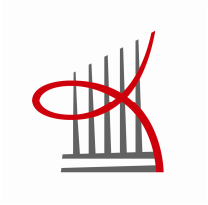

MAC e-Procurement

Rami Salminen

Thesis
March 2015
Teknologiaosaamisen
johtamisen ylempi AMK -
tutkinto

TAMPEREEN AMMATTIKORKEAKOULU
Tampere University of Applied Sciences

TIIVISTELMÄ

Tampereen ammattikorkeakoulu
Teknologiaosaamisen johtamisen ylempi AMK -tutkinto

RAMI SALMINEN
MAC e-Procurement

Opinnäytetyö 58 sivua.
Maaliskuu 2015

Lopputyön aiheena on hankinnan tehokkuuden lisääminen globaalisti Metso Minerals Oy. Työssä kuvaillaan kuinka sähköinen hankintaprojektin hyväksymisprojekti etenee vaihe vaiheelta käyttäen hyväkseen seuraavia tutkimusmenetelmiä: Playbook tools ja delfoi haastattelu metodia.

Esitellään sähköisen hankinnan teoriaa sekä myös roadmap:pien luontia joista MAC projektit yleensä syntynsä saavat. Myös työssä käytetyt tutkimusmenetelmät (Playbook tools ja Delfoi haastattelut) esitellään työssä ja niistä saadut tulokset. Työssä käydään läpi mitkä asiat johtivat sähköisen hankinta projektin syntyy; mm. nykyinen organisaation koko, ja edelliset ERP työkalujen implementoinnit.

Myös varsinainen systeemin valinta tullaan käymään tiivisti läpi, jossa peilataan niin teknisen puolen kuin business prosessin näkökulmasta systeemin toimittajaa sekä toimittajan varsinaista systeemiä. Jonka jälkeen kuvaillaan kuinka projekti organisaatio ja tavoitteet syntyivät käyttäen hyväkseen playbook työkaluja.

Lopuksi kuvaillaan kuinka blueprinting tapahtui ja esitellään blueprintin tuotokset, jonka jälkeen varsinainen systeemin kehitys ja implementointi tapahtui ja minkälaisia tuloksia saavutettiin kun projekti päättyi.

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sähköinen hankinta, hankinnan tehokkuus, delfoi, palybook tools

ABSTRACT

Tampereen ammattikorkeakoulu
Tