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**Document retention management**  
**EIM system suitability for Service business operations**

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## Description

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<p>Description</p> <p>The thesis was done for Valmet Technologies Oy SER business line. The departments of which document retention needs were considered were Logistics, Purchasing and Forwarding. As one EIM-system had already been taken into use in another SER operations, the decision to evaluate this systems suitability to the discovered requirements was made.</p> <p>This thesis looked into document retention, visibility and their effects to the activities of the departments in question. The goal was to evaluate whether the studied EIM system could create value to the processes and produce possibilities for better information sharing.</p> <p>The implementation included interviews and participatory conversations with employees of departments of the study, current system users and IT-specialists and looking into the features and characteristics of the EIM-system. As a result, the EIM system suitability was evaluated and observations and suggestions made for the customer company if the system is to be implemented.</p>		
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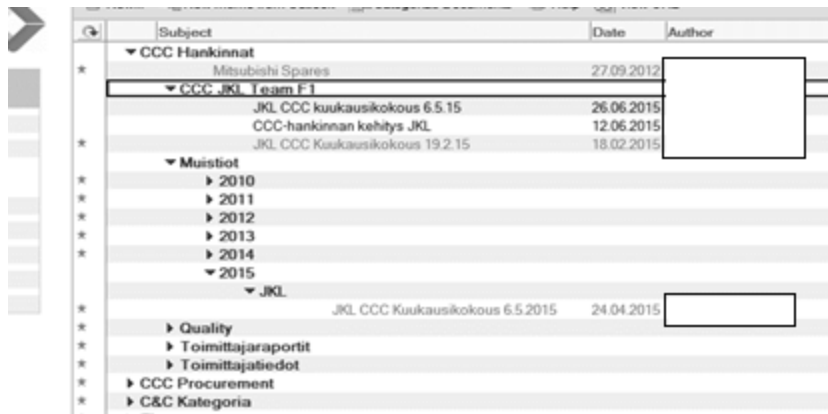
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# 1. Introduction

## 1.1. Problem definition

The first ideas of the possible thesis subject we received on August, 2014. Author had worked during the summer as a summer trainee in SER Purchasing department, of which superior at the time introduced the need for an effective way to communicate and retain the information currently preserved on the hands of single employees. This creates a risk of information as well as opportunity loss, when documents can get lost and possibly not all information is utilized effectively. Enterprise Information Management (EIM) presented is a field studying enterprise information use and management practices and finding optimal ways to control them. In this thesis, customer company is simply referred as Valmet instead of Valmet Technologies Oy. The business line thesis is consigned to is Service business, Performance Parts (referred to as PER) operational area.

The simplest definition of the problem on hand is that three departments of Valmet SER business line, procurement, logistics and forwarding receive, prepare, store and send documents that currently are scattered along supply chain without common guidelines or archive. Some documents are stored internally, but some documents are unmethodically trusted to be held by external parties such as suppliers or service providers and partners. Sometimes, even when a common system is used, documents of the same class are retained in different locations in the system (see Figure 1.) With current preservation method documents and information are truly not managed by the side that should be interested to do it, by Valmet.



Subject	Date	Author
▼ CCC Hankinnat		
Mitsubishi Spares	27.09.2012	
▼ CCC JKL Team F1		
JKL CCC kuukausikokous 6.5.15	26.06.2015	
CCC-hankinnan kehitys JKL	12.06.2015	
JKL CCC Kuukausikokous 19.2.15	18.02.2015	
▼ Muistiot		
▶ 2010		
▶ 2011		
▶ 2012		
▶ 2013		
▶ 2014		
▼ 2015		
▼ JKL		
JKL CCC Kuukausikokous 6.5.2015	24.04.2015	
▶ Quality		
▶ Toimittajareportit		
▶ Toimittajatiedot		
▶ CCC Procurement		
▶ C&C Kategoria		

Figure 1. Example: CCC memos stored in Notes (Lotus Notes workspace. 2015)

The subject chosen offers support for company's strategy, contributes to the work towards achievement of must-wins and is another step on the route towards the visionary state defined by company superiors. Valmet has a vision to be a leader in customer service (Valmet strategy, .2015). This demands development of processes and all activities to have or add value to the customer directly or indirectly. The amount of activities offering no value to customer should be minimized.

Valmet's values are chosen to support from daily activities to a longer term motivation and work of the company and its employees. Values are available for everyone on Valmet's website:

- customers
- renewal
- excellence
- people (Valmet values, 2015)

From these, renewal and excellence can be highlighted to have close relationship with this thesis' subject. Renewal can be connected to keeping company updated on the latest innovations and modern working conventions and systems. These improve

Valmet's competitive power and offer both customers and employees value, as is also outlined by also some of the company's must-wins. Must-wins "Leader in technology and innovation" and "Excellence in processes" are both directly dependent on the systems and IT-tools available for employees and the skills of using them.

Excellence refers as well to ideas such as continuous improvement and motivation. Excellence as a value targets to improve processes in a way that the results encourage to carry on working to achieve the common goals. Values "People" and must-win "Winning team" are few key supportive parts of excellence.

August and September 2015 SER Finland and Sweden have worked on a LEAN project related to Valmet's Lean-related initiative in order to standardize and streamline processes and work methods and remove activities not adding value for the customer. Efficient and effective processes are built from good organisation, competent and motivated employees but also depend on tools enabling them to do their work well. Visible supply chain tightens cooperation of locations and proper tools further enable good communication.

Implementing Lean initiatives and developing processes in SER affects to the whole of Valmet, since the significance of the Service business line is considerable. As can be seen in Figure 2, the net sales of SER represented over one third of the total illustrative net sales in 2014 (2,800 million €) that included the acquired Automation business line from Metso. Also, the amount of employees from the total of 12,000 is 44 percentage in Service business line (see Figure 3.). From these figures it is clear that SER and its employees have a great impact on the company's success. It needs to take part in improving Valmet's profitability by for example streamlining processes, ensuring the use of suitable tools and investing in competent employees and their training. Developments in any business line profit the whole Valmet and SER is not an exception. Developments may also be shared and applied in other



locations and departments if proven beneficial and practical in one. (Valmet general presentation, 2015.)

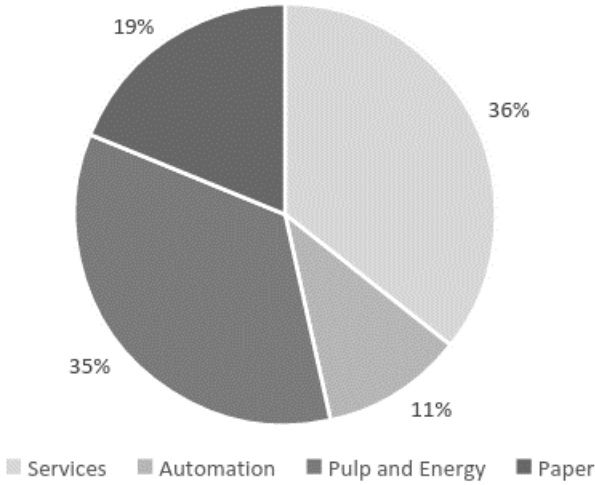


Figure 2. Net Sales by Business Line

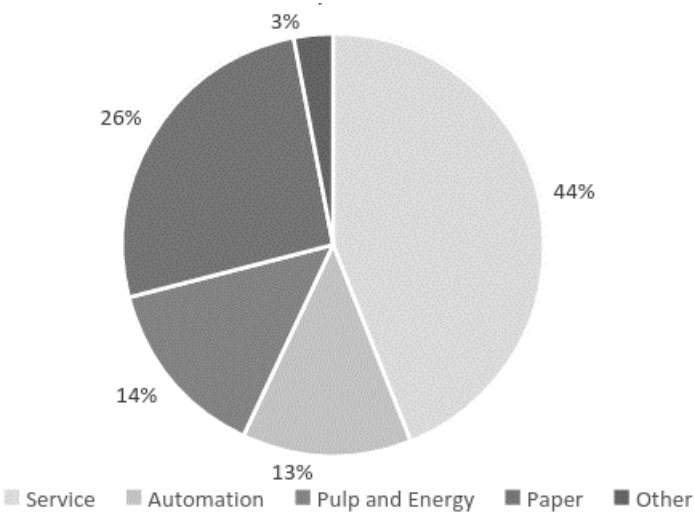


Figure 3. Personnel by Business Line

The research subject has a tight connection with the field of logistics. Jyväskylä University of Applied Sciences' Logistics Engineering degree description states logistics as followed: "Logistics ensure that flow of goods, information, capital and people transfer at the right time to the right place and in the appropriate condition" (Logistics Engineering, 2015). Carrying out an examination studying a possible software tool having an influence not only to document retention but also to the management of information flow and implementation of a change in working methods. References reviewed range from the field of information technology to management, logistics, quality and organizational behavior. This represent well the cross-disciplinary nature of logistics well.

## 1.2. Research method and restrictions

Data and information gathering was done during the whole writing process. Main information gathering methods used were current user interviews based on a questionnaire and possible future user interviews. Literature research and online research in Internet offered material especially to theory base and program familiarity. Start-up interviews of preliminary interest groups were held in February 2015 and problem definition and restriction was finalized in May 2015. Three PER processes, Procurement, Logistics and Forwarding were chosen together with Valmet's thesis instructor and the thesis author.

Original interviews were held for Sales, Purchasing, Logistics and Forwarding department representatives. Final restriction left out Sales that took part in the thesis start-up meetings and also the Finance sector. It became clear in the start-up meeting that though possible dynamic archive tool could be used at least to some extent in Sales department, there are multiple reasons, why it should not be worked on this thesis. The biggest reason being the fact that Sales is still using as to say rather conservative approach to filing, meaning that everything relating to one sales

transaction from original inquiry to quotation, sales order, invoices and related emails are printed and filed to physical folders. Also, much of sales cases are revolving around customer, project or machine, which makes finding common file naming convention intricate. What comes to the Finance sector, it already possesses appropriate tools for their differing functions, so it is not necessary to include it to this thesis.

The research method chosen was qualitative research. This offers freedom and flexibility to refocus the problem when more information about the subject is received. Qualitative research offers the most practical and beneficial method for the problem on hand and enables all its aspects to be explored thoroughly but only the essentials to be recorded in the final piece. This method both makes possible but also demand the researcher to gain the full understanding of the phenomenon or the problem and its underlying and motivational reasons for development. As the understanding of “big picture” is inquired, researcher will suggest improvements or solutions for the problem on hand as an expert with the insight of the needs of the host company Valmet Technologies Oy. Trouble normally faced during qualitative research are normally lack of clear restrictions, extensive, even unlimited amount of diverse research material and in this case, finding and reaching the right sources and professionals able to promote progress of the thesis. (Hirsjärvi, Remes & Sajavaara 1997, 75.)

To keep the concentration in the introduced problem, the author has chosen few main research questions:

1. Is there need for a new document management program and where does this need evolve?
2. Does the potential EIM system measure up to the needs of possible processes and activities?

3. What are the risks and advantages arising if the tool should be implemented and how can they be controlled?

These questions are working as guidelines throughout the thesis. They have influenced the theory topics chosen and work as dividers in the practical part bordering matters irrelevant to host company outside this thesis. In the part 4. Results and discussion research questions are answered and further research suggestions made.

## 2. Theoretical basis

### 2.1. Supply Chain and Management

#### **Definition, structure and relationship with company's strategy**

Supply chain management (abbreviated as SCM) is a term firstly used in 1982 by a consultant called Keith Oliver (Blanchard, D. 2010, 7). Already before this, the concept started to evolve among Toyota production system in the form of Just-In-Time delivery (Soni and Godali 2011, 1). Since then, researchers have been looking for definition and restrictions of the concept, what really is comprised in SCM framework.

Michael Porter (1985, 11-15) has outlined a pentacle representation of supply chain processes inflecting to the profitability and functionality of a company:

1. Inbound logistics
2. Operations
3. Outbound logistics
4. Sales and marketing
5. Service

Porter's pentacle division concept is more traditional with concentration to operational activities, of which controlling activity is called Supply Chain Management. Porter's assertion stands close to what also Donald Waters (2003, 7) has presented: "a supply chain consists of the series of activities and organisation that materials move through their journey from initial suppliers to final customers". Managing supply chain therefore would extend to stand for pursuance to control all tasks of one's supply chain, to see and manage the whole path of a product from the

material procurement to the delivery to end customer and even to reverse logistics. The evolution of SCM has widened the outline to cover in the field of management also the aspect of supply strategy and partnership (Harland and Lamming 1999, 40-51). As Soni and Godali highlight (2011), in spite of a long development, SCM framework is still fragmented and debated by the researchers. Unstandardized SCM framework and terminology has enabled researched to use it even for contradictory purposes. (2.)

Important is to comprehend the both theoretical and practical perspective of SCM as a discipline in order to truly exploit all possibilities of both playgrounds (Soni and Kodali 2011, 2). One straightforward and readily manner of illustrating supply chain is to separate the supply chain to upstream and downstream (see Figure 4.)(Waters 2009, 9). Upstream activities are the ones before the organisation itself and downstream activities are following the organisation. The parties closest to organisation itself are called first-tier suppliers (upstream) and first-tier customers (downstream). Tier-based theoretical idea of a supply chain is portrayed in more general and multi-applicable form compared to Porter's (1985) value chain that is though practical, also not so easy to understand as a chain. From organisation viewpoint, SCM would mainly focus on relationship, partner and customer management (Storey, Emberson, Godsell & Harrison 2006, 6).

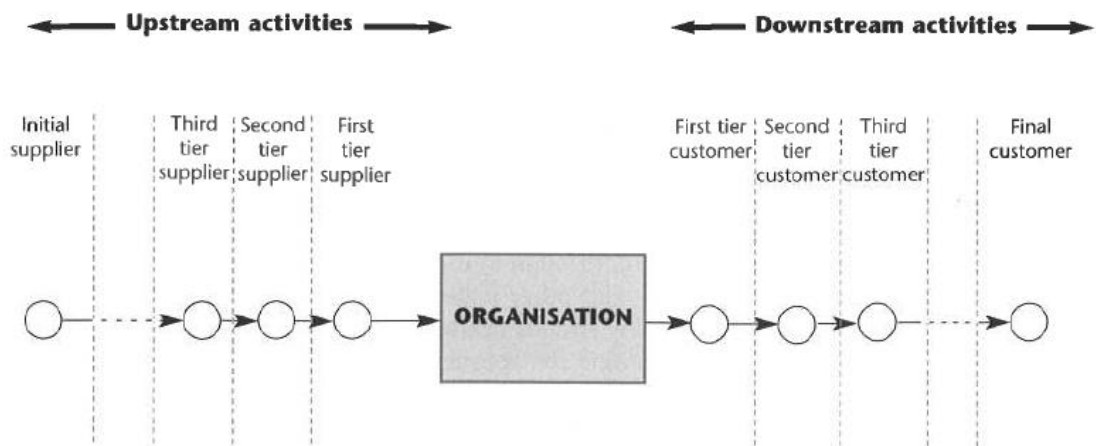


Figure 4. Supply chain activities (Waters, D. 2003, 9)

All three processes handled in this thesis can be located to some node in the company's internal stream and all of them are connected also to company's external supply chain members. Naturally, actual information supply chain is more complex than illustrated in Figure 4. and resembles more of a network. The basic idea of a stream still stands since a network is formed from streams.

The relationship of SCM and company's strategy is clear when the whole of strategy is assimilated and executives aware of the importance and possibilities SCM offers. In that case the business is understood as a set of processes instead of functions and all strategic decisions can be linked to be affected by more than just one function or task. Strategy is implemented to achieve the company's mission set. Strategy parts that are carried out in each process part are called logistics strategies. Logistics strategies are affected by both company internal factors and external forces in supply chain. (Bowersox and Closs 1996, 463-464.)

## **Information in supply chain**

### **Visibility and quality**

Supply Chain visibility as a concept has still not reached any plain definition generally accepted by field's professionals. One definition used is:

*"Supply chain visibility is the capability of a supply chain player to have access to or to provide the required timely information/knowledge about the entities involved in the supply chain from/to relevant supply chain partners for better decision support* (Adielsson, F., Gustavsson, E. 2011)

Jonah Saint McIntire expresses in his book *Supply Chain Visibility: From Theory to Practice* (2014, 5) that "Although theoretical models used to understand and improve supply chains have changed, none have deviated in the belief that there exists a correlation between greater situational awareness and greater supply chain performance". Since the creation of the field, information availability has developed hand in hand with the research of supply chain management. Trajectory of the supply chain management in relation to supply chain visibility has slowly shifted from being a signal of quality to resolution. "Supply chain visibility – began as something to measure but evolved into a solution to improve overall supply chains or business performance" states McIntire (2014, 5).

Formerly concept supply chain may have symbolized the flow of physical goods with economic value if anything. Information has been recognized to have similar economic value as well that indirectly prospects to fill the human and business targets and needs. The base of an economically worth supply chain is visible and well managed information.

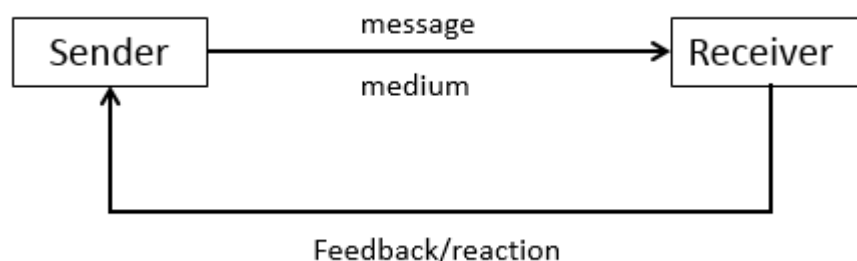
Good-quality information is accurate, timely, complete and relevant. Incorrect information is repeated in following activities and a multiplicative effect of faulty information develops along supply chain. Accurate information instead reliably



reflects the real life affairs. Timely information prevents misunderstandings and enable more flowing work when complete needed data is on hand when needed. The relevancy aspect is highly dependent on the operator of the information. Useful information is such assisting the user to perform his activities and giving clear yet restricted picture on the subject on hand. When information is restricted is the performance of tasks, even to whole supply chain, more efficient since the user does not have to use time and effort to sort it themselves. According to Jonah MacIntire (2014, 3), when information and its quality differs on components of supply chain, the whole chain behavior can be unaligned and result in poorly and inefficiently functioning network. Implementing supply chain visibility and focusing on the qualities of useful information thus can have a positive impact on the performance of people and the supply chain. (Griffin 2008, 616-617.)

### **Information Management concepts and communication**

Digital Strategist Oscar Berg has written a rather clear blog text “Can you tell the difference between EIM and ECM? Really?”. He notes, that the basic concept of a communication theory (illustrated in Figure 5.) offers a base for setting these two terms apart.



*Figure 5. Communication loop (adapted from Berg, O. 2008)*

In communication the needed elements are sender, receiver, message and a channel or a medium through which message is conveyed. Message includes information that is transferred from the information source to its destination through a chosen media. What ECM is designed to do is to work as the mailman carrying the message (content) successfully to the assigned receiver above preserving it. EIM takes the idea a bit further and focuses on having a deeper understanding of the message and the whole flow of the information: who is the receiver, what do they need and when, why do they need it, is there further action demanded from the receiver? EIM is a concept which takes the place of the traditional authors.

Document Management (DM) and Content Management (CM) are also closely related to each other. DM handles files that are commonly understood as documents such as Excel spreadsheets, written documents and PDF. DM follows these documents through modifications and archiving. CM is an extended version of DM. It can handle also unstructured information such as videos and other multimedia files and helps to organize the information and make it so more accessible and easier to handle by people. (Content Management vs. Document Management: What's the Difference? 2015.)

Information governance describes a process or an initiative of controlling information in an organisation. It is a system coordinating the information with a compliance of regulations and directing information operations within the strategy and organisation requirements set. Records Management (RM), as stated in *Records Management or Information Governance?* is an important component of an information governance program (Saffady 2015, 38-41). RM looks after the information policies and the legislative dimension of literal recordkeeping, in other words is setting some of the restrictions operative system and employees have to work within, for example how long do records need to be saved, which need to be retrievable, and how to control them?

After opening up concepts of ECM, EIM, CM, DM, RM and Information governance, it can be stated that in this thesis, EIM is the focus point. ECM, CM and DM systems are such that can be at least to some extent count to part if EIM systems and all of the foregoing are controlled and directed by regulations and framework of organisation's information governance and RM.

### **Integration along supply chains**

Modern solution to the challenge of quickly risen amount of information along supply chains are information technology (IT) systems. MRP, ERP and CRM are some solutions used to control and manage enormous data flow both intra- and inter-firm. This transition has cleared the traditional company structure to current network structure. IT systems at their best facilitate visibility and information processing of the whole supply chain and upgrade cross-functional cooperation regardless of physical location of people. When IT systems are fit for their purpose, the operations routines can be built and activities are documented for such purposes as quality management and audit purposes. (Skjott-Larsen 2007, 103, 100.)

One noteworthy theme in supply chain and IT systems is the collaboration and integration along supply chain. Supply chain integration enables processes outside one organisation and its activities to improve the performance of and along the whole supply chain, if supply chain visibility and flow of information is continuous and flexible (Olson 2012, 2). However, after integration the responsibility of the quality is commonly shared and infeasible to only push upstream, since with common SC all nodes are on the same network. Supply chain integration challenges management skills and knowledge due to the wider communication scope. (ibid., 100.)

Technically integrating IT systems means an attempt to make dissimilar systems with various hardware, technologies, operating systems and users collaborate. This requires putting up linkages between applications that may have nothing else in common except the purpose, in order to overcome possible compatibility

complications faced. Though IT has answered to many questions and enabled better and more instantaneous information and communication flow, it has also had a great impact on the trend of many other fields of research. Usability science, quality management and information security have had to adapt to the more non-physical forms of risks. (Griffin 2008, 628.)

### **IT challenges and impact to an organisation**

IT systems offer a great deal of opportunities to managers and companies to perform and function but also some limitations do exist. Griffin (2008, 630) has listed few points to be considered before taking a new system into use. The economical fact is that software handling information are rather expensive to purchase as well as implement. The usability and employees capabilities to use it create a possible situation of system implementation failure. Exploiting field experts when developing or purchasing the software could lower the risks of unsuccessful improvement. Many managers might also have a daydream of a system offering solution to all current problems faced in the organisation or processes; this is not the case. Some programs might offer separate modules for different activities though. Most important is that for same organisation and same activities should same system be used to create uniformed processes. These systems and their service should be assimilated by employees with the help of change management. (Griffin 2008, 630-634.)

Even in new IT systems human interaction is inevitable at some point. The interaction of human and a system created possible miscommunication and risks of mistakes in the data. Though software systematically functions as it is programmed, humans have programmed it and are making inputs and interpreting outputs. The danger is that mistakes made along the supply chain multiply and accumulate or the information is too much relied on. Education and right selection of workers inhibits careless mistakes.

Systems can be exposed to viruses and sabotage and also need to maintained and updated. Hardware can fail even if electronic firewalls and encryption would protect

from outside intrusions. All these can lead to downtime when programs might not be possible to use. Downtime should not stop the whole company because in hectic business it can endanger the functioning of the whole supply chain. One more variable affecting to information security are the people. This risk can again be reduced by proper training and increasing the awareness of IT dangers. Thus information security is a true concern of businesses relying on software and information infrastructures. (Griffin 2008, 630.)

Considerable IT development always causes temporarily uncertainties in the organisation when the supply chain development takes place. Organisation culture and change management implementation define far how well and efficiently improvement advances. Completed IT system development or integration makes all the difference in even three level: personal, organisation and supply chain level. Employee's individual efficiency and work enjoyment and motivation can improve, but negative effect such as lower team spirit might occur due to the decreased quantity of real life human contact. Employees can start working like machines which should not be the target state; is that not why IT systems were developed? The organisation model can become leaner and more flexible because of more organizes and standardized processes where all information is not controlled by people. (ibid., 631.)

## **Performance**

### **Performance and improvement**

According to Oxford dictionary, performance can be defined as "A task or operation seen in terms of how successfully it is performed" (2015) or as Cambridge dictionary states: "How well a person, machine, etc. does a piece of work or an activity" (2015). In its simplest way, performance can be measured for example comparing a real lifetime of a battery to the theoretical lifetime. Supply chain performance can also be measured, but the units might vary from side to side. In performance the focus point

can be extended to more physical aspects as productivity of an equipment than in Finance (Waters 2009, 442).

Measuring performance and improvement are correlating each other in a developing supply chain. Had current processes not understood and goals set, the need for improvement does not develop. Relationship of for example continuous improvement and measuring performance, continuous improvement as a value/mission produces a need for measuring the current situation of a company, responded by performance measurement. After this, the alternatives of routes to improved processes or measures can be looked for and after their implementation performance measurement helps in comparing the outcome and original measure. When a supply chain and its processes face a change resulting from improvement, changed company structure, market situation or any other internal or external reason, performance measurement can point out whether the modification is directing the company in the wanted direction. (Waters 2003, 197.)

### **Indicators**

Indicators can be useful to any party of a company depending on the subject measured. Key performance indicators represent indicators that are nonfinancial “set of measures focusing on those aspects of organizational performance that are most critical for the current and future success of the organization”. These indicators are more practical than for example key result indicators, since they are usually adjudicated not by the employees themselves but by the company executive. Performance indicators and result indicators can be seen as building blocks of KPI’s, measures that are major in order to reach KPI’s. (Parmenter 2010, 3-4.)

Though performance indicators show reliably the wanted features of a supply chain or a company, performance measurement has its challenges. What to measure is the foremost question when designing a logistics cockpit and choosing the right performance and result indicators. Another drawback is that performance measurements place in the past and at most can give a forecast of how the measures

might develop over time. Indicators as units or values only give a review of how we are doing, not what should be done to reach the wanted standing. (Waters 2003, 197.)

### **Performance measurement methods, models and tools**

Performance measurements can give valuable information of how company's processes are going compared to others similar. One well-known comparison method is benchmarking. It focuses on comparing such performance measures that are seen significant for the process requiring improvement to the same measures of the most advanced or best process of a competitor. Utilizing comparison methods such as benchmarking can be insurmountably difficult if indicators chosen are not public or available or similar competitors do not exist (Waters 2003, 208-209.)

Performance measurement does not bring value itself, but improved performance and processes where non-value adding activities are minimized cause significant advantages to a company overall. Some examples of benefits are improved financial stand and competitiveness and deeper knowledge of department or a business and its personnel's competencies. (ibid., 215.)

We have got to know few ideas of how to measure performance and what ideas lay behind supply chain performance. As already stated, managers looking into indicators do not generate improvement and no supply chain is a static one. For this reason, it is vital to constantly try to reach further and develop processes and activities of an organization. For this purpose, William E. Deming came up with a simple idea of a continuous improvement cycle, noted as the Deming wheel or the Deming Cycle (see Figure 6.). Deming Cycle's revision are also PDCA circle and OPDCA, where O, "Observation" stands for defining the starting point of a process. Deming cycle is not only relating to performance management but also closely to quality management and Lean manufacturing. (PDCA, 2015).

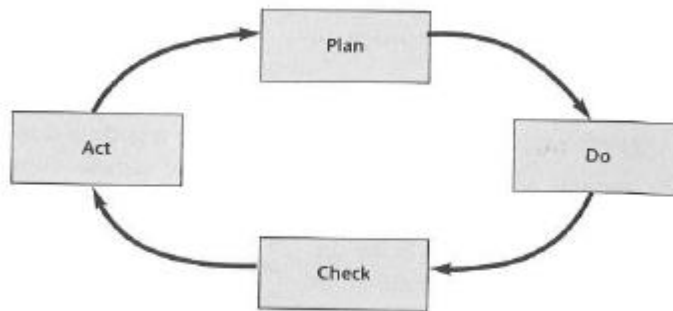


Figure 6. Deming Cycle (Waters, D. 2003, 97)

Four phases are embodying everything necessary for continuous improvement. Planning stage includes spotting the current standing and defining the target condition of the process and designing a plan how to reach the targets. Following step of “Do” means implementing the plan as well as possible. After the plan implementation, it is important for the continuous improvement to evaluate or “Study” whether the process and plan has helped to reach the eligible state. Last step before the circle has been gone through is to take a closer look to everything happened in the previous stages and to “Act”. Especially the fourth step is essential. When in real life a development process reaches its end, the follow-up and success measuring promote the development to become a norm in the whole organisation and further innovations to evolve. (ibid.)

## 2.2. Change management

### Description

In Chapter *Performance* improvement was shortly introduced. Word “improvement” has a positive tone in it, but what usually inheres in it, change, can bring out surprising and major difficulties in an organization and its processes. Managing



change demands wide understanding of not only supply chain management but also more practical point of view; what in real life is possible to carry out with the resources on hand and is the change really needed?

Change management is an ism concentrated on management of an organisation, activity or a process encountering a change. Business environment is in constant change mode due to models such as continuous improvement, globalization and complex supply chain networks. Due to the change becoming more constant, even normal state of existence in organisation, leading change is slowly considered as part of standard skill of a manager. Organisation is so forced to obtain capability to withstand change, since nowadays it can be the feature giving the winning edge in market competition. If company does not watch over new prospective development, they end up instead of maintaining their competitive position, finally chasing the others. (Mattila 2007, 10, 244; Tuominen 1997, 52.)

## **Structure of a change project**

### **Groundwork and initiation of a change**

Research material for change management seems unlimited. Focus points and change management models vary depending on the angle of approach. For example Kari Tuominen (1997, 19) has chosen a four-corner model including the management of future, products, processes and development. John P. Kotter (1996, 33-158) instead formats the management to an eight-stage process that does not so much depend on what is changing, but focuses generally on the process and its dimensions. His ideas can be recognised to interconnect with Mattila's thoughts in book *Johdettu Muutos* (2007) which is more concentrated to handle organisation change. What is common to all these change management models is noticing the need. There always should be a need to change, the change should not be the target value itself. Need for a change can arise for example from one of the reasons below:

- strategic need (reaching strategic goals or must-wins)

- change in market situation
- customers, owners or interest groups demands
- processes or activities not reaching performance targets

Strategic need is tied close together with the management of future. Company has to have a vision for future, a goal or a target situation on sight. This vision should be carefully chosen and put, since it will be used later as a guideline for many changes and decisions to come. Vision should be tempting to all parties needed to reach the targets of change projects, employees, interest groups as well as to leaders and management pushing the change. Figuring the target situation and the vision is neither enough, since they don't message employees' hands on ways to change. How to deal with employees, change project team and oneself as a part of a change will be handled in Chapter *Roles and responsibilities in a change*.

### **Change plan and restrictions**

When planning a change it is vital to know the starting point and the potential scale, whether change is truly needed and if the targets when reached are enough for the company. Evaluation of the resources available adjust restrictions of the scale (Mattila 2007, 135-137, 148). Resources needed are not only monetary, though this easily is the main anxiety for managers and other superior. Skills to lead change and to change are mandatory for success as well as knowledge of the processes or tools under change, measurement tools for follow-up of the success and above all, time can be resources change requires. Especially after such as newly adapted information systems, the extent of money and time needed for user support might come as a surprise (ibid., 193).

Time is essential. After the decision of a development has been made, development management should establish a sense of rush to guarantee the progress of the project. Many changes get stuck before the finish, when no one is pushing to keep up with the planned schedule (Tuominen 2001, 305). John P. Kotter (1996, 36) also

points out in his book *“Leading Change”* that a sense of urgency also improves the credibility of development in the eyes of employees; why would this change be pushed so hard, if it is not necessary? Start-up timing of the change, or at least informing about it is to be chosen carefully: the beginning may not be too great, if participants are left over the weekend worrying about a vague announcement about a new development (Tuominen 2001, 304). If organisation, processes or any other significant activity has lately been under big renovation, considering how to balance the daily work to the change happening on the side is. From both employee and company point of view undisturbed work peace and continuing daily activities allow and also finance development projects. Multiple simultaneous changes should be avoided if the developments do not support each other. This also secures the availability of management resources capable of leading and administering change. (ibid., 288)

### **Implementation and aftermath**

Before the launch of the final change, a pilot project can prepare the managers and other related people to what is coming ahead. Pilot project or a test group can reveal dangers and miscalculations in the plan, help to understand possible risks or raise the need for a recalculation for resources. Change pilot is demanding but also gives the forthcoming change a soft start (Mattila 2007, 158-160). “Coalition” encourages to set the targets in the beginning to reasonably low in order to secure a positive feeling about the change to all. This can ease the change resistance when some harder changes are implemented. The focus point and restrictions of development need reassessment after the pilot, during of which more development needs may have emerged (ibid., 165). Latest at the time of the pilot, project informing and engaging people outside of the development team should begin in order to later on control change resistance (Tuominen 2001, 301, 304). Implementation of the real change should not be dependent on the success of a pilot project, but pilot should work as a test and build trust towards and prepare for the changes to come.

Kari Tuominen (2001, 293) uses a term “managed change”. This simple phrase is a good guideline for the complete concept and also to the step following the start-up and pilot of a change. The real implementation of a change can be based on a model planned on previous steps. The idea of a model is good since it sums up well what are the targets and how to reach them. Problems arise, when management is lulled into the feeling of security and trust to the change models may generate and forget to really manage and lead a project. Model itself does not make the change and it does not give strict rules how a change should be implemented. People are needed to do the change. In reality, only a change is a norm so flexibility is demanded (Tuominen 2001, 3) from management and the team. Also the whole organisation needs to understand that sometimes to reach the wanted state of change, some things might have to be given up or ways to work changed. During the change measurement tools and indicators work as exhibitors of the progress and its velocity (Mattila 2007, 148).

Establishment of a change needs to be ensured when the end of a development or a project is closing by. This is one of the reasons for clearly defining the finishing point. Time or resources should not be the bottleneck for successful change. When some results may have already been reached and the change seem to have happened superficially, it must be considered whether the processes, organisation and work methods have been regularized. The motivation of personnel is tested right on the end of a change: is there enough perseverance and will to finish up? Good leaders and management have an important role to encourage their teams and remind them of the vision and targets fixed (idid., 264, 293) to accomplish the future state. (ibid., 192.)

Proper documentation of the process will benefit later when the success of it is under evaluation and organisation is planning for new changes. From well documented project, organisation can sum up lessons learned and problems faced in future. Developments should not be as critical or problematic as on previous changes due to ready solution and management models. Above documentation, constructive

evaluation and wrap-up are important to the development of the organisation. The results and acting as one team reinforce the trust towards the company, its management, leaders and teams. (Mattila 2007, 196-197, 199.)

Though the project is finished, the work definitely is not done yet. As Mattila (2007, 194) points out, employees have to have a channel where to communicate relating change issues also after the official end to make them feel heard and motivated to continue working as the new processes or tasks demand. In development projects the management is usually rewarded based on the success and result of the change. If the motivation and commitment of the management want to be held high towards a longer term change, also the measurement tools and reward systems ought to design for a longer use. After the change, it is vital to consider if organisation and processes have reached the position wanted (benchmarking) or is even more change needed? When looking into this, should be notified that in between of bigger developments organisation should be given some stabilizing time to assure uninterrupted work and offer also the interest groups time for adapting to new processes. (Tuominen 2001, 228.)

### **Roles and responsibilities in a change**

In change management, the easy part is to manage the administrative issues. Project management and finance book the attention of management that are under pressure to look after easily measurable indicators. Many of these skills can be learned in universities, but leading and managing people demand skills that for some come naturally, when some need to work hard to learn them. There are four different groups taking part in and affected by a change: managers and leaders, development team, other internal personnel and external interest groups and tiers such as suppliers, customers, and parties taking care of outsourced services. Either the power of external authorizations cannot be diminished. (Mattila 2007, 31, 192).

Leader and manager describe two distinctive roles in an organisation. The division is vacillating but effective change and successful development requires both. David Brookmire simplified the differences of these roles in his writing *Managers of leaders* (2014). Managers are presented as concerned about executive and practical implementation of company's strategy and vision. Managers are focused to hit the short-term targets and communicate between employee teams and higher level. Team management and communication skills are also few of the characteristics traditionally required from a good manager. Leader's responsibility emphasis compared to managers' includes more visionary and strategical span. Leaders utilize skills of inspiring employees to work towards long-term goals set and create engagement and credibility. Though a distinction between managers and leaders is made, a good manager can have also good leader's characteristics and vice versa, the balance of skills of the team guiding the change is the priority.

In change management, leaders and managers are responsible of guiding and supporting the executive organisation throughout the process. The operative management of development and the future's connection to company's strategy are on the shoulders of managing team, says Tuominen (2001, 294-301). Normal day-to-day management rules do not hold up in a change situation. He also sets one of the fundamental requirements to be familiar with the products, processes and activities under change. Some other characters of a good leader and manager listed by Tuominen (2001) and Mattila (2007) are following:

- capability to work under pressure
- perseverance
- communication skills
- ability to motivate and engage people to the change
- accountability and credibility as a manager or a leader
- team building and delegating skills
- self-acknowledgement, -discipline and -improvement skills

Especially the last point, self-acknowledgement and self-development skills are significant for not only the person itself, but for the whole organisation. John P. Kotter enhances the importance of lifelong learning to company's and leader's competitive capacity<sup>1</sup> (1996, 178). Sometimes even the managers and leaders can present change resistance without acknowledging it. Leader capable of dealing with change has better capability of also support others during change. (Tuominen 2001, 309.)

One of the greatest accomplishments a good leader can reach is gathering a good development team. Each workplace has its own official but also unofficial culture. Official culture is far defined by the company itself by factors such as values, communication, size, and organisational matrix. Unofficial culture instead is built by the employees and management and is heavily dependent on personalities, professions and on how much the significance of hierarchy has been emphasized. Leaders have a tough job to put together a well-functioning team with a good balance of skills and capability to handle change. (Mattila 2007, 34-38.)

Mattila (2007) and Tuominen (1997) make different classifications of people's ways reacting to change. Few main principal groups can still be found from both. Some people easily or even keenly embrace the change and actively helping pushing the project forward. They might be either naturally excited about projects or just named to be the promoter in a team. Contrary role plays the opposition. Opposition objects change and often is not even hiding it. Continuous criticizing challenge leader's and management's skills to handle change resistance, since sometimes opposition is carrying on fruitless demur though majority would had already got accustomed to

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<sup>1</sup> Competitive capacity is the capability of dealing with an increasingly competitive and fast-moving economic environment (Kotter, J.P. 1996, 179.)

new ideas and developments. Moderate opposition can bring value to the change project by pointing out problems and risks of it, but continuous obstruction of plans and activities risk the completion.

The two extreme roles presented before naturally do not portray the true collection of characters in a change. Somewhere between of opposition and promoters there are several roles such as followers, doubters and opportunists (Mattila 2007, 72). The roles employees assimilate are strongly influenced by past changes and experiences of an individual and they can even change along the change process. Importantly, a leader or a manager has to be aware of the personalities and combine a change favourable team and an equilibrium of skills. So how can a good leader handle this complex group and pull through adversities such as change resistance? (ibid., 87-90.)

The fundamental reasons for people working can be validated for example by Maslow's hierarchy of needs (see Figure 7.). Abraham Maslow has claimed that people's motivation is driven by an urge to satisfy five levels of need. Regarding of a person, not always all the lower level need to be completely filled to person have a strong need for some features of higher levels and neither is the order of levels as seen in Figure 7. Stable work improves people's economic situation and thus enables a big proportion of their basic needs to be fulfilled. (Griffin 2003, 437-439.)





Figure 7. Maslow's Hierarchy of Needs (Griffin, R.W. 2008, 438.)

The first and second level are representing the basic needs, including physiological and security needs. Physiological needs include matters such as nutrition, metabolism, air and sex. Following physiological needs is a need for safety of shelter, warmth, morality, employment, family, body and employment. Employment tends to be in modern world again a route to stability in life. Stable pay and secured future prevents the need of finding a better work offering these basic advantages of a regular job and enables employees to focus on the work itself. (ibid., 437-439.)

When an unexpected change occurs, employees tend to lose part of their feeling of stability. For this reason, a trust in organisation and leader are significant. Committed employee is able to function in a development situation and trust to one's skills empowers them. Lack of trust instead creates change resistance and decrease the probability of a successful change. Recognizably the higher amount of fulfilment of needs a person receives from their work place, the higher engagement, job

satisfaction and long-term productivity and lower personnel turnover can be reached. (Mattila 2007, 72-73, 179-180.)

Three highest levels of Maslow's hierarchy deal with human's psychological and self-fulfillment needs. People have a need to belong to some bigger, a need of a gregarious animal but also a need to be individual and treated as one. Maslow has divided these characteristics into love and belonging, self-esteem and self-actualization levels. To be accepted as a part of an organisation or a group offers an employee a sense of connection. This middle level is closely linked with the upper level of self-esteem. Self-esteem is not only something endogenous but often people reflect their value to be commensurate to the respect of others. The respect and belonging to an organisation of people of equal value build again trust towards the leader and company and thus prevent change resistance (Mattila 2007, 43). The highest level of need is self-actualization. An employee that already has many of lower level needs addressed, needs always something more, something that permits self-development and feeling of responsibility of own growth. (Griffin 2008, 439.)

### **Importance of communication**

Many subjects covered before such as leader's role as a visionary, building trust and management knowing their organisation and its cultures, highly depend on the communication. Mattila (2007) foregrounds that open communication prevents rumor culture and reinforce people's feeling of having a chance to express one's opinion and being heard. Good ways to back this feeling up are common announcements and hearing events, encouraging teams to meet regularly in order to have everyone on the same page and keeping some sort of feedback and request for help channels open. At grass roots level it is part of good manager's work to maintain the openness and encourage employees to exploit it as well as uphold the need of change. In practice, a good communication or handout is repetitive, avoids using words with bad associations and is able to maintain audience's attention by reflecting what the essentials practically mean to them. It can also be worth one's

while to try to create a continuum, a relationship to the history, since listeners and their feelings, motives and characteristics are effected by their past as are present and relations to future. (Mattila 2007, 104, 188.)

Change management is a cross-cutting branch of science, since it combines fields such as psychology, management and whichever business field is under change. Thus on each project a use of an expert or a consultant of change management should be considered, as agree both Mattila (2007) and Tuominen (2001). Sometimes an external perspective might see issues invisible to ones too close to the organisation and who are most dependent on the success of the development. (Mattila 2007, 77; Tuominen 2001, 292.)

### 3. Information controlling and retention

#### 3.1. Information sharing and controlling

Dynamic business environment such as company is where business functions are linked together in different ways depending for example on the size, business area and industry, physical location and history of the company. Three business processes of Valmet Technologies Oy handled in this thesis (purchasing, logistics and forwarding) are clearly divided in department from the expense/economic point of view but in practice the cooperation is tight due to common supply chain.

The organisational model used is matrix management and is presented and defined in internal database files. Basic model of a matrix organisation can be seen in Figure 8. In matrix organisation the departments are not formal and fixed to be managed by one superior. The traditional hierarchical structure does not exist, but employees work in teams based on both functions and a product or a project manager. Matrix organisation model enables efficient expertise, information and equipment sharing. (Griffin 2003, 331-333.)

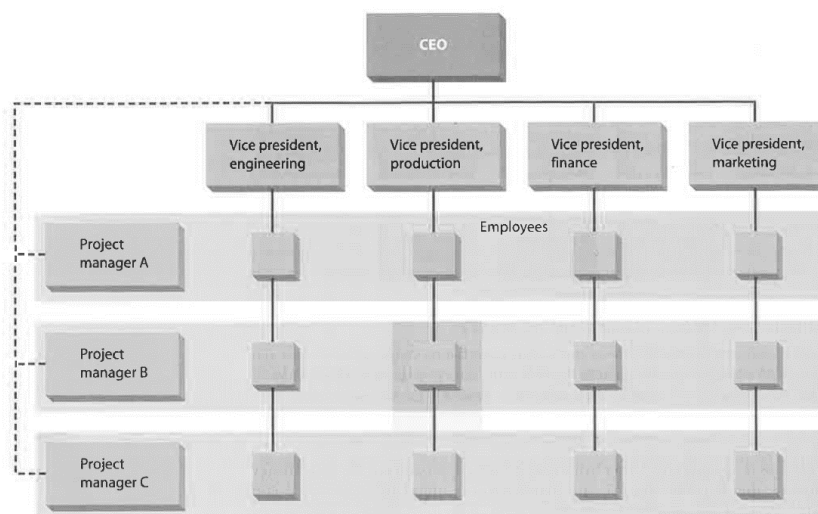


Figure 8. Matrix organisation model (Griffin, R.W. 2008, 332)

In reality, vacillating task definition permits that some tasks can be performed by an employee from another department it originally and mainly is named form though this manner is rare. Matrix organisation secures, that tasks can be to some extent the same on teams, but certain specialization is possible. Employees are responsible for their performance to their own profit center and superior. Also all external interest groups are not aware of the responsibility areas, which is not even necessary in many cases. (Griffin 2003, 331-333.)

Efficient and effective information preservation and sharing is an issue in modern world where the amount of electronic data has increased rapidly (Mearian 2008). Controlling the flow and distribution of information does not include to comprehensive school's curriculum, no matter that some amount of skills in the area are compulsory in order to cope in most work where tasks are done with computers. The greater the flow of information is the harder and crucial the know-how of information controlling is not only for the worker, but also for the whole company.

Lack of uniformity inside a company places the different business functions, processes and departments in unequal positions and questions the visibility of the company. However, it would be unprofessional and misleading to claim that total uniformity is the way to go in practice. Here visibility offers the solution: when internal supply chain is aware of possibilities, innovations and new tools and when appropriate, allowed to utilize them, the uniformity is enabled to works its best. (Griffin 2003, 76, 617-618.)

### 3.2. Retention legislation and guidelines

Legislation regarding document retention varies depending on the jurisdiction and regulations followed in the jurisdiction in question. This thesis and research done for is mainly restricted to focus on Finnish and Swedish jurisdictions that have similar

legislations with naturally some respective differences. Due to the fact that for this thesis the fields under examination have had to be restricted, the area of document retention and legislation is handled only shortly and by its main essentials. In Finland, the regulations controlling document and records retention are for example Accounting Act, Value Added Tax Act and the Prepayment Act. The minimum retention period varies greatly between 4 to 10 years. The Finnish Business Archive Association recommends for example certificates and contracts to be retained from 2 to 10 years. Sweden has corresponding regulations: Swedish Accounting Act, the Swedish VAT Act and Swedish Customs Act. The minimum retention period can be generalized to be 7 years. (Iron Mountain Guide 2013, 321-327.)

Iron Mountain Guide 2013 (2013, 4) presents the basics for European retention periods and lists some country-specific records retention. It also reminds that compliance of records is growing its significance due to general improvement of records management, globalization increasing the risk of reputation loss and authority audits becoming more common. The advantages for a compliant records management are for example more accessible information, faster response to inquiries and business-related questions, increasing productivity and better use of employees' time and protection of critical documents.

As mentioned above, the legislations of document retention is dependent on the jurisdiction and line of business under examination (Grönholm 2015). Company, especially a multi-national one needs to map carefully all retention needs and build a compliant records retention policy. To reach compliancy globally it might be necessary to construct retention policy hierarchically; set a company-wide base to the policy and add lower, jurisdiction and business line conditional regulations. Grönholm (2015) mentions also in his email that business needs to retain certain receipts describing the business activities, receipts possibly including multiple documents and records. Thus as a main rule, purchase orders and contracts are also ruled in receipts. As a guideline, due to the variation of the retention legislations in a

globally functioning company with product liabilities, Grönholm (2015) recommends documents relating to business activities to be retained for a minimum of 10 years.

The International organisation for Standardization (ISO) has prepared a standard for Information and Documentation, ISO 15489-1: 2001. ISO creates standards through field-specialized technical committees and in accordance with ISO/IEC Directives. ISO 15489-1 pursues the same as most EIM, ECM and Information governance policies: efficient and effective retain of protected and adequate records and documents with standardized. ISO 15489-1 also closely relates to companies' aspiration for ISO 9000, a certificate for a sufficient quality management. These to standards support each other to create a good retention policy that is being managed properly and fruitfully. (ISO 15489-1:2001(en), 2001)

What should be remembered in records retention is that in addition to minimum retention periods, there are also maximum retention periods for certain documents containing for example people's private information or security issues. This is why also the destruction of documents need to be included in the records retention policy. The compliancy of electronically or digitally preserved records need to be verified. Nowadays a guideline is that when a document or a record not preserved as a physical version, the version preserved needs to be a complete reproduction of the original one. Thus the information needs to be accurate and in the possibility of an edited version, the history log should be accessible. (Iron Mountain Guide 2013, 15.)

Iron Mountain Guide (2013, 16) also emphasizes that "systems for the retention of electronic records should be designed in such a way that the records remain accessible, authentic, reliable and usable during their retention period, regardless of any system changes". This builds up the pressure for companies to acquire modern, fit for use systems or develop add-ons to existing ones measuring up to the requirements of both internal organisation and external parties such as supply chain members and authorities. EIM and ECM classified retention systems can create cost savings not only by increased productivity but also by helping company to avoid fines

of non-compliance and by defining preserved documents and destructing the unnecessary ones.

### 3.3. Document retention needs

All departments and their processes require partly common and partly department specific documents or information preserved. In Appendix 12 are listed documents received or rather significant information required for the departments to function. Logistics documents needed are packing lists, consignment notes, receipt feedbacks, reclamations regarding receipt feedbacks, package labels, picking lists, VTG bookings, manual packages documents in repair orders, photos of outbound packages and their content and material certificates and records. The photos of packages are labeled based on the package number. Other information logistics might need during for example doing an inventory cycle counting are item data and drawings. Examples of these documents can be found from Appendices 3-5 and Appendix 8.

Purchasing works with following documents (some can be seen in Appendices 1, 2, 6 and 7): inquiries, quotations, purchase orders, material- and bearing certificates, measuring records and confirmations of receipt of goods. Like logistics, also purchasing work requires item data and drawings to be accessible in order to perform daily activities. Contracts made with suppliers are added to Notes as well as driven to Baan, where the for example expiry date and prices per contract item can be found.

Forwarding handles a high variety of documents including picking lists, export invoices, and different certificates. Products are delivered around the world and areas and countries have differing requirements of what is needed to be allowed to import goods. Also it matters, whether products are imported for good or whether they are trespassing or only temporarily visiting the jurisdiction. For example, non-



wood certificate is required at least for deliveries to China and Australia to prove that packaging material does not contain wood that could cause hazard for the biodiversity and environment. Some certificates are valid only as an original, physical version and retained electronic copy does not have evidential value. One example of particular document is ATA CARNET for products imported only temporarily transported to the destination country (for example tools for installation work). Long-time agreements or Country of Origin documents represent documents of which existence can offer tax benefit and facilitate the import process. (Laitinen, 2015.)

Each document of information feed is featured on following classification: necessity, recurrence and the current location of retention as well as in which systems or programs they are preserved. Appendix 12 is a proposal of how to structure documents easily understandably to one sheet. Based on it can be evaluated what should be retained in a possible EIM system and consider on which application the system would be feasible. The classification done is not black-and-white but also dependent on the person in charge and his background and skills to manage the division. Classification is also conditional on each employees own work method.

Necessity class (see Table 1) describes how significant the existence and retention of a document or information to a possible EIM system is after the first creation, delivery or printing. For example when a purchase order is made, it is created in the ERP-system in use where it can be checked and modified later, whereas some certificates and the content after its reception might not be added or marked anywhere, and in worst case even the sender might have no interest on preserving these files. Also missing some document might have significant consequences especially if the retention is statutory or company has some product or service liabilities. Partly in this class is also considered how important it is to retain the information on hand to an EIM system: would it serve only as a secondary

preservation location, can an employee use a detour to get the information needed? Existence of some document might be crucial for the fulfilment of others.

*Table 1. Necessity classification*

Necessity	Explanation
1	Low
2	Medium
3	High

The recurrent use of documents can vary considerably. Retention of some information is not the responsibility of the department handling it, since sometimes activities can be done by various persons. Certain documents are such that single print or transaction is enough in order to further some process without a repetitive need to recheck or reprint the document. For example package stickers are printed and attached to the package after which the following process activities can be performed. Purchase department works with supplier demanding a confirmation of their order delivery to Valmet. These documents are an example of a document group that does not bring a verifiable value to the customer company or its processes, but is mandatory in some other way, in this case to maintain a good supplier-customer relationship. This classification also takes into account the repeated handling of the document class, not a particular, one document. High number indicates that the document type is handled often, which creates requirements for the execution of EIM system. See Table 2 for classification descriptions of recurrence value.

*Table 2. Recurrence classification*

Recurrence	Explanation
1	Most likely never
2	Few times in a year or more rarely
3	Monthly
4	Weekly
5	Daily

The current retention location (see Table 3) of a document is a worthy detail when assessing the need to use an EIM system. Information retained in locations accessible only by one employee generates a risk of a document loss and missed opportunities, for example filling in for a worker is difficult if not all information is on hand. Documents might also be diffused in the department and the general view of tasks or required activities might be missing. Also trusting the preservation of valuable documents to external parties as suppliers or transportation companies means handing over part of the management and control of own companies processes.

*Table 3. Current retention location classification*

Current retention location	Explanation
V	In some Valmet's system or software
O	Personal
P	Outside Valmet

In Appendix 12 is illustrated which documents can be and might be worthwhile to put to M-Files. X-mark after a document and its categorization marks that in principle, the certain document can be put to M-Files and it might be worthwhile to retain in the system. As can be seen, much of the common information needed by all departments and currently found from some Valmet's own system most likely would not be profitable to save to M-Files. At the moment logistics retains quite minimum of amount of document. The ones saved are saved only in employees' personal disk drive or email. Inspection sheets, testing reports and certificates might be irreplaceable evidence in the case of machine or material failures.

Purchasing and department also collects a good variety of documents with evidential quality value, though not mandatory for daily operations. Confirmation of delivery represents a document that the customer company does not require for its own processes to be carried out. This document is handled in order to maintain a hospitable relationship with supplier. Forwarding documents both have evidential value but are clearly also required if the delivery operations want to be completed successfully.

Some other factors affecting to the document handling are the information distribution and handling groups and required acceptance procedures. Some documents' handling groups might be clear due to the department and function-related duties, but these groups are not fixed. What it comes to acceptance procedures, in a matrix organisation the reporting and communication channels do not flow hierarchically but the networks are complicated and dependent on each employees and superiors' responsibilities and project participations. The acceptance procedures relate to a document route through the organisation. Some documents might need an acceptance, translation or some other editing before the final form has been reached. Depending on if there is a default route some recurrent

documents should follow, the acceptance sequence can be built and so make the flow of information more fluent and automatic.

After sales business in Valmet is extremely hectic and non-predictable; the only definite is the flow of spare parts. Products and package and order sizes vary and customers are located around the world. Lead times depend on the availability, product, order size, location of supplier, location of customer and so on. This creates a significant requirement for the usability of the potential EIM system. The amount of inbound deliveries to Vantaa logistics center, purchase orders made and the packages forwarded every year in SER is very high which demands the personnel to work according to carefully built processes with excellence efficiency. The EIM system implemented has to be able to offer automated saving, reliable functioning, easy and effective search method and good usability in order to be accepted and valued by the users. In a big company, security aspect of information needs to be considered. Some information needs to be available only to related people but also to be shared if needed.

### 3.4. Current tools in use

The business processes and their departments this thesis research is focusing on are strongly linked together by common tools, software and systems. These are serving the supply chain information flow and listed below.

- ERP-System (Baan)
- Lotus notes
- Email (Outlook)
- Lync Instant Chat and Skype

- Phone
- Stream
- VTG
- PDM and Sovelia
- VST

Enterprise Resource Planning (ERP) system is an expanded version from Materials Requirements Planning system (MRP). ERP-system can be use by different organizational levels and it integrates and controls different activities and operations such as procurement, financial transactions and material flow in and out from warehouse (Olson 2012, 4-5). Currently the ERP-system used by all of Valmet's locations is Baan. Baan was bought as a raw version and built to fit for use in the end of 1990's. Baan utilizes also a secure electronic data transfer solution called Supply Chain Master (SCM). This solution for example is used to send automatically purchase orders to suppliers that can make changes or accept the order as it is through web-based system. Through an SCM purchase order supplier can also download the latest revisions of all related sub-drawings and bills of material. Forwarding can book transportation in Baan, since it is integrated with transport companies' booking systems. Logistics utilizes SCM rarely, sometimes the package information is sent via SCM to the receiving end to keep track on the big shipments (Määttä, 2015). (Härkönen and Manninen, 2015.)

Lotus Notes is an information and document management tool used by all locations of Valmet. It holds documents, lists, process instructions, meeting memos, contracts and such archiving and sharing information. Workspaces focused for different departments and purposes can be founded and opened inside the program. However, Lotus Notes has been used since 1997 (Ylennysmäki, 2015). Mostly Lotus

Notes is used as internal tool but for example some service providers have an access to it, as well as suppliers in the claim cases from the invite of purchasing.

Other solutions supporting communication and information flow through supply chain are email, instant chats and Skype. Email software is globally widely used Outlook that also provides other tools such as calendar. Instant chat in use is Lync connected with Outlook. Lync offers current employee presence information shown also in Outlook and in addition to chat feature it can be used such as other web-dependent conversation tool Skype. Both Email and in Lync chat archive the conversations and chats held, and also provide a search possibility to track later some needed messages.

Phone is an efficient tool for communicating and getting the message through. The downside in phone calls as well as in Skype and Lync calls are that the only recollections saved after are the memories of participants, possible notes and activities performed in consequence of the call. This means that the information trustworthiness might suffer due to the lack of documentation. Also face-to-face conversations are done insofar as company's size it allows.

Above is presented the system functions in rather common use despite of department. In addition, departments and their performed activities have their task-related modules used for also for cooperation with external supply chain links. Logistics uses Lotus Notes workspace to contact Kugel & Nagel who is the warehouse service provider used by Valmet Service in Finland. The receipt feedback workspace is used by both logistics and purchasing, who solve problems arising when an incoming shipment does not match up with purchase orders or item information. Some other commonly used tools for contacting and sharing information with external interest groups are Stream and VTG. Currently drawings and commercial item data can be found from Product Data Management (PDM) and Sovelia.

Purchasing deploys Stream, web-based request-quotation tool used between sales personnel with purchasers and purchasers with suppliers. Stream is replacing old request-quotation workspace Global Item Request (GIR) located in Lotus Notes. The biggest difference between GIR and Stream tools from the employee point of view is that when using GIR, an inquiry has to be sent via either email or Baan. Stream instead combines the whole request-quotation process, only item data update still has to be done manually to Baan.

Each Stream case is numbered. Information related to case is connected to this Stream number. Requests for quotations can be made through the tool and also supplier can quote straight to the system. The supplier quotation is handled in the same way as SCM (see above), only the connection used by Stream is called Light SCM. The functionality is the same, the only exception being that the supplier needs no SCM user interface. An email link through a portal is opened along with the Stream inquiry being sent, and the supplier makes the quotation in the portal. (Härkönen, 2015.)

In the process of developing and taking Stream to use, some of the weaknesses have been for example slow functioning, uncertain operability and varying user friendliness. Stream has been implemented in Spare part operations globally during year 2015 and development and improvements are still in the making. Härkönen (2015) clears the current weaknesses resulting from for example the intricate system architecture and integration or multiple software: "The complexity of the solution is due to the fact that it pulls data from various sources and handles masses of data tables." Tool is exploited not only internally, but also externally, so possible utilization of change management among Valmet users does not offer full coverage on the end-users. This is why trainings and user instructions are shared also to other interest groups. Härkönen (2015) points out that "Stream is the first tool in Valmet SER that pulls the supplier's quotations together and archives them." Traditionally quotations received in email have stayed in email or personal folders.



Valmet Transport Gateway (VTG) is a transportation management system connecting Valmet, suppliers and transportation companies. Electronic platform enables booking for transportation of goods from Valmet transportation service contract partners to Valmet's named delivery places in Finland and Sweden. When transportation bookings are made in VTG, the shipments can be tracked and transportation status is being up-to-date and easily checked in the platform. VTG is advantageous supply chain visibility and information flow tool, since it reduces mistakes made during transportation process, reduces repetitive inquiries for tracking numbers and eases the creation of reliable reports. (Moijanen, 2015.)

Valmet Search Tool (VST) is a reporting tool offering business statistics and reports for the use of the whole company. This business intelligence system is acquired from a Software company Qlik and version configured for Valmet use was named Viewpoint. VST is one tool built inside the Viewpoint among others (Härkönen, 2015). With VST for example delivery times, price development, purchase history and spending can be followed and views modified based on the requirements. VST information is based on data pulled together from other tools in use and changing the data in the system is impossible.

### 3.5. EIM System alternative

Valmet has various ECM and EIM solutions in use. There is not a uniform company-wide policy made regarding one system to be implemented. During the stage of research it was found out that one certain EIM system has been under pilot stage for few activities. The system was chosen to be under preliminary evaluation based on the foundations laid by this thesis.

### **M-Files system features**

M-Files is an Enterprise Information Management (EIM) tool developed by Finnish software company M-Files Corporation. In order to reliably but explicitly answer to the research questions set on Chapter *Research method and restrictions*, it is important to clear the distinction of some terms on the foundation of the thesis. What EIM is compared to concepts such as Enterprise Content Management (ECM), Document Management (DM), Content Management (CM) and Records Management (RM) is explained in outline in Chapter *Information Management concepts and communication*. In this thesis, though M-Files is named as EIM, reader should notice that the tool features also ECM and DM dimensions. (What is M-Files, accessed 2015.)

Lifecycle management is arranged in M-Files in a way that by searching or scanning through documents, only the most recent version of each can be seen and user does not have to ponder between many revisions. All revisions can still be found from history log and restored if needed. When a documents are saved to one system instead of many separate folder not communicating with each other, the risk of duplications reduces. Automated document and workflow processes enable functioning contract lifecycle management and acceptance procedures with notification attribute can be built. Acceptance procedures no longer depend on the physical location of the approver, since E-signature protocol is supported. (ibid.)

E-signature feature and lifecycle management impacts positively on the information safety and security as well as to quality. Permission management effectively restricts the user groups to see only documents needed and allowed based on for example the document metadata. User groups can be built to update automatically. Quality is insured by having always the latest version of a document available and the lifecycle trackable. If document metadata is filled well, documents are easy to find for example in a time of an audit visit. It is possible also to create document templates to M-Files that eliminate mistakes made in a process documentation. Document

templates promote the availability and completeness of all required information in standardized processes. (ibid.)

System success is dependent on the applicability and usability. No retention system is feasible if the main users are not able to use it. Saving to M-Files in its simplest is similar to saving to a normal hard disk location and it can be done by customary drag and drop –action. Before document is saved, metadata has to be filled. Based on the metadata, what the document is, M-Files is able to reorganize the documents based on the search made by users. Traditional folder scheme does not exist which means users do not have to remember the location of each document, only what document is needed. M-Files utilizes an optical character technology (OCR) that means the search words can also be inside the document, not only on the title or metadata. OCR also allows users to take picture of the document to be saved and it will be searchable in M-Files. File formats such as TIFF, JPEG, BMP, PNG and GIF are supported. Search results are ranked based on the correspondence so the most relevant documents are shown first. (ibid.)

The systems infrastructure has three different deployment alternatives: on-premises, cloud or a hybrid model. On-Premises deployment utilizes the existing IT infrastructure of the company, whereas a cloud system is operated as a Software as a Service (SaaS) model. Cloud deployment is flexible and does not require as big start-up investment as a construction of own server base as on-premises deployment. For users, M-Files is offered as three different versions; it can be installed to a computer, used in a web browser or download a mobile app to a smart phone. (ibid.)

As M-Files can be used with different devices, the system is always on hand. No matter if user is on installation site, workplace, home or travelling, necessary documents are reachable. Needed documents can be opened and edited in an offline mode if Internet connection is not available. The next time a device is connected to a network, M-Files automatically syncs the documents to the cloud. M-Files is a Microsoft partner and integrates tightly with Microsoft Office. In spite of Microsoft

partner hood, M-Files can also be used with Mac and Linux and the interface outlook is similar no matter the operating system. Microsoft partner hood and look alike interfaces ease the user training, since many familiar commands for Windows users serve also in M-Files. (ibid.)

When the system is installed, it adds an M-Files a tab to MS Office programs where different operations such as saving to or exploring in M-Files can be performed when needed. With Outlook, hyperlinks and co-authoring links can be sent to external parties. Receivers are able to view and edit the documents via OneDrive and no duplications of a document exists if not wanted. M-Files can be integrated also with other company-required systems such as ERP-, accounting, CRM- and ECM-systems. In Microsoft Outlook, M-Files Vault and smart folder can be utilized and user create his own subfolders with needed categorization. With drag-and drop “like” user can move attachments or emails to the folders and M-Files is able to autofill the metadata sheet automatically. (ibid., Office Integration 2015)

The interface of M-Files is made to look clear with popular features on hand already on the opening view. Users are allowed to modify the dynamic views based on their preferences and requirements with features such as filters. The interface includes a preview mode, so while searching, user does not have to rely only on the compatible metadata but the confirmation of the right document can be done instantly. This preview works for most popular file types such as Office documents and PDF. While editing, documents can be “checked out” as a way to prohibit others to do edits simultaneously. “Checking in” allows others to see and edit the current revision of a document. Simultaneous editing is also possible and editing without making definitive changes by for example highlighting text or inserting comments. (ibid.)

### **M-Files at Valmet**

SER Valmet deploys cloud concept of M-Files. At a Valmet level, the hybrid level is reached due to few on-premises installations at Automation business line. The estimated user amount is around 630 users and the prospective growth in 2016 is to over 1800 users, if the system is chosen to be implemented M-Files has already been piloted in Valmet's SER Mill and Roll functions, from which some users were interviewed. The initiative in these functions started from a need to find better way to manage and share service reports and proposals for further service actions in 2011. The EIM system has been configured to suit for Valmet use with a V-Cloud initiative. (Jurvanen, 2015.)

After the initiative in 2011, the pilot program was launched in 2013. Workshops were held to create the first conception of how well can the system respond to the needs. Chosen users, a steering group was given a chance to get a sight of the version of M-Files that would come into use and test the system. For wider use M-Files was taken in the spring of 2014 in the whole Mill department, from service specialists to product specialists, translators, projects managers and Mill customer factories. Users were given trainings to introduce the basics of the system and later on the learning was based on peer support and the guidance of support personnel from Valmet and M-Files Corporation. Last two years reports were fed into the system. (Seijesvirta, 2015.)

Mill projects repairs and maintenances to factories. From each project, a service report is made and documented. Service report is made by a service specialist according to a template and saves the document to M-Files. Project manager checks the report before it is forwarded to the translator. After translation and all corrections, the report is ready to be sent to customer. Customer contact person and other customer specific information is extracted to the templates from CoMPass, a system holding customer and supplier information and details. (Taivassalo, 2015.)

Mill is using acceptance procedures with workflow processes in order to finalize the documents before sending to external party, the customer. Customer receives either a notification of a new report or a link to the document, depending on whether they are utilizing M-Files themselves or have a permission to view their reports in M-Files. Valmet employees working closely with Mill department, for example Roll services, also has few users with an access to M-Files. Some information such as price details are restricted to a user group. Otherwise all needed information will be available if the correct key words or codes are known. M-Files instructions for users are added to a Notes workspace. (Ollila, Malmberg & Pöysti, 2015.)

## 4. Results and discussion

### 4.1. Advantageous features and benefits of M-Files

M-Files can offer a great deal of advantages for Valmet and the departments under search compared to the current state. The absence of an employee no longer creates an information gap around which a possible substitute has to work. Needed documents would be available without permitting others to have an access to personal emails or folders. The older versions of documents do not disappear when changes are made because of history log and editing features, even though duplications would not exist. History log and search feature also increase the level of document traceability. Search tool is already familiar from Google and multiple word search is possible.

While searching for the right document, M-Files organizes the documents based on how well do they match with the input keywords. If the user is not sure which document found is the one looked for, a preview feature speeds up the scanning. Thus user does not have to open or load every document in order to be confirmed it to be the correct one. OCR technology creates a prospect that finally one day sold products all information generated during the whole process from sales to the final delivery can be traced. The design of the basic view of M-Files pursues simplicity and functionality which again eases the deployment for users.

A global company with wide range of services demands a complex though generic system in order to meet the requirements of the system users. Logistics, purchasing and forwarding all possess a requirement of being able to utilize EIM system outside the main workplace. M-Files satisfies this need by offering mobile and web browser versions of the system as well as possibility to an offline use when Internet is not

available. The work demanded from users to keep the files updated is minimized by automatic synchronization.

Integration both with Microsoft Office and Outlook is a feature that create value for the possible users, since MS Office file types and Outlook are currently in use at Valmet. For example from Outlook, an M-Files Vault and smart folder features create more automatic but user controlled saving. Additional M-Files tab makes the system more visible and familiar for users and way to save files as normally on a disk drive from almost any application. This lowers the step to take the system into wider use without too long trainings and introduction. All departments have some templates for documents in the repetitive use and the metadata prefill feature offered for such speed up and streamlines the saving process in hectic business.

EIM solution can be mistakenly considered to serve mainly the main users, employees of Valmet. If EIM system implemented would be M-Files, also external parties might be substantially effected by information sharing solutions used. The question is, whether the effect has a positive or a negative tune and whether the change can create value to external parties such as suppliers, transportation companies and inventory service provider. One big advantage is the quality aspect and decrease of inquiries. Documents are not lost are possibly available for all parties earlier than before due to automated workflows, more effective and easier search technique and wider group of people able to reach the needed documents. Admin tool helps to manage the visibility of documents with noteworthy information with restricted privacy.

As a company, M-Files is able to offer an EIM solution requiring only small configuration to suit for Valmet's use. As it already has been used in certain departments, peer support and user experiences of Valmet users can be utilized in the planning and implementation phase. If the implementation is completed carefully and efforts are done to configuration if the system to support the sub processes and complete after sales process. A new tool can also produce possibilities



that were not on record in the system decision phase. Company investments should be utilized as efficiently as possible and encourage users to sustain a development mode and support company's continuous improvement targets.

## 4.2. Risks and things to consider

This thesis does not provide a complete research of how to reach a complete product traceability along the internal processes nor an answer of whether M-Files is the one and right system to be taken into use. However, this writing does comprehend some of what needs to be evaluated when an EIM-system is considered. A good understanding of possible risks and grasp of questions to be answered is demanded before an implementation.

In the company as Valmet the amount of possible M-Files users can increase fast, since the easy usability does not demand long training periods and mandatory courses for new users. If the amount of users is growing as fast as is evaluated to be possible, the system requires to be deployed as hybrid in order to serve well (Jurvanen, 2015). Endless increase of server space might conclude to be more expensive yet maybe even unsuitable for the use, as building up own infrastructure to support the cloud services and to deploy hybrid model. Increase of the EIM-system invocation leads also an increase in IT-personnel work load. In addition to the cost of the system company should prepare for a possible need for a new employee resource, if proper implementation and monitoring of the system functioning is seen important. The above points require decisions to be made in higher level in the organisation.

The relative price of M-Files is dependent on the user quantity. If the system is to be deployed, it needs to be considered whether sufficient utilization rate can be achieved, how this can be measured and increased on demand. Employees need to

be directed to use the system as a primary retention location for the documents having value in the process from purchasing to the product delivery and encouraged to re-evaluate their work methods to utilize the available tool. A danger of change resistance is concrete, since during last few years new systems as Outlook, Sharepoint, VST, Stream and VTG have been taken into use. Employees' capability of adjusting to change and also the skills of change leaders and managers are tested hard.

Employees in logistics, purchasing and forwarding are working rather independently and used to be responsible of the results of their tasks. Planning of own work is significant especially if M-Files is wanted to be used in a location outside "internet connection. In logistics and purchasing, documents retention is dependent on the employee and their work methods; common retention policy of documents received by email is missing. This generates a risk of lacking a common policy of what should be found from the EIM system in use. The end result can be that there are either documents missing or unnecessary documents are added. Both alternatives raise some challenges. Missing documents does not further the traceability of a product and its information and unnecessary documents are a waste of resources and the capability of the system.

Document naming policy is a quite low risk in the M-Files. Due to the OCR-technology, even documents not following a design name convention can be found. For user friendliness, good naming policy does ease the search of information, since preview mode is not necessary to secure the discovery of correct document. Metadata sheet slows down the saving process and when incorrect or inadequate metadata is filled, document search become more difficult the more documents are retained in the system. Increasing the utilization of document templates when possible might increase the usability quality.

Forwarding has the most extensive document retention of the three departments. The file all certificates and many other documents are created during forwarding

process to physical folders that finally are moved to the main archive. If an EIM-system is implemented, a decision needs to be made whether some of the old documents are added to the system or only documents created after the deployment are retained. For example, Mill reports from preceding two years were retained to M-Files. Documents located at the moment in personal folders and email in an electronic format require quite little work to be moved to M-Files, but transferring documents from paper format to electronic format is a big job. Such a task might end up being more expensive and employing than anyone can expect.

A big question is that what is the target of bringing in a new EIM-system? Is the tool an addition to old systems or is the final goal to replace some old ones? M-Files is definitely suitable for basic document retention needs of the departments, it offers good security, variety of deployment alternatives, easy usability with low user training requirements among other advantages. However, if the system is ought to replace a tool such as Notes, the capability and functionalities are to be evaluated hard. Replacing such a long-term system as Notes is an extensive task requiring a long time frame for implementation. Notes does have special features not found in M-Files, such as attachment embedding. Embedding enables adding attachments in between the text, not like in for example in Outlook, where attachments are listed in a separate box. Also, Notes includes documents that are not necessary, though useful for business processes. Retaining these documents in a new EIM-system might not be profitable and good utilization of the retaining capacity.

A common wish from all current and prospective users was to receive a decision from superior regarding the EIM-system to be put into operation. At the moment the main reason slowing down the process of taking M-Files into use seems to be the lack of superior level resolution of should departments start preparing for system implementation or wait. With the current situation, resources used to the system do not measure up completely with the value it gives. One department along the internal processes using the system does not differ from the current way of work

except moneywise. M-Files is rather expensive, so a decision would push organizations to evaluate the potential user quantities and authorize IT or another division or department to make a company level contract with M-Files. The more potential users are found, relatively the less expensive the system will be and the more negotiating power Valmet will have in contract negotiations and the more approving departments could prove to be towards the system.

### 4.3. Discussion and further studies and actions

For further researches can be recommended to extend to the sales department, spare part packages and also to other locations of SER than Finland and Sweden. In theory, a system appropriate in one location should function also in others with similar processes but in reality the activities can and sometimes even have to be performed differently depending on the supply chain network. Also depending on how fast the possible implementation of M-Files progresses, an extensive comparison of one or more EIM-systems applicability to M-Files' at Valmet could be fruitful for one focusing deeper in the IT-functionalities of the systems.

The customer company should the most importantly clear out whether they want to proceed with the system studied. If a document retention system is wanted to be implemented, superior level decision and sharp project management is mandatory. Before an EIM system is taken into comprehensive use, clear instructions and limitations of the use for each department, process or activity. This is to secure that the system is understood as a retention place for the documents and information that does bring value to the company, especially in a longer term. The danger is that when tracking a path of one product, many of the documents found does not matter later, for example all emails changed or fuzzy pictures if better ones are available. Good retention guidelines and capable system implementation could be created for example with the help of a project group including both current users and a specialist to build trust on the system capability as well as future users to secure an effective communication flow between the developers and end users.

Students of different fields could also find interesting to make more extensive and detailed listing of all documents required along the supply chain. By this time at Valmet SER none such has been made though professionals of each department and process might have a rather good knowledge of what is needed for example to deliver to a product to a certain country or to prove one to be EU originated. This would have built up Appendix 12 to such extent that the subject of this thesis would have gotten too little attention.

The challenge faced during the research phase was the scattered information due to a matrix organisation. Valmet SER has worker and managers in many locations even in Finland and information nuggets are spread even further. It seemed that no one had a clear picture of everything regarding document retention and EIM-systems in the restricted research area nor in the whole company. Some people approached were not reached despite of several tries and sometime possible sources just directed the writer to a next person. With perseverance enough information was gained in order to piece together this thesis.

Another challenge during the research and writing process was author's time control and organisation skills. Trying to reach a basic level IT understanding of the subject area and terms and balancing with other work challenged the author's motivation and maintaining the will to be completed with the study. The thesis reliability had a potential risk of decrease due to the purchasing background of the author. This risk was known from the beginning and reduced, though not got totally rid of by perseverant and concentrated focusing on one subject department at a time. The reliability of the results has reached an appropriate level due to the research method and restrictions chosen. With the same research method and restrictions, consistent results will be received due to the same research subject systems, processes and work environment.

The validity of the research is good. Qualitative research enabled a good overview from a diverse group of users and specialists and taking into account information

received from participatory observations and conversations. Using diverse source group instead of surveying a homogenous group share more versatile information due to different demands, work culture and location in internal activity chain.

Qualitative research enabled the author to answer to the research questions and to give further suggestions for actions and research subjects with a good insight of the research area. As a hindsight, author might have settled to restrict the study to one department instead of three. Though the processes and activities differ, the system, tools and document formats are similar. More restricted research could have been applicable for the other departments.

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# Appendices

## Appendix 1. Supplier's quotation

### Tarjous

**Asiakas**  
Valmet Technologies Oy  
Rautpohjankatu

40700 JYVÄSKYLÄ  
FINLAND

**Toimitusosoite**  
Valmet Technologies, Inc., Jyväskylä  
RAUTPOHJANKATU 1

40700 JYVÄSKYLÄ  
FINLAND

**Sivu**  
1(1)

### Viitteenne

**Viitteenne**

**Pvm**  
01.09.2015  
**Kyselyynne**

VPK Oudegem PM6

**Tarjous nro**  
1854679

**Versio**  
1

**Alv-rek.nronne**  
FI15391809

### Viittemme

**Myyjä**

**Toimitustapa**  
Auto

**Toimitusehto (Incoterms 2010)**  
DAP - Delivered At Place  
JYVÄSKYLÄ

**Pvm**  
01.09.2015

**Voimaasaoto päättyy**  
31.10.2015

**Maksuehto**  
45 pv nro laskun päiväyksestä

**Asiakas nro**  
E102152

Toimitusaika on paras arvomme. Jos päivien määrä on nolta, tuote on varastossa välilyntiehdoin.

RN	Tuote	Asiak Pos/Art	Toim.aika työpäivää	Määrä	Nettohinta	Summa
1	3729 400 l/min		25	1 KPL	5 592,87	5 592,87

**Tuotteen arvo EUR**  
5 592,87

**Rahiti** 233,00  
Arvonlisävero lisätään laskuumme

## Appendix 2. Order confirmation

**TILAUSVAHVISTUS**

Numero 151183 Sivu 1  
Päiväys 2.11.2015

<b>Laskutusasiakas</b> VALMET TECHNOLOGIES OY YHTIÖ 636 PI 1007  40101 JYVÄSKYLÄ minna.kauppi@valmet.com	<b>Toimitusasiakas</b> VALMET TECHNOLOGIES OY KUEHNE NAGEL / VALMET TECHNOLOGIES Logistiikkakeskus, Tikkurilantie 141,ovi 16  01530 VANTAA
--	---

Kiitämme tilauksestanne ja vahvistamme sen seuraavasti:

Viite	636/661234	Maksuehto	45 päivää netto
Merkki		Toimitustapa	kiitolinja
Tilauspäivä	2.11.2015	Toimitusehto	NOL Espoo Fin01
Tilaaja	MINNA KAUPPI		
Käsittelijä	<input type="text"/>		

Muilta osin noudatamme Teknisen Kaupan Liiton yleisiä myyntiehtoja.

Tuotekoodi	Tuotteen nimi	Toimitusaika	Määrä	A-hinta	Al-%	Yhteensä
<input type="text"/>		4.11.2015	2 KPL	318,20		636,40
VAL0176470	70 MM, 4500 N, ROSTERI					

636,40

ALV 24,00 % 152,74  
Yhteensä EUR 789,14

## Appendix 3. Supplier's delivery list

<b>Lähte</b> 10						
Asiakirjan päivämäärä 22.10.2015	Asiakasnumero 60002209	Myyntitilaus 1010012701	Sivu 1/1			
<b>Toimitusosoite</b> VALMET TECHNOLOGIES OY OY KÜHNE NAGEL LTD. LOGISTIIKKAKESKUS TIKKURILANTIE 141 OVI 16 01530 VANTAA		<b>Laskutusosoite</b> VALMET TECHNOLOGIES OY COMPANY 636 SERVICES, COMPANY 636 P.O.BOX 587, RAUTPOHJANKATU 40101 JYVÄSKYLÄ Suomi				
<b>Toimitustapa</b> Kiitolinja, kappalestavara (asiakasrahti)	<b>Merkki</b>	<b>Toimituspäivä</b> 22.10.2015				
<b>Toimitusehdot</b> Incoterms © 2010 / FCA	<b>Ostotilaus</b> 636/649467	<b>Asiakkaan Y-tunnus</b> 15391809				
<b>Viitteenne</b>	<b>Yhteyshenkilö</b>	<b>Toimitusosoitteemme</b> Suomi				
<b>Toimipisteemme</b>						
<b>Rivino</b>	<b>Nimiketunnus</b>	<b>Kuvaus</b>	<b>Tilattu</b>	<b>Yksikkö</b>	<b>Toimitettu</b>	<b>Jäbjelle jäävä</b>
2		WIN3140889.00 Hydr Cylinder Pintakäsittely FeSa2½ EP120/2 RAL7011 Nimikenumeronne:WIN3140889	1	kpl		0
4		WIN3140889.00 HYDRAULIC CYLINDER Pintakäsittely FeSa2½ EP120/2 RAL7011 Nimikenumeronne:COA3064252	1	kpl		0


22. 10. 2015

Checked and packed by

## Appendix 4. Waybill

Lähtetiedot		Asiakasno Kundnr		Päivämäärä Datum		Numero Nummer	
		Sopimusnumero Avtalsnr		22.10.2015		60000	
		Lähtetiedot Avsändarens referens		Lähtetiedot Avsändarens referens		636/649467	
Vastaanottaja Mottagare		Asiakasno Kundnr		Rahdin kuljettaja ja / tai Huoltaja Transportföretag och / eller Speditör			
VALMET TECHNOLOGIES OY		OY KYHNE+NAGEL LTD., LOGISTIKKAKES		KIITOLINJA			
TIKKURILANTIE 141, OVI 16		01530 VANTAA		Tavarain toimittamiskoite Godssets leveransadress			
Lähtö- ja lastauspaikka Avs. och lastningsp.		Määräpaikka Bestämelseort		Toimituslauseke Leveransklausul			
01530 VANTAA				Rahdinmaksaja Frakttalare		Asiakasno Kundnr	
				Vastaanottaja		Sopimusno Avtalsnr	
Merkki / nr		Kollituku ja laji		Sisältö, ulkomitat ja VAK		Brutto, kg	
Märke / nr		Kollitantaf och -slag		Innehåll, yttermått och ARD-ansmärkingar		Täryuus, m <sup>3</sup>	
		1 PAL		SYLINTEREITÄ		51	
Vaihtokelpoinen FIN-lava, kpl Godk. FIN-pall, st		Kollit. yht. Kollitantaf tot.		Lavametri Fraktmeter		Brutto yht. tot. kg	
		1				51.00	
Kuljetusohjeet Transportinstruktioner						Rahdiuspano Frakttikt	
						51.000	
Muut tiedot Tillägsuppgifter						Jälkivaatimus, maksuvuote Bel.ref för efterkrav	
						Jälkivaatimus, tilino Kontorr för efterkrav	
						Jälkivaatimus, Efförkrav	
						Rahdi Frakt	
						Lisät Extra avgift	
						+ Alv. Moms	
Lähtenumerot		Käsitteen yht. Kontantaf tot.					
10P							
Varaukset Förbehåll		Käsitsemaksu, pvm ja kuittaus		Käsitsemaksu, pvm ja kuittaus		Käsitsemaksu, pvm ja kuittaus	
		Kontantaf betalning, datum, ort och kvittering		Kontantaf betalning, datum, ort och kvittering		Kontantaf betalning, datum, ort och kvittering	
1	2	3	4	5	6	Knnro, kolip, HRnr, hemort/LY-luutus AS-signum	
Vastaanottaja, pvm, aika ja allekirjoitus			Kuljettaja, pvm, aika ja allekirjoitus			Lähtetiedot, pvm ja allekirjoitus	
Mottagare, datum, tid och underskrift			Chaufför, datum, tid och underskrift			Avsändare, datum och underskrift	
23. 10. 2015						22.10.2015	
Nimensevennykset Namnförtydliganden							

Appendix 5. Goods received note



**GOODS RECEIVED NOTE**

Order: 649467

220053

2J-33-5 MM

Page 1/2

Services

Supplier:

Supplier: 507578 Forwarder: **Kiitolinia**

Order: 649467 Reference:

Date: 23-10-2015

Buyer:  Tero

Item	Weight	Critical	Ord.qty	Del.qty	Unit	Received	Del Date	Wk/Yr	Inspect
<p>Purchase Order 649467 totally 4 positions</p> <p>Delivery Dates: 18-08-2015 - Pos 1, 2, 3, 4</p> <p>Warehouse: Y01 LC NOC Inventory Vantaa</p>									
VAL0160315	0 kg		1	0	PCE	<div style="border: 1px solid black; width: 40px; height: 15px; display: inline-block;"></div>	23-10-15	43/15	NO 1
<p>Location: 1A1003</p> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p>Sales Order: 803148 201501593; <div style="border: 1px solid black; width: 80px; height: 15px; display: inline-block;"></div></p> <p>Position: 1</p> <p>Del Date 13-07-2015 Ship Completed 'No'</p> </div>									
WIN3140889	17.86 kg		1	0	PCE	<div style="border: 1px solid black; width: 40px; height: 15px; display: inline-block;"></div>	23-10-15	43/15	NO 2
<p>HYDRAULIC CYLINDER</p> <p>WIN3140889</p> <p>Location: 1A0701</p> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p>Sales Order: 803165 4502133158; <div style="border: 1px solid black; width: 80px; height: 15px; display: inline-block;"></div></p> <p>Position: 3</p> <p>Del Date 02-09-2015 Ship Completed 'No'</p> </div>									
VAL0363287	0 kg		1	0	PCE	<div style="border: 1px solid black; width: 40px; height: 15px; display: inline-block;"></div>	23-10-15	43/15	NO 3
<p>Connection SAE 1/2-6000psi,</p> <p>FDmin=809mm, FDmax=1159mm</p> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p>Sales Order: 803174 388/506395; <div style="border: 1px solid black; width: 80px; height: 15px; display: inline-block;"></div></p> <p>Position: 1</p> <p>Del Date 30-09-2015 Ship Completed 'No'</p> </div>									
COA3064252	12.1 kg		1	0	PCE	<div style="border: 1px solid black; width: 40px; height: 15px; display: inline-block;"></div>	23-10-15	43/15	NO 4
<p>HYDR.CYL.</p> <p>*****</p> <p>Rush, as soon as possible</p>									

## Appendix 6. Confirmation of reception for supplier

FI 05800 Hyvinkää		Datum/Date : 18.08.2015		
		Kunden-Nr./Customers-No. : 27239		
		Besteller/Attention : Mrs. P. Viennysmäki		
		Bestell-Nr./Order-No. : 636/634935		
		Auftrags Nr./Conformation : 52 856		
		Ansprechpartner/Contact : [ ]		
		Seite/Page : 1		
Zertifiziert nach: DIN EN ISO 9001:2008 und DIN EN ISO 14001:2004				
<b>LIEFERSCHEIN / PACKINGLIST 21566</b>				
Auftrags Nr./Conformation				
Lieferbedingungen / Terms or oelivery		: ex works, packing included, DSV Road		
Verpackung / Packing		: 1 pallet net 530/gross 558 kg dim: 0,8 x 0,8 x 0,7 m		
Pos.	Art-Nr.	Artikel Bezeichnung	Menge	Einheit
Pos	Item Code	Description of goods	Quantity	Unit
1	[ ]	STAINLESS STEEL	2103	lfm
105 x 0,305 mm alloy no. 1.4310, with appr. 1500-1700 N/gmm tensile strength with deburred and grinded edges VAL0242999				
WE CONFIRM THAT WE HAVE RECEIVED THE GOODS, WHICH ARE MENTIONED IN THIS DELIVERY NOTE.				
HERE IN FI 05800 Hyvinkää		IN August 2015		
_____	_____	_____	_____	_____
date		signature		company stamp
Empfangsbestätigung				

## Appendix 7. Measurement records

[ ]		Mittapöytäkirja			
Tilausnumero		636/634935			
Piiir.numero		RAUZS05950.02			
Nimike		Ulkoalumiini			
numero	pallo koneistuksen jälkeen	ulkohalk. koneistuksen jälkeen	pallo pinnoituksen jälkeen	ulkohalk. pinnoituksen jälkeen	Sul.nro.
	Ø 565 D7	Ø 650 -0,05	Ø 565 D7	Ø 650 -0,05	
3	565,32	649,95	565,32	649,98	J2573
tehty		M.H			
pvm		17.3.2015			



Appendix 8. Outbound shipment photo



## Appendix 9. Non-wood Certificate



Service / Miia Hughes

CERTIFICATE

1 (1)

November 9, 2015

**CERTIFICATE OF NON WOOD PACKING MATERIAL**

**We hereby certify that below mentioned package is of non-wood packing material.**

Package references:

- 636/810520

- 27 kg

Valmet Technologies, Inc.  
Services

Miia Hughes

## Appendix 10. Certificate of Origin

1 Consignor - Expéditeur - Expedidor Valmet Technologies Oy Rautopohjankatu 40700 Jyväskylä Finland	No. E00 <input type="text"/>	COPY
2 Consignee - Destinataire - Destinatario Valmet (China) Co., Ltd. FA-Unit, 688 Baofeng Road Xuhang Town, Jiading District 201809 SHANGHAI CHINA	<b>EUROPEAN COMMUNITY</b> COMMUNAUTÉ EUROPÉENNE - COMUNIDAD EUROPEA <hr/> <b>CERTIFICATE OF ORIGIN</b> CERTIFICAT D'ORIGINE - CERTIFICADO DE ORIGEN	
	3 Country of Origin - Pays d'origine - País de origen European Community -Sweden	
4 Transport details - Informations relatives au transport - Datos relativos al transporte (Optional)	5 Remarks - Remarques - Observaciones	
6 Item number; marks, numbers, number and kind of packages; description of goods  VAL0136563 PRESS. VESSEL HEX SCREW BUMAX	7 Quantity  60 PCE	
8 THE UNDERSIGNED AUTHORITY CERTIFIES THAT THE GOODS DESCRIBED ABOVE ORIGINATE IN THE COUNTRY SHOWN IN BOX 3 L'autorité soussignée certifie que les marchandises désignées ci-dessus sont originaires du pays figurant dans la case No. 3 La autoridad infrascrita certifica que las mercancías abajo mencionadas son originarias del país que figura en la casilla no. 3  CENTRAL FINLAND CHAMBER OF COMMERCE  JYVÄSKYLÄ 05.05.2015  Place and date of issue; name, signature and stamp of competent authority Lieu et date de délivrance; désignation, signature et cachet de l'autorité compétente Lugar y fecha de expedición; designación, firma y sello de la autoridad competente		



ANN

## Appendix 11. Export invoice



INVOICE  
November 5, 2015

No 636/100/53626800 Page 1/2

Services / PPPEUSLFI / 911511

Export Invoice Ver. 1.281

<b>Contact person</b> Sanna		<b>Our reference</b> 636/808870	<b>Customer number</b> 970400									
<b>Invoice Address</b> VAT		<b>Customer</b> VAT	320200703501733									
Valmet Paper Technology (China) Co. Ltd 688, Baofeng Road, Xuhang Town, Jiading District, 201809 SHANGHAI P.R.C Shanghai CHINA		Valmet Paper Technology (China) Co., Ltd. FA-Unit Leimin Qian No.2 Hanjiang Road 214028 WUXI CHINA										
<b>Delivery address</b> VAT		320200703501733	<b>Forwarder</b> Geodis <b>Way of delivery</b> By ocean freight <b>Terms of delivery</b> FCA Jyväskylä Incoterms 2010 <b>Other terms</b> Orgalima S 2012									
Valmet Paper Technology (China) Co., Ltd. FA-Unit No.2 Hanjiang Road 214028 WUXI CHINA		<table border="0"> <tr> <td><b>Dispatch Country</b></td> <td><b>Destination Country</b></td> </tr> <tr> <td>Finland</td> <td>China</td> </tr> <tr> <td><b>Shipping Date</b></td> <td></td> </tr> <tr> <td>November 5, 2015</td> <td></td> </tr> </table>			<b>Dispatch Country</b>	<b>Destination Country</b>	Finland	China	<b>Shipping Date</b>		November 5, 2015	
<b>Dispatch Country</b>	<b>Destination Country</b>											
Finland	China											
<b>Shipping Date</b>												
November 5, 2015												
<b>Your reference</b> 388/521567												
<b>Terms of payment</b> Net 30 days from invoice date <b>Due Date</b> December 5, 2015		<b>Overdue interest %</b> 8.50										
<b>Package Type/Marks and Numbers/Note</b>		<b>Dimensions(cm)</b>	<b>Gross Weight(kg)</b>	<b>Net Weight(kg)</b>								
Box, plywood / 388/521567, stock item/Peng Zhang 30.10. Geodis Ocean freight Number of Packages: 1		897x29x40	438	253								
				<b>Volume(m3)</b> 1.041								
<b>Position and item</b>	<b>Quantity and unit</b>	<b>Currency</b>	<b>Unit price</b>	<b>Line total</b>								
2	COA6039625 20 PCE	CNY										
APPLICATOR ROD D15 VMR 0.35/30 Commodity code: 84399900 Country of origin: Finland Material / Standard / Size: Cr on SS / VALMET / AS=8810 MM												
Net		CNY										
VAT		0.00 %	CNY									
Total		CNY										
Please state with your payment: 636/100/53626800												
Export												
05.11.2015, JYVÄSKYLÄ Valmet Technologies, Inc., Services												
VAT ID FI15391809												

Valmet Technologies, Inc.  
Services  
PO Box 587  
Rautapohjankatu  
40101 JYVASKYLÄ  
FINLAND

Phone +358 (0)1067 20000  
Direct +358 1067 26393  
Telefax +358 1067 25335  
sanna.hautala@valmet.com

Bank: SEB, Singapore  
Account No: 714455-49  
SWIFT/BIC: ESSESGSG


Business ID FI15391809  
Corporate Head Office address  
Kaillasatama 5  
PO Box 11  
02150 ESPOO  
FINLAND



INVOICE  
November 5, 2015

No 636/100/53626800 Page 2/2

Services / PPPEUSLFI / 911511

Position and item	Quantity and unit	Currency	Unit price	Line total						
<table border="1"> <tr> <td>Contact person</td> <td>Our reference</td> <td>Customer number</td> </tr> <tr> <td><input type="text"/> Sanna</td> <td>636/808870</td> <td>970400</td> </tr> </table>					Contact person	Our reference	Customer number	<input type="text"/> Sanna	636/808870	970400
Contact person	Our reference	Customer number								
<input type="text"/> Sanna	636/808870	970400								
										
VAT ID FI15391809										

Valmet Technologies, Inc.  
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Telefax +358 1067 25335  
sanna.hautala@valmet.com

Bank: SEB, Singapore  
Account No: 714455-49  
SWIFT/BIC: ESSESGSG

Business ID FI15391809  
Corporate Head Office address  
Keilasatama 5  
PO Box 11  
02150 ESPOO  
FINLAND

## Appendix 12. Document classification

Department	Document/Information	Necessity	Recurrence	Current retention location	Suitability		
Common	Other reports	3	2	P, (O)			
	Drawing	1	5	V, (P, O)		X	
	Bill of Material	1	5	V, (P, O)			
	Item data	1	5	V, (P, O)			
	Receipt feedback	2	4	V			
Logistics	Material certificate	3	1	P, (O)		X	
	Magnetic particle testing reports	3	1	P, (O)		X	
	Outbound shipment photos	3	3	O, (P)		X	
	Pakkalista	1	4	V, (O)			
	Waybill	2	3	V, O, (P)		X	
	Package label	1	1	O, (V)			
	Picking list	1	3	V, (O)			
	Supplier's delivery list	2	2	O, (V)		X	
	Purchasing	Pressure vessel documents	3	3	P, (O)		X
		Flanged shaft inspection reports	3	3	P, (O)		X
Confirmation of delivery		1	2	O, (P)			
Order confirmation		2	4	P, O, (V)		X	
Bearing certificate		3	2	P, O		X	
CCC Certificate		3	3	V, P, O		X	
Quotation		2	2	V, P, O		X	
Reclamation		2	2	V, (P, O)		X	
Contracts		3	3	V, O, (P)		X	
Purchase order		2	4	V, O, (P)		X	
Forwarding		Insurance claim	3	2	V, O, (P)		X
		Export invoice	2	2	V, (P, O)		
		Long-term agreement	3	3	V, P, (O)		X
	Country of origin certificate	3	3	P, (V, O)		X	
	Non-wood certificate	3	2	V, O, (P)		X	
	Other certificates	3	2	V, P, (O)		X	

## Classification

## Necessity

- 3 High
- 2 Medium
- 1 Low

## Recurrence

- 5 Daily
- 4 Weekly
- 3 Monthly
- 2 Few times in a year or more rarely
- 1 Most likely never

## Current retention location

- V In Valmet's system or software
- P Personal (Email, folders)
- O Outside Valmet