units' needs. Outcome standardized within a Business Unit. IT facilitates the process and ensures Business Unit input gets incorporated in available applications catalog.

Target for the effort was to improve the workstation provisioning process, away from unclear, sporadic practices to standardized processes, that would apply Lean principles whenever feasible.

Author joined Sweco in May 2013 as IT Support Services Manager in charge of servicing all Sweco companies in Finland. During the landing period it became clear that the several practices with workstation provisioning were not the most efficient or clear. As IT personnel's background was varying, they were not familiar with each other's practices and there was not one superior method over another. Support team did have the expertise needed for creating a process that would combine the best practices from all companies.

Similar effort as this study describes had been on Sweco IT's roadmap some time, but that had not been actioned. Originally that project had been planned to Sweden, but author together with Sweco IT Business Relationship Manager (BRM) in Finland was

given permission to proceed with efforts on creating a process and practices for efficiently delivering IT use environment with help of third parties, relieving IT personnel's time for more value adding IT support purposes.

There were no direct cost cutting drivers involved. Target was to improve processes and free personnel time to more value adding tasks. Personnel job satisfaction was also one of the key drivers. Thinking was that reaching those targets would result indirectly in cost savings.

Freedom to act has been large and very local. There has not been a lot of directive guidance from outside, rather the top management has trusted the Finnish commitment to create as globally replicable process as possible. The only limit set by the group is the tool used for software deployment (Microsoft System Center Configuration Manager, SCCM), which is used globally in the company.

2.1 Problem

After having spent few months at work and picture becoming clearer it became obvious to author that many of the process steps did not add value (figure 6), or that actors in the process should spend their time in things that better added value to Sweco doing things in which they could use their company understanding to benefit the company most.

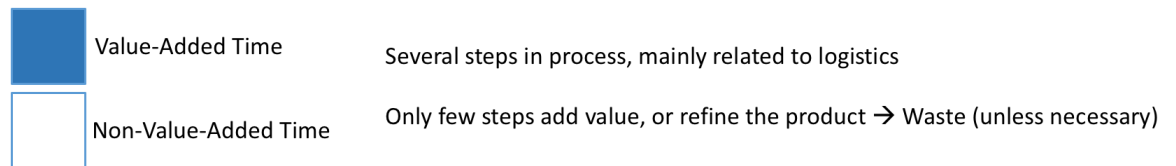
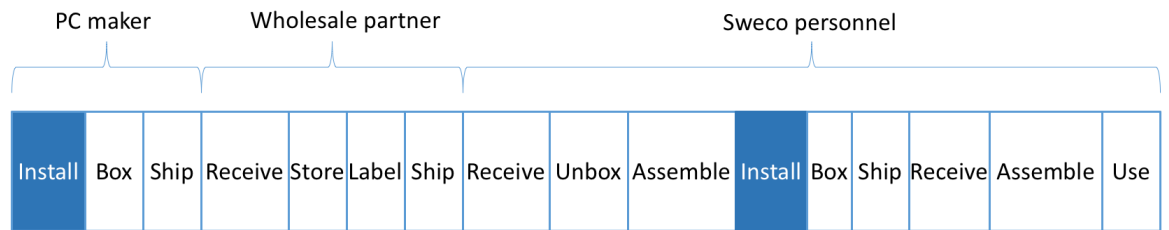


Figure 6: Non-value adding process steps

As there are several companies successfully operating on workstation pre-installation area, Sweco IT Finland sought to engage in collaboration with two players on the field to minimize the number of non-value-added steps and move the bulk installation work out from IT.

Two partner strategy was key right from the beginning, as it was thought that by having more than one wholesale partner would create a competitive setup that would keep competing parties hungry and eager to gain bigger foot print in Sweco workstation deliveries.

2.2 Research questions

How to include Voice of the customer in defining the set of approved applications

- How to increase customer's control over what is being delivered

How to deliver workstations as efficiently as possible

- How to minimize variance in installation process

2.3 Scope

Scope of the effort is limited to Sweco IT Finland and its area of responsibility in Finland.

Software installation related package creation is not in scope of the thesis. Processes described trust that packages are tested and function as expected.

2.4 Stakeholders and organization

Effort stakeholder groups were:

- Business Unit software coordinators representing all Sweco Finland's users in business units,
- wholesale partners,
- IT Service Desk Agents in Finland, and
- IT management

Author has had a wide authority to proceed as seen fit and has been the main architect for processes and practices described.

There was no official organization set up for the effort, but it was executed as line work along with other daily Service Desk tasks. Guidance and opinions was sought for when appropriate from management and colleagues in other countries or units.

3 Theory

Solutions presented in this thesis are loosely based on lean thinking, especially the ideas of adding value and eliminating waste and author's previous experience on the subject matter.

Lean is based on Toyota's Toyota Production System (TPS) developed over several decades after World War II, and made famous outside of Japan by the books *The Machine That Changed The World* by James P. Womack, Daniel T. Jones and Daniel Roos in 1991 and subsequent book *Lean Thinking* by Womack and Jones in 1996. (Liker, pp. 20-25, Liker, p. 15)

According to Toyota there are seven, and according to Liker eight types of waste, which are: Overproduction, Waiting, Unnecessary transport, Over processing or incorrect processing, Excess inventory, Unnecessary movement, Defects, and Liker's addition, Unused employee creativity.

Parts that Sweco is interested is Waiting, Incorrect processing, Unnecessary transport, Unnecessary movement, Defects, and Unused employee creativity. Others are not applicable either due to Sweco's role in process or the way purchases are done.

3.1 Lean IT and Business Process Improvement

IT organizations with an expanded role can act as glue between business organizations and a catalyst in business process development. Oftentimes organizations fall to thinking that implementing a technical solution will solve a problem. This can lead to no process development at all; old processes land on top of new applications and expected improvements or financial savings fail to be reached. Instead writers refer to Toyota's way of using cross-functional teams to fine tune the processes and only then consider introducing technical solutions. Members of cross-functional teams assume ownership of things they have developed and system implementation is likelier to succeed.

Information waste is less apparent than production waste, but it is common. When communication is not clear, complete and correct it is prone to errors or misunderstandings and waste is being generated by information requiring clarifications and corrections. Often corrections related activities are considered normal and there is active urge to find the root cause and eliminate the waste. Process owners are in charge of process improvement coordination. However, they often face situation where organizational silos prevent them from reaching their goals. Departmental (silo) goals are perhaps met, but still the entire value stream does not perform as it should. Instead of departmental goals, the entire value stream, what counts most to customer, and its performance should be measured and incentivized. IT professionals can contribute to process development with their knowledge on underlying system functions, expertise which otherwise wouldn't be available in development efforts.

IT organizations should try to find a good balance between efficiency and flexibility. Efficiency is for stable processes, standard procedures, predictable outcomes, minimal disruptions, elimination of waste, but that can lead to excess rigidity. On the other hand, flexibility is for adaptability, fluid processes and responsive procedures, voice of the customer. IT professionals need to keep this trade-off in mind when developing processes in order to find the right balance.

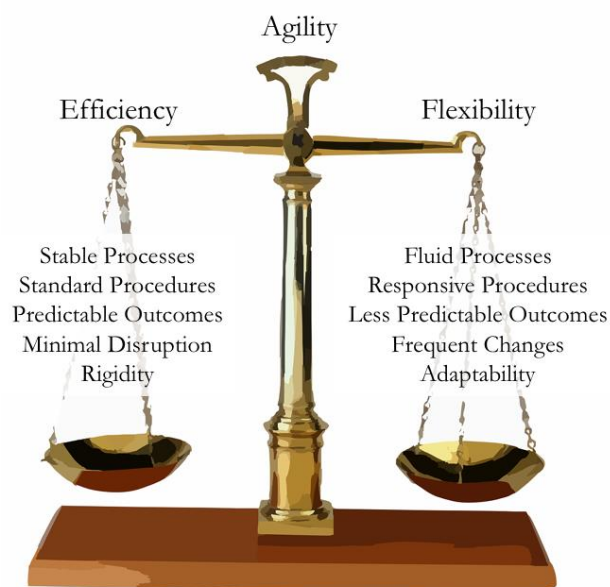


Figure 7: Agility is defined by balance between Efficiency and Flexibility

It is good to make a distinction between process and practice in efficiency-flexibility continuum. Processes are repetitive, routine and well defined standardized activities, not necessarily requiring experience, whereas practices are non-routine, variable, and require discretion and experience. Efficiency calls for processes, where flexibility calls for practice.

“Applying the 80/20 rule, simplifying and automating the 20 percent of core processes that account for 80 percent of the volume and burden can make a significant and immediate impact on efficiency, freeing up human capacity for practices that require experience and judgment.”

(Bell, 81)

Knowledge is mostly stored in minds of people and not documented. Then, when same work is carried out by two people outcome and execution is done differently. Also, when people leave, there will be a gap in organization's knowledge. But once the knowledge becomes documented and stabilized, it can be formed to become a process. A process can then be continuously improved and measured. How well organization's processes are defined can be assessed using Capability Maturity Model (CMM) by Watts S. Humphrey. (Humphrey)

CMM levels are

1. Initial
2. Repeatable
3. Defined
4. Managed
5. Optimizing

However, Bell & Orzen have renamed model steps to illustrate steps' characteristics (figure 8).

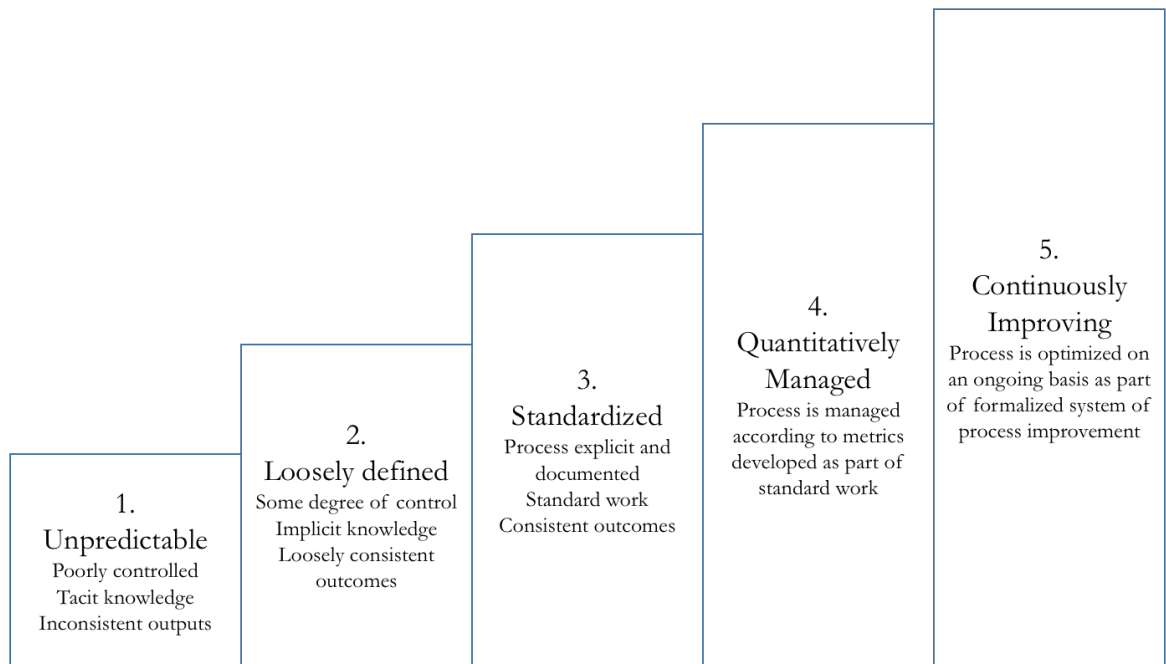


Figure 8: Renamed Capability Maturity Model (CMM) steps according to Bell & Orzen

Organizations should be striving to do things better and do better things. For that one should identify the process it wants to improve and benchmark that to its partner of a choice, either internal or external. However, the external parties should be leaders in that area in the field. To overcome the problem of competition, it may be better to try to find the collaborating partner from another industry. Using outside organizations may help in thinking out of the box and finding all new ways of doing things as all too familiar home organization, its processes and assumptions are not present. (Bell, 84)

Organizations should work hard to find measures that drive towards desired behavior. If measures do not support people in making a difference, or reasoning behind them is not understood, they become distraction from value-added work and become an annoying extra burden.

Measures should be both result and process measures. Result measures show in retrospect how well something went, as opposed to process measure that shows how well something is going. Process measures can act as a warning system to alert for course changes before problems appear. To achieve good balance between result and process measures, Bell & Orzen propose *balanced scorecard framework* (Robert Kaplan & David Norton: *The balanced scorecard: Translating strategy into action*) for combining measures that

follow internal and external perspectives, financial and operational performance, customer satisfaction, employee development and innovation.

Compliance is a special case among other measures. It is often seen as necessary, but not value-added activity, something that a regulator or other official instance requires, but which is not built into systems with such rigor as other measures. They can provide compliance reports but are often there to only satisfy the regulatory rule. Instead compliance should be built in and continuously improved within a process. Compliance is to be natural outcome of the process.

Business process improvement efforts can become complex and difficult especially in large organizations with several sites and divisions. To be able to make fact based decisions on IT investments and process improvements, the enterprise must work on identifying its supporting processes and how they touch one another. For that there needs to be a solid approach to keeping track of processes, categories they belong to, who owns them and how they are managed, modified and documented. There are several tools for those purposes, but tools do not make business process management success or failure, executive leadership and change management are the factors for success.

Bell & Orzen propose making distinction between supporting and innovating processes in order to bring clarity to how each process adds value.

Supporting processes are those that are needed but do not differentiate the company from competitors. Examples of such processes are payroll, accounting, or any other repetitive internal process. Supporting processes should be efficient and heavily standardized, and ideally eliminated altogether. Even if they are not eliminated, they should be maximally automated and standardized. Automation should be done with waste elimination as primary driver, not cost cutting. Waste elimination yields to same result, but without a strong negative signal to personnel. Waste reduction should be seen as “an opportunity to *free up human capacity and capability for value-added work.*”

Innovating processes are those that create what differentiates the company from vendors. They can be processes such as product or service creation. They go to areas

where the company has yet not been and finding the right outcome requires cooperation between various disciplines. Thus, innovative processes would benefit from similarly innovative IT systems that facilitate cross border collaboration and knowledge sharing.

3.2 Service Transition

According to ITIL Service Transition consists of seven sub-processes, one of which is Release and deployment management. The sub-process has two fronts to it: Customer facing and IT facing.

Customer facing front ensures customer engagement in planning the service so, that service content is understood and can be effectively utilized in daily business operations. Process ensures customer understanding to level where they can optimize their service usage to best support business goals and activities. Process also covers service content and change communication to customer and users (Axelos, Service Transition,114, 115).

IT facing front ensures there are technical capabilities to satisfy the needs that process is to satisfy. Package creation and testing as well as storing the packages in appropriate places is one objective of Release and deployment management IT facing front. Process aims at deploying the packages according to agreed plan, and that there are reasonable failsafe mechanisms should something unexpected appear. Process tracks issues related to deployments and initiates corrective actions, if necessary (Axelos, Service Transition,114, 115).

Both of these fronts are discussed in this study.

3.3 Continual Service Improvement (PDCA)

ITIL Continual Service Improvement (CSI) is an overarching stage for all ITIL phases. It reviews, analyses and provides recommendations to all services, also relating to itself. CSI guides organizations in ensuring service portfolio meets business needs now and in

future. CSI is a critical companion to an organization in measuring how organization meets its agreed targets and proposes recommendations for improvements.

Measurement is the core of CSI. For that purpose, there is a seven step improvement process defined (Axelos, CSI, 40). The steps follow the frame set by Deming's Plan-Do-Check-Act cycle. Steps identify the strategy and goals for improvement, and also define what will be measured (Plan). The following step collects the metrics data from the operations (Do). Subsequently the data is processed and analyzed (Check), and finally as a result of analysis an action plan is to be created for improvement implementation (Act). Once implemented, the loop begins anew.

Continual service improvement elements are built into the processes discussed in this study. Processes discussed have loose linkage to ITIL, but they can be modified for stricter ITIL adherence, should it so be decided.

3.4 Sourcing models

Characteristics of different sourcing models will not be gone through in detail in this study, as they are not in its scope and leasing as a model had been chosen earlier. However, it is worth mentioning that the selected model, leasing, differs significantly from make or buy especially at the end of the equipment lifecycle or leasing cycle. Where make or buy allow lax end-of-life practices, lease does not. Devices are property of leasing company and must be returned timely with accessories, that came with the original order. Knowing where the devices are is imperative for return activities. With make and buy timely return is not a major concern since there are no return related deadlines. Instead concerns relate to equipment warranties and performance.

Leasing efficiently prevents development of technical debt. When business is not doing well, it can be tempting not to invest in new equipment as the currently used seem to work just fine. However, at some point the renewal must be done, and the older the equipment is the risk for sudden malfunction, performance degradation, or even data loss increases. Also, an unforeseen malfunction results in lost work time and revenue, and creates extra work for support organizations.

4 Methodology

Methodology and the effort is based on what customers wanted to see on supported applications catalog. As Bell & Orzen state “Lean thinkers always ask, “What does the customer value, want, and need?” By understanding how customers and information system users define value, they position themselves to *begin with the end in mind.*” (Bell, Orzen, 26). Key questions to understand was “What do units want to see supported and installed in their computers, and how can they have better control over the content delivered?”. First version of process was created with that in mind. That version was a process frame that described the organization, routines and cyclicity, with only few details that would be needed once the process is ready. First version’s primary function was to serve as sales material used to selling the idea to management. After management’s initial approval the first working versions were defined and the key business unit representatives were involved in what was the first round of defining each respective unit’s application portfolio. Based on feedback from those sessions each unit’s portfolio governance routines were adjusted to suit unit’s needs. Some units felt the initially planned three month’s cycle is too short, and wanted to lengthen the period to six months, where some felt that, if possible, the adjusting should happen on as needed basis. Most units opted for periodically meeting with IT on the matter, even if portfolio as such was not in need of adjustments. It was felt that the discussions, nevertheless, are worth the time invested.

Voice of the Customer was always in the core of the development. However, IT did leverage its internal knowledge and channels to see whether there are similar solutions for the same area in use elsewhere in Sweco and perhaps challenged customers’ requests. In Sweco IT there is a role called System Management Leader (SML). There is one person nominated for that role in each application area. Application area expertise in IT is contained in respective area teams and one of the areas is Engineering IT. That is the biggest application area and the team is in charge of understanding the engineering area application usage within Sweco and drive common ways of working and leverage economies of scale on financial area and application architecture around their area. Engineering IT SML was nominated as a standard member from IT in portfolio governance meetings and he often brought the challenging aspect on the table.

Portfolio governance process follows loosely ITIL Continual Service Improvement Plan-Do-Check-Act approach with continuously meeting with customers, adjusting the process according to received feedback, and checking whether changes yield the aspired outcome. Process and its parameters are constantly refined as the process is never ready.

The method for technical solution creation was by planning meetings across the organization as well as ad hoc corridor discussions with experts from various areas of IT. Service Desk personnel was heavily involved as the outcome would significantly change their weekly agenda and they also possessed prior experience on pc and application installations. Also application delivery experts were consulted as well as security, who were the key IT stakeholders in seeing a solution being used that could safely allow user self-service application installation without jeopardizing corporate data and information security. One part of the fit for purpose solution was found by having deployment team build a self-service portal for users, and in addition by implementing a tool that safely elevates users' rights for safe installations.

Methods for feedback collecting were mostly informal as meetings were considered as peers meeting peers, but for this context a formal email was sent requesting specific feedback of what works, what doesn't and what participants would improve. The mails were sent to two groups: Business counterparts and Service Desk personnel. Mails and respondent feedback results are documented in paragraph 6.1.

5 Solutions

As there was no way of getting a list of applications from IT, author decided to create a process with which business units' representatives would tell IT what applications are in use and are needed. At the same time user self-service installation portal, developed elsewhere in IT, took its first steps and author put substantial effort in contributing to that too.

Key thoughts during the development of the solution were to maximize each process box's value add, increase Service Desk personnel job satisfaction, increase business units' visibility to what they have in their workstations and simultaneously give business better control in what software is in their workstations. It was also hoped for that company could better leverage economies of scale by making what we have visible and concrete to those negotiating agreements and deciding future directions on application strategies.

Chapter presents solution as it has been designed, not all functionalities are in place at the time of writing.

Solutions for the situation were created with what seemed to best make sense at that particular moment and based on team's previous experience of what was successful in the context. Some parts of solution were direct result of the effort, some were already on the development roadmap even without the wholesale partnering effort. This effort collected several separate procedures under one umbrella and created practices to areas where one was missing.

5.1 Maximizing process box value add

As described in figures 4 and 6, wholesale partners added little value in the process. They relayed further what was ordered, but did not refine workstations to be any closer to needs of a Sweco end user than what it was when it left the pc maker's factory. All value add between factory and user was achieved at Sweco IT. Author had freedom of

organizing workstation deliveries as he saw best. After a brief core vs. non-core analysis and with value add thinking it became clear that local IT wanted to move workstation unboxing, software installations, re-boxing and deliveries earlier in the process for wholesale partners to do. They had similar activities with other customers and had made workstation pre-installations their business while Sweco's IT, albeit successful in it, was doing it among other often more urgent things such as incidents.

In order to maximize the process box value-add, it was decided to outsource pre-installations to two wholesale partners and change IT's role from doer to overseer and facilitator. Thinking behind having two wholesale partners stemmed from the idea of making them compete in prices and quality in wanting to get Sweco's business to them.

For wholesale partners to be successful in their effort there needs to be a mechanism which feeds them with up-to-date content which aligns to what users and units need and order. As there was no official list in IT of officially supported software, author approached the problem from customer's side. A process, subsequently called Business Unit Software Portfolio Governance, was created and senior representation from each business unit was invited to partake. Each business unit Portfolio Governance team got an inventory listing of unit's current application set and based on that concluded their set of applications they wanted to see in their workstations. Having senior representation in the team ensured only important applications made it to the list, while less important fell out and the top manager inside the team could make the final decision on any software. Business unit Portfolio Governance team concluded their work periodically by reviewing their application set and communicating changes to that to IT, which channeled the updated set to wholesale partners to use.

Within the unit application set there were three levels:

1. Applications which get installed to all unit's users,
2. applications which are available for users to install at will from the installation self-service portal GetApps, and
3. applications which users can install at will from either a Sweco's internal disk share or from internet.

It was responsibility of the unit team to decide which level each application belonged to. An often used CAD application maybe a candidate for level 1, whereas some utility application could be either level 2 or 3, depending on the amount of usage.

5.2 Installation concept layers

Installation concept consists of three parts;

- A unit specific collection of applications, an “image”, that all unit’s user share and is similar to everybody within a unit,
- Application Catalog, nicknamed GetApps, from which additional installations are done, if image content is not sufficient for user’s needs, and
- Defendpoint tool with which the full coverage is ensured, allowing installations from any source outside of image or Application Catalog.

5.2.1 Image

Image is an application bundle with 80% of unit's applications preinstalled at risk of having some applications being on disk with no use. Business units have defined the content of the image, IT has built the image and delivered it to wholesale partner which installs the image to workstations.

Microsoft System Center Configuration Manager, SCCM is the repository for image creation, maintenance and delivery and each application within the image is a package of its own. These packages can be used as part of the image, but also outside of image context, such as Application Catalog.

5.2.2 Application Catalog

Business unit software governance team leaves deliberately some applications out of the image. The 15% of applications that are not preinstalled are covered with Application Catalog, also known as GetApps. The tool is a self-service portal from which users can install additional applications when needed. Having the tool those with old workstations can easily upgrade their application set to same level with those with a whole

new workstation, making unit level application version control easier. Application Catalog was soon nicknamed GetApps according to the URL leading to the tool in Sweco Intranet.

5.2.3 Defendpoint

There will always be applications that neither image, nor Application Catalog will cover. For some single user applications or trial installations it is not worth investing in packaging the application installations. Those applications that are not covered by image or Application Catalog can be handled with Defendpoint. Installation kits can be retrieved from internet or file shares and installed by users at will with elevated rights (in daily operations users do not have admin rights to their workstations).

The following figure (figure 9) was used in several occasions to explain the installation concept and its layers. was explained to an interest group of 100 users on May 10, 2016 with the following illustration (figure 9).

Application installations

- No more IT Service Desk requests
- User can install applications whenever needed
 - Majority of applications preinstalled on workstation when delivered from supplier
 - Only minor part of applications need to be installed separately
- Application version coordination and permission procedures internal to Business Unit
- Basic installations bypass IT completely
 - Only in extra ordinary cases IT is involved
- Each unit has a portfolio of its own, i.e. set of applications
- Big part (80%) of applications in portfolio on "image" – unit defines what is in portfolio and image
 - Image preinstalled in workstation when it arrives from supplier
- Delivery approach
 - 80% on image (=preinstalled)
 - 15% self service via GetApps
 - 5% with Defendpoint elevated temporary admin rights
 - Workstations can be delivered direct to users, IT no longer needed as middle man
- Additional installations by user, coordinated by unit or user, whenever
- Existing workstation updates thru GetApps
- The above does not take away the option of doing things the current way, but permissions to installations need to come from the Unit

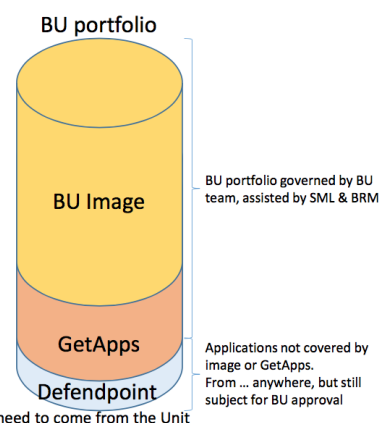


Figure 9: Sweco internal communication material on concept structure and approach

5.3 Process description

Process inner circle is the core of the process, mainly concentrating on user getting what they need. A well maintained workstation renewal cycle forces the organization to follow equipment whereabouts and renew equipment periodically. However, that is

prone to being neglected when units need to find saving opportunities, thus potentially creating technical debt. That cannot happen with leasing. Process steps after “Deliver” on the outer ring mainly relate to leasing. In “Buy” sourcing mode the same can be applied, but the nature of the model allows it to be less rigidly followed as there is no business partner requiring hardware to be returned for further use.

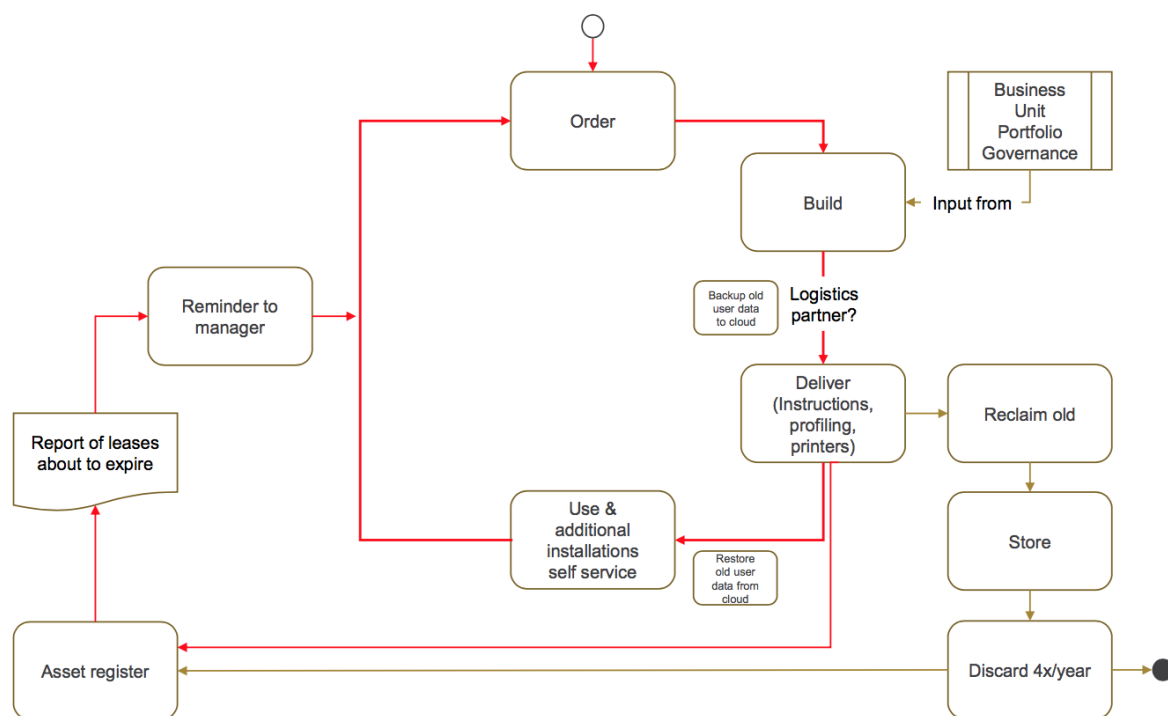


Figure 10: Process description

5.3.1 Order

Ordering a workstation is triggered by need for a new workstation. Typically that is due to a new employee joining the company, or an old workstation reaching its leasing expiration or end-of-life. Leasing expiration follow-up is described in chapter 5.5.

User of the new workstation, or manager of the new hire, orders the workstation thru user self-service portal. In the portal the orderer can see a predetermined selection of workstation packages available, makes a selection and selects the configuration details.

Once order is submitted, the user’s manager receives an approval request for the order, and once it is approved the order is further delivered to the wholesale partners.

5.3.2 Build

Sweco has provided the select wholesale partners application servers, which are connected to Sweco's network and fed with Sweco's SCCM software packages by Sweco IT Deployment team. Each server is identical and workstations can be ordered from the one wholesale partner that from competitive perspective serves Sweco best.

Wholesale partner picks the hardware from Sweco specific buffer and builds the configuration based on the order and install the ordered Business Unit image and additional software in the device. What gets installed is described in detail together with Business Unit image content governance in chapter 5.4.

Shipped workstations are labeled with workstation identifying stickers with information on workstation name, warranty expiry and lease expiration along with Service Desk's phone number and what to do when a defective disk is encountered.

Functionalities being worked on: While the workstation is being built, an incremental backup runs on the about-to-expire workstation until the delivery and backs up select content from user's local disk and its subfolders to a temporary network disk that is only accessible by the user.

Prior to shipping wholesale partners to equip the workstation with "Congratulations on your new Sweco Workstation" document [Appendix 1], which describes the user's configuration and the first steps in preparing the setup for productive use

"Reclaim old", "Store", "Discard 4x/year" are phases where the old workstation is taken from user and stored on site for leasing company retrieval four times a year. Site's leasing return activities are coordinated in cooperation with IT Service Desk and local IT contact person.

5.3.3 Deliver

Delivery to major sites goes through IT Service Desk. There service desk agents unbox the workstation and contact user to agree the delivery time and old workstation re-claiming. For small offices the delivery is sent direct to users and they unbox and install workstations by themselves. IT targets to gradually deliver all workstations direct to users.

Once user has logged in the computer and attempts to launch email, the setup automatically detects user's mailbox and prepares it for use. For printers there is an intranet site which contains a script for setting up all necessary printers. When mail and printers are set, user is ready for productive use with applications already on the disk. Should the user need additional software, acquiring and installing those is described in "Use & additional installations self-service" chapter.

Functionality being worked on: Any additional files needed from old workstation can be found from the user's temporary network disk for next 30 days. Backup in the background enables IT to use third parties or personnel with less IT experience in actual workstation delivery phase as that is limited to unboxing, loading on desk of the new workstation and taking away the old one.

5.3.4 Use & additional installations self-service

Use phase lasts three years in most cases. That is the length of a full leasing cycle. During that time all workstations are covered by manufacturer's on-site warranty. Should the device become defective and Service Desk can't repair it, the next business day warranty ensures maintenance within 24 hours.

Standard users in Sweco do not have administrative rights in their workstations. When they need additional software they can install the Sweco approved software from end user interface built on top of Microsoft System Center Configuration Manager (SCCM). For Sweco users the interface has been named GetApps. Sweco IT stores all packages in SCCM and make them available to users via GetApps. GetApps is also a

tool for Business Unit Software Coordinators to which they can instruct users to go to obtain the latest version of a software being used.

Should there be need for non-packaged software, either from within Sweco or from outside, users can obtain the installation files from wherever and install the software with Defendpoint assisted elevated rights. Defendpoint is a tool used to temporarily elevate user's rights to administrative level for the installation to succeed. Sweco's anti-virus mechanisms and Defendpoint policies prevent unauthorized and malicious software from being installed. Users are not authorized to install any software they wish, but are instructed to ask permission from Business Unit Software Coordinators.

In "**Asset register update**" leasing asset register is updated to reflect the equipment current situation. Items no longer in use are marked, and new item data is updated with user information. Should any part of leasing data be incorrect, it will be updated.

5.3.5 Report of Leases About to Expire

Service Desk runs a report every three months listing the equipment about to expire. Listing contains names of users and their expiring workstations. The list is sent to managers whose teams expirations affect, and they are requested to initiate replacing order process within their teams.

5.3.6 Reminder to manager one month prior to expiry

Report of leases about to expire is sent to those managers on the list with a request for action to agree with team members the next steps. Manager and team member need to agree whether the lease is extended another 3, 6, 9 or 12 months or a new workstation is ordered. Sweco IT recommends ordering new workstation as warranty will run out at the end of original lease and within the leasing period new and more powerful workstation models have been introduced.

Should no action be detected in Self-Service Portal regarding replacing orders, Service Desk agent contacts the manager requesting the ordering. Should there still be no action, the workstation is put on three month's lease extension and the workstation will be subject to same routine three months later.

When the order is being made, process has started anew.

5.4 Governance Model for Software Portfolio Management

Business Units had differing needs for software applications and many of those were purchased directly from wholesale partners with little coordination with neighboring units or IT. That model was potentially missing negotiation opportunity on software pricing via bigger volume purchases and harmonized ways of working.

A model was created where each unit formed a team that had mandate over unit's set of applications. Teams include members from senior management and application areas, thus securing capability to make balanced decisions on unit portfolio content.

Over time the model can evolve to one where IT's presence potentially can be small; Business Units define image and workstation contents, and wholesale partners deliver according to specification. IT's role can increasingly be that of facilitator and process owner and developer.

Each unit's portfolio governance team convenes periodically to agree what is to be available for unit's users and what the unit image content is to be. The outcome is relayed to IT for further processing, image maintenance and delivery to wholesale partner.

5.5 Leasing return automation

Leasing returns consists of two parts; initiating ordering of a new computer and actual delivery of a new workstation while simultaneously reclaiming the old for recycling.

Leasing requires a rigorous method for reclaiming a computer from a user at the end of its leasing cycle. Companies pay all leasing costs directly, so computers are considered their property and in principle they are free to move the equipment from one user to another as they see fit. Thus within a three year leasing cycle a computer may have moved from the original user to another without IT becoming aware of the situation. Even if units are strongly encouraged not to move computers from one user to another without informing IT, there are situations where workstation is difficult to locate.

5.5.1 Ordering

When there is one month to go to leasing expiration, team leaders with team members whose computers were about to expire receive a message from IT attached with a report from leasing asset system of IT's information of computers whereabouts, i.e. the most recent user, and a request to agree with the team member of ordering a new computer.

6 Does the Process Work?

Along the development there have been several meetings with various business unit representatives. The early meetings were with units that were most eager or available for sparring the concept. Those early meetings were also warmups for unit representatives to get an understanding of what the process is all about, while at the same time for IT they were polishing operation for process running practices.

True round of portfolio walk through and listing was held between Aug 2016 and Nov 2016. During that period IT first provided units the latest listings of units' users workstation contents, and unit coordinators refined the listing to indicate which application should go in the image, which was to be packaged, but not go in image, and which were used but to be obtained from either Sweco's disk share or Internet.

Sessions were held with Sweco Architects, Sweco Environment, Sweco Building Systems, Sweco PM, Sweco Expert Services, Sweco Structures, and Sweco Industry and plan forward was agreed with each unit. Unit practices and application listing is published to all users in Sweco intranet. Each unit coordinator has assumed responsibility to maintain the published listing. It was well understood by everybody, that it is in everybody's interest that the information is accurate as that page is referred to by several organizations and it helps units in ensuring homogeneous application usage. Also, users would have only one page to look at when there is anything in their minds regarding used applications and where to get them.

Units had very little needs that would have differed from the neighbor's. Unit portfolio review cycle was documented on the intranet page along with the date for next review. Six months became a practical standard. At that point there was discussions of occasional need for fast lane application deployment. As such always are case by case things and process participants had become acquainted during the development, it was stated that it will be easy to accommodate such a need via the informal network.

Biggest issue was finding the right balance of applications for Building Systems. Their works is very heterogeneous and having only one image per unit proved to be problematic. However, for that it was agreed that an effort will be made to survive with one, and should that no succeed IT would reconsider the image related rules.

Process quality and fit for purpose was examined by sending surveys to two different stakeholder groups; Customer management, i.e. Business Unit software coordinators in Business Units and Service Desk Agents.

Business Unit software coordinators and Service Desk Agents both were asked the following questions:

- Does the process work a) better, b) equal to, c) worse than earlier?
- What works poorly?
- What works well?
- What would you improve?

The survey questions are in Appendix 2.

IT Management perspective was collected with an inquiry to Sweco IT Finland Business Relationship Manager (BRM), who is in charge of IT delivery in Finland. Format of the inquiry was a free form email message.

6.1 Response summary

6.1.1 Business Unit software coordinators

The below summarizes seven of the eight responses. The eighth is an elaborate answer, which deserves its own summary due to its level of detail and amount of comments. That summary has its own chapter after this. The analysis of the responses will follow in chapter 6.2. Survey responses are in Appendix 3.

Question 1: Does the process work a) better, b) equal to, c) worse than earlier?

“This system is good and works better than the old ones. Now we can decide our applications on the business side with the boundaries set by you [IT] and we can hopefully get to harmonize the application usage within personnel. Transparency is also a good trait in this set up. In addition, the Defend-point concept guarantees that no project gets stuck with when IT can install an application that is requested via a ticket.”

“Process works well and it is going to better direction, so perhaps a).”

“Works as well as earlier. In future (when we have listed all applications that re to be installed) most probably works even better.”

“In future most probably works even better when the number of installations decreases/installations get easier (due to SCCM).”

Works better. There has been very little feedback (if there is no feedback, it will be interpreted as positive).”

“New process will be more efficient once it is in use in its entirety.”

Question 2: What works poorly?

“There isn’t necessarily anything that works poorly, but we do have noticed that information about applications is scattered to many places, and creating a summary of needed applications has required some

digging. On the other hand, that is a good thing, for now we get the really right versions of applications in use.”

“I can’t say what would work poorly. All necessary programs have been installed and our wishes are listened to also.”

“Perhaps separation and informing of applications that are not free or incur costs is lacking.”

“It is not yet clearly visible whether something would work poorly. / Hidden software/installations one may have to wait.”

Question 3: What works well?

“See previous comments”

“It is good that one doesn’t have to be logged in as administrator when installing. Also, if admin is needed I have such an account.”

“We have received help when needed.”

“Software installation hassle loads less, because anyone can proceed whenever there is a need for software.”

“User gets to install applications by themselves, instead of having to wait that someone does it for them via tickets.”

Question 4: What would you improve?

“Once we get the machine update process to same level, this will be good!”

“Difficult to say, but direction is good.”

“At this point so little experience, that it is difficult to comment.”

“Can’t think of anything to change.”

Some comments were not direct answers to any questions. Those are:

“Package creation has started to work better after the stiffness in the beginning.”

“I do not know how the current image serves the users or IT. I presume there are many applications being installed manually on top of the image.”

“What I have seen looks very good and well-functioning.”

“All processes work better than earlier.”

“Application availability for example on scheduling applications is more of an issue than installation / governance process”

“Two things might require clarification:

What software user may install from outside of the Confluence listing? That s/he asks permission from who?

Who are the SML’s for each application family in ICT?”

6.1.2 Most elaborate business unit software coordinator response

Question 1: Does the process work a) better, b) equal to, c) worse than earlier

“Application portfolio governance process at least for now works worse than earlier, practices have not established yet.

Application installation process at least for now works worse than earlier, experiences and feedback of self-service installations functioning is, however, sporadic.”

Question 2: What works poorly?

“Application portfolio governance process:

Updated application versions end up on image slowly, causing new out-of-the-box workstations being immediately out-of-date, causing immediate need for updates to a new computer.

Having only one image per unit causes ad hoc solutions, which in turn slows down taking a workstation in use, which in turn increases overhead and expenses in workstation switching situations

Application packaging is done by several people -> package creator does not understand the environment where package will be used -> resulting package is not always as expected.

There is stiffness of a large organization in activities -> requires a lot of instructing from business, sometimes many times of same things when support person changes -> instructions have not always been followed.

Earlier business unit’s nominated support people had the control, packages were done mainly by same people or supplier’s packages were used directly. Powerful growth has, of course, changed the situation. Old practice might not work anymore in this magnitude.

Application installation process:

Getapps application offering is still lacking, obviously it will improve over time. No experiences yet of how the solution works in practice. Process of how applications can be put in getapps is not yet quite clear.

There is a risk in user initiated software installations, that possible installation problems cause a longer interruption in work (Waiting time when old application no longer works and and if new will not install).

Earlier installations were done by unit specific named IT support people who knew the business well and even an office’s special needs and unit specific application environments. Installation went usually in in one session with location specific settings without user participation when installation was done by a person with sufficient rights for actions also in possible error situations.”

Question 3: What works well?

“Application portfolio governance process:

Will standardize in future workstation environments if process becomes streamlines and straight forward / react with satisfying delivery times.

Application installation process:

If Getapps works reliably with Swecos’s protection practices (also as they change over time) it is expected that the tool streamlines and speeds up installation process and saves everybody’s work time. Each one can do the installation when it best suits the work situation.

Question 4: What would you improve?

“Application portfolio governance process:

Clear responsibilities and contact persons are to be defined in both ends (Business – Business support). Now it is not quite clear who at the end is in charge and of what on the business support side (at least to me).

Application installation process:

A named IT Support contact person + a possible backup person for this for application installation problem situations would speed up end user problem solving when possible installation problems emerge.

Alternatively, Service Desk’s response times in installation problem situations be such, that user is not alone with his problem, but gets immediately at minimum information of when and from whom he will get help and gets an opportunity to express his need’s urgency from project work perspective. Timing of self-service installations may become a problem, as they may happen outside of support organization’s standard office hours for the reason that they can’t be done during standard office hours due to project work. Support availability in emergency situations in evenings/weekends should somehow be ensured.”

6.1.3 Service Desk Agents

Question 1: Does the process work a) better, b) equal to, c) worse than earlier?

“Better”

“Process works better.”

“History is not clear to me on all aspects, but I would say it works better. Or, that the process gives more alternatives than earlier and the direction is the right one.”

“I cannot estimate whether the process works better than earlier, but even with my short period of being here it has felt like the process has got clearer and is going to a more streamlined direction.”

Question 2: What works poorly?

“Ownership: Only a small part of applications has a clear owner.

Portfolio governance: The users’ freedom to install in practice any applications in their workstations with Defendpoint will make software distribution and governance more difficult in the long run.

Package request slowness: Deployment Delivery time estimate raised to 50 days!”

“Adding applications in GetApps works slowly. It would, of course, require more resources to be more efficient.”

“There would still be a lot to develop in how users would get at least basic application “with a snap of a finger”.”

“At the moment the challenges seem to be in the communication between Finnish Service Desk and Deployment, a wrong version may have appeared in Application Catalog or the package doesn’t work, among others.”

Question 3: What works well?

“Cooperation with business representatives (portfolio owners) has begun well. It has been easy to cooperate with them.”

“GetApps and Media Library on general level work fine. Standardized folder structure makes things clearer.”

“GetApps”

“At the moment images and application catalog packages are mainly in operation and up-to-date, which makes installing applications easier. Units have been well with in listing and making their software needs clear.”

Question 4: What would you improve?

“As much applications as possible to image / application catalog.”

[An out-of-scope comment omitted.]

“More software in GetApps. For applications, that require approval, there should be an easy and understandable way to proceed (kind of in GetApps press request, manager presses somewhere approve and user presses install. I guess this has been the target, but there is still a lot to do.

Of course there will always be sporadic applications, that are installed manually. At this point it should be agreed who approves the installation – is it always the portfolio responsible or will there be exceptions, and so on...”

“The job is still in progress, but same clarity first from units to IT about software needs and then fast action from Deployment in getting working and timely packages available to users.”

6.2 Response analysis

Business Unit software coordinator questionnaire was sent to all ten coordinators out of which eight responded.

Majority of responses were on a positive note. It was often mentioned that it is too early to say anything definite, but the direction is right and the plan and experiences so far looks promising. Critique was towards information being scattered. Freedom from IT dependency in installations was a good thing, according to a technology director.

Also, the effort has been considered a healthy thing to do as it has required units to do thorough investigation of what really is in use.

Based on comments it is obvious that process details and roles and responsibilities are not fully understood. Process gives full authority and responsibility to units to decide what can and may reside on devices, yet there is a question related to that in responses.

IT's recent changes in organizing and operating has hit some organizations more than others. Also the characteristics of organizations differ a lot – some use primarily out-of-the box applications where some have tightly integrated application architecture to which IT's new mode of operation may be an over simplification. IT should give closer look at such organizations and see how to find a balance between standardizing environment and being flexible and alert to organization's needs.

Service Desk questionnaire was sent to nine agents out of which four responded.

General note was positive, but more critical than from unit software coordinators. Almost all Service Desk agents are involved in software installations, so their comments were mainly on that front and pertained to IT internal tools. GetApps, i.e. Application Catalog, portal for users' self-service application installations was Service Desk Agents' main theme. There were only brief references to the application portfolio governance process.

Service Desk agents feel that the process works better and the direction is good, but software packaging organization, Deployment, lacks in capacity to provide packages in timely manner. That same comment came from the business unit coordinators.

One respondent noted that portfolio governance will become challenging as Defend-point will allow most any application to be installed by user. That is an issue that is addressed in paragraph 7.2.

Almost unanimous message from Service Desk agents was that application self-service portal GetApps should be utilized as much as possible and package lead time must significantly come down.

Both stakeholder groups have high hopes for the processes, but IT needs to polish the Application Catalog processes and speed up application package creation.

7 Conclusions

7.1 Answers to research questions

How to include Voice of the customer in defining the set of approved applications

- How to increase customer's control over what is being delivered

During the course of the effort a process has been created where IT closely couples with customers and listens to customers' wishes. All customer units have a forum in which they can have their say in workstation configuration. All customer wishes are analyzed, and challenged when necessary, and effort is made to understand which actions would have the furthest reaching positive consequences in financing or labor terms.

Level of automation has improved and there are less and less unwanted tailor made solutions.

How to deliver workstations as efficiently as possible

- How to minimize variance in installation process

With the new process all units have their own set of applications bundled to a unit specific image, which is same to all users within the unit. That image is installed to all unit's workstations by companies that specialize in wholesale and installations. Number of custom built workstation contents has decreased.

Wholesale partners deliver workstations either directly to users or at larger sites to IT. In either cases the number activities and time spent from there to productive use have decreased.

7.2 Further Development Suggestions

Once it can be stated that the processes described have become parts of standard procedures, the following issues may be worth considering as next steps in improving the procedures.

A virtual machine per unit with which users and units' image owners could do image testing prior to large scale launch. Current method trusts that applications have been sufficiently tested somewhere, but there is no way of getting a holistic understanding of what the environment truly is like.

Wholesale partners to include a two meter Ethernet cable to replace the old cable in all situations.

Model allows for various logistics methods; internal personnel or someone from a third party. Once the time is right and the organization has learned to live with the new model it would be natural to completely relieve IT personnel from workstation deliveries and buy that as a service from an outside logistics partner.

Workstations could be categorized by their performance or by functions they are planned for. Burden for ordering a replacing pc can be alleviated by automating replacements so that a user would automatically get a pc of same category unless otherwise explicitly expressed.

Sweco workstations are covered by warranty for the full duration of leasing cycle. Also those workstations that were purchased prior to leasing mode are covered with similar warranty. Thus any workstation which is out of warranty is a candidate for being replaced. A pull mechanism can be created where workstations that are closing in on warranty expiration would automatically, without a separate manager purchase approval, be replaced with workstation of same performance category. Having management approval for such a mechanism would significantly ease IT's pressure in timing the workstation switching.

Lean pull: Establish automatically triggered routines with which users' workstations are renewed automatically. Automated process triggering from asset database when lease expiration is closing in, combined with preapproved ordering and same category workstation delivery potentially improves process invisibility to business users.

Scope of the effort has been Sweco IT Finland and its area of responsibility. However, processes are designed so that they survive in other operational models also. Thus the processes represented can be applied on global scale.

In governance process to make clear what users may install and IT to periodically provide reports of workstation alignment to unit portfolio. Report to reveal how workstations deviate from Unit coordinators' intended configuration.

Process and the way of working is closely followed in Sweco in other countries and there are initiatives that closely relate to this effort. Those efforts analyze whether there is a need for a similar process in other countries and what local leeway there is to be given.

7.3 General reflections

Two player strategy from the beginning has ensured all practices are built so that there are no big wholesale partner specific deviations in practices. Some manual practices vary, but on high level processes are the same.

Sweco IT Finland is well on its way on standardizing workstation deliveries to suit the needs of the customer. All elements are in place and there are no obstacles for full user self-service in software installations from technical perspective. Each customer unit has an opportunity and mechanism to influence the contents of workstations used in unit.

Procedures and thinking is known in units, but concept's true essence and freedom users have is yet to be understood.

Change management and related sales activities are still to be done. Also continuous improvement practices need to be hardened within IT and with customer organizations.

In workstation deliveries IT's role as a facilitator is well within a reach.

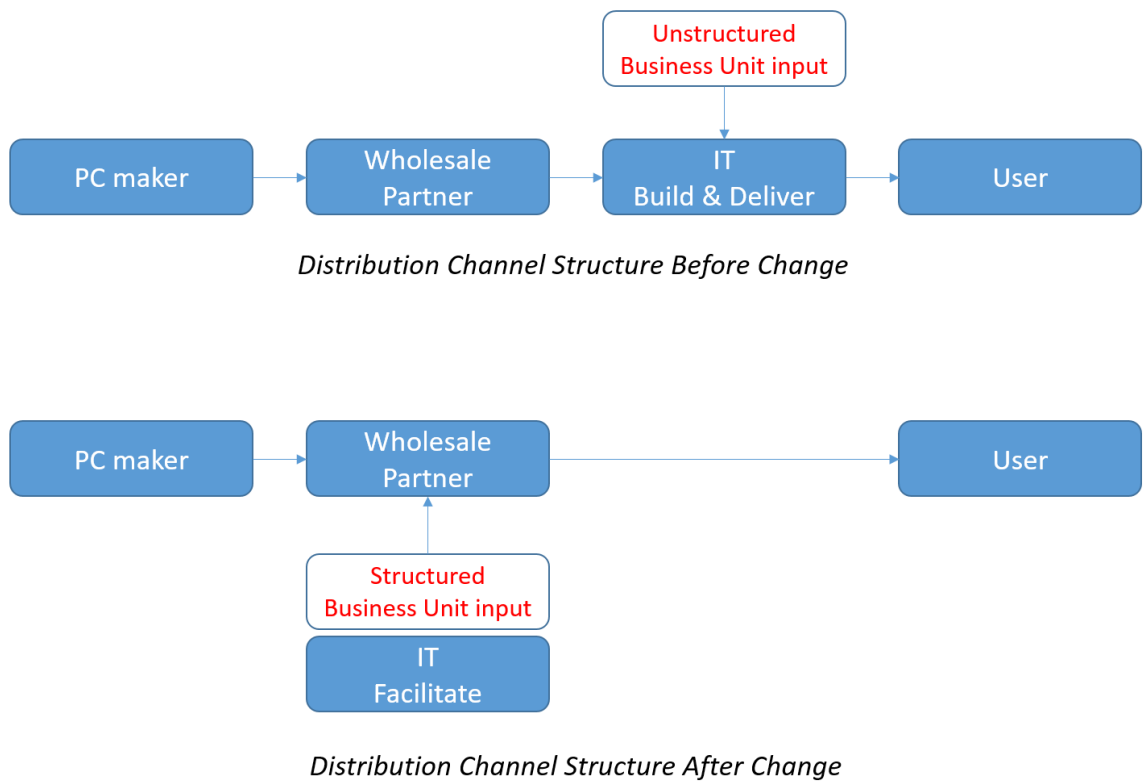


Figure 11: Process structure before and after change. Build & Deliver moved to wholesale partner, Business unit input structured.

There is no official audit made, but as an author and insider to the work done, my personal opinion is that Sweco IT's workstation delivery process began from CMM level 1 and now it is about to climb to CMM level 3.

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Appendices

Appendix 1. Congratulations on your new Sweco Workstation -document

The attached document describes the to be user documentation included in new workstation shipment.

UUSI SWECO-TYÖASEMA – Ohje nopeaan aloitukseen

v201602

Onnea uuden Sweco-työaseman johdosta

Olet nyt saanut uuden Sweco-työaseman, jonka avulla uskomme työsi hoituvan entistä tehokkaammin.

Ennen kuin voit aloittaa työaseman käytön, tulee sinun suorittaa muutama toimenpide. Niiden suorittamiseen menee muutama minuutti, joten tee ne heti kun olet asentanut työaseman käyttökuntoon.

Huomaa, että kaikki alla kuvatut toimenpiteet tulee tehdä Swecon konttorissa. Kariutuessaan kotona tehty yritys saattaa aiheuttaa työläitäkin ongelmia ja hidastaa tehokkaaseen työhön pääsemistä.

Toimi seuraavasti:

Varmista, että olet kytkeytyneenä Swecon verkkoon aiemmin toimivaksi todetulla Ethernet-yhteydellä.

Kirjaudu koneeseen käyttäjätunnuksellasi (etunimi.sukunimi@sweco.fi).

Uusi työntekijä huom: Esimiehesi on toimittanut sinulle käyttäjätunnus-salasanayhdistelmän. Vaihda salasanasi ensimmäisellä sisäänkirjautumiskerralla. Jos tunnus ei ole käytettävissäsi, soita IT ServiceDeskiin, puh 0207526040.

Tehtaalta lähetetyssä työasemassa ei ole sähköpostejasi valmiina, joten kone pitää ns. profiloida. Käynnistä Outlook-sähköpostiohjelma painamalla näytön vasemman alakulman Windows-logoa ja kirjoittamalla "Outlook" + paina <Enter>. Outlook kytkeytyy automaattisesti Swecon verkkoon, tunnistaa sinut ja alkaa profiloida sähköpostia. Saat näytölle ennalta täytettyjä kysymysvaihtoehtoja ja ainoa mitä sinun tulee tarkastaa (ja virheen sattuessa korjata) on aloitusnäytöllä ehdotettava sähköpostiosoitteesi. Kun olet varmistanut sähköpostin oikeellisuuden, paina oikean alakulman "Next"-näppäintä kunnes profilointiohjelma on suoritettu loppuun. Lopuksi Outlook avautuu sähköpostin saapuneiden sähköpostien näkymään. Nyt profilointi on suoritettu.

Paikallisten tulostimien asennus: Sähköpostissasi on tämä viesti odottamassa otsikolla "Onnea uuden työaseman johdosta". Kun olet valmis asentamaan tulostimet itsellesi, avaa sähköposti ja paina <http://intranet/fi/Inside-Sweco/Tukipalvelut/IT-palvelut/Ohjeet/Paikallisten-tulostinjonojen-luonti/> ja toimi avautuvan ohjeen mukaan.

Mikäli työasemastasi puuttuu tarvitsemiasi ohjelmistoja, tutustu osoitteeseen <http://getapps/>. Sieltä löydät Swecon Application Catalogin, josta voit käydä tekemässä tarvittavat lisäasennukset.

Olet nyt saattanut työasemasi käyttökuntoon. Onnea ja menestystä uuden työaseman kanssa. Toivomme sinulle ongelmattomia työskentelyhetkiä uuden työasemasi kanssa.

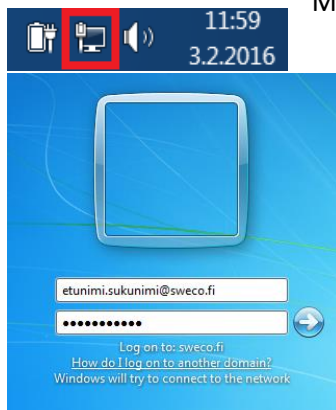
terveisin,

Sweco IT FI

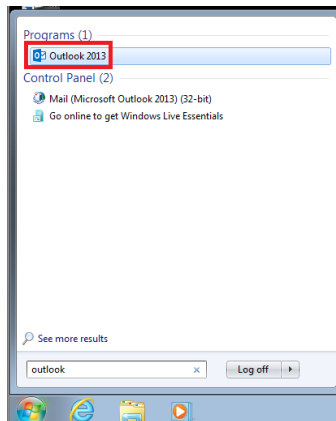
Tehtäväketju vaihe vaiheelta:

Varmista näytön oikeasta alalaidasta, että työasema Ethernet-johtoyhteydellä kiinni verkossa.

Mikäli oheinen symboli ei näy, ei verkkojohdossa ole signaalia.

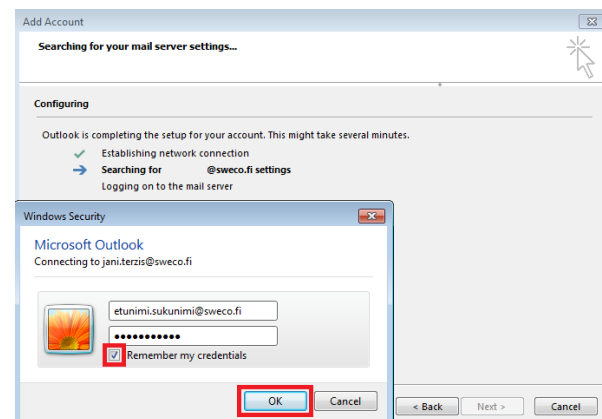
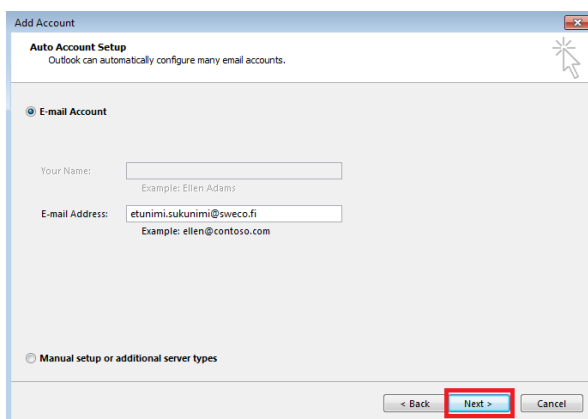
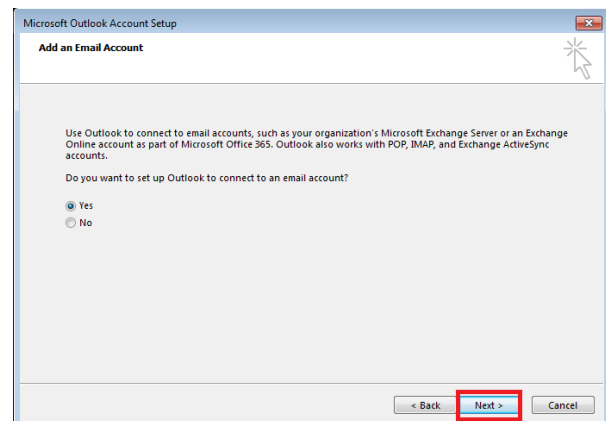
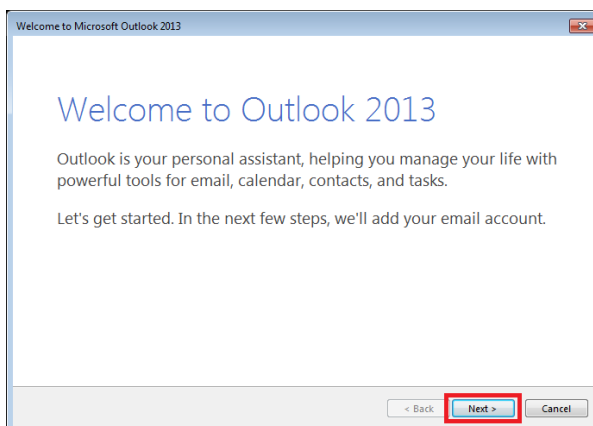


Syötä näytölle sinulle toimitettu käyttäjätunnus/salasanayhdistelmä:

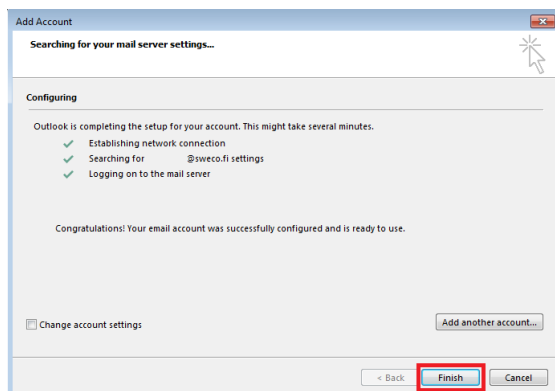


Käynnistä Outlook-sähköpostiohjelma. Kirjoita vasemman alalaidan Start Menun tekstikenttään Outlook ja valitse Outlook 2013 (tai 2016)

Ensimmäisen kerran käynnistyessään Outlook profiloii sähköpostisi. Oletusasetuksiin ei ole syytä puuttua. Tarkasta kuitenkin, että profiloinnin kolmannen näytön ehdottama sähköpostiosoiteesi on oikein (eli vastaa tunnusta jolla kirjauduit koneelle sisään).



Kun olet painanut ”Finish”, on sähköposti profiloitu.



Voit nyt määritellä tulostimet.

Appendix 2. Original survey questions

Original survey email sent to Business Unit software coordinators:

From: Kuparsaari Antti

Sent: 25. marraskuuta 2016 10:34

To: Kuparsaari Antti <Antti.Kuparsaari@sweco.fi>

Subject: Arviointipyyntö -- IT:n ohjelmistokoordinointi ja -asennusprosessi

Importance: High

Jakelu: Kaikki liiketoimintayksiköiden ohjelmistokoordinaattorit (Hiltunen, Hämäläinen, Jaakkola, Laurila, Nikula, Pekkinen, Sahala, Salminen, Siljander, Väisänen)

Hyvä vastaanottaja

Sinä tai tiimisi vastaatte liiketoimintayksikkösi ohjelmistokoordinointiprosessista yhdessä Sweco IT:n kanssa.

Osana ylemmän ammattikorkeakoulun maisteriohjelman päättötyötäni analysoin Suomen Swecossa käyttöön otettavaa ohjelmistojen hallinta- ja asennusprosessia. Tähän tehtävään toivoisin sinulta vastauksia muutamaaan kysymykseen.

Tehtäväsi olisi arvioida yksikön

- sovellusportfolion hallintaprosessia sekä
- ohjelmistoasennusprosessia

Koska työ on vielä kesken, arvioi prosesseja sellaisina kuin ne on sinulle kuvattu tai kuten olet ne ymmärtänyt tai kuten olet käytännössä nähnyt niiden toimivan.

Kysymykset joihin toivon vastauksiasi maanantai-iltaan 28.11.2016 mennessä ovat:

- Toimiiiko prosessi a) paremmin, b) yhtä hyvin, c) huonommin kuin aiemmin?
- Mikä toimii huonosti?
- Mikä toimii hyvin?

- Miten parantaisit prosessia?

Vastaukset käsitellään nimettöminä ja luottamuksellisina eikä vastaajan henkilöllisyys välity opinnäytetyöhön.

Avustasi etukäteen kiittäen ja mukavaa viikonloppua toivottaen,

Terveisin, with regards,

Antti

Antti Kuparsaari

Osastopäällikkö, Manager, ICT Support Services

Mobile +358400445225

antti.kuparsaari@sweco.fi

Sweco Finland Oy

Ilmalanportti 2

FI-00240 Helsinki

www.sweco.fi

Please consider the environment before printing this e-mail.

Original survey email sent to Service Desk agents:

From: Kuparsaari Antti

Sent: 28. marraskuuta 2016 10:21

To: Kuparsaari Antti <Antti.Kuparsaari@sweco.fi>

Subject: Arviointipyyntö -- IT:n ohjelmistokoordinointi ja -asennusprosessi

Importance: High

Jakelu: Sweco IT FI ServiceDeskin henkilöstö

Hyvä vastaanottaja

Sinä olet tavalla tai toisella osallisena Swecon Suomen työasemaohjelmistojen hallinta- tai asennusprosesseissa.

Osana ylemmän ammattikorkeakoulun maisteriohjelman päättötyötäni analysoin Suomen Swecossa käyttöön otettavaa ohjelmistojen hallinta- ja asennusprosessia. Tähän tehtävään toivoisin sinulta vastauksia muutamaan kysymykseen.

Tehtäväsi olisi arvioida yksikön

- sovellusportfolion hallintaprosessia sekä
- ohjelmistoasennusprosessia

Koska työ on vielä kesken, arvioi prosesseja sellaisina kuin ne on sinulle kuvattu tai kuten olet ne ymmärtänyt tai kuten olet käytännössä nähnyt niiden toimivan.

Kysymykset joihin toivon vastauksiasi tiistai-puoleenpäivään 29.11.2016 mennessä ovat:

- Toimiiko prosessi a) paremmin, b) yhtä hyvin, c) huonommin kuin aiemmin?
- Mikä toimii huonosti?
- Mikä toimii hyvin?
- Miten parantaisit prosessia?

Vastaukset käsitellään nimettöminä ja luottamuksellisina eikä vastaajan henkilöllisyys välity opinnäytetyöhön.

Avustasi etukäteen kiittäen,
Terveisin, with regards,
Antti

Antti Kuparsaari

Osastopäällikkö, Manager, ICT

Support Services

Mobile +358400445225

antti.kuparsaari@sweco.fi

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Please consider the environment before printing this e-mail.

Appendix 3. Original survey responses (confidential)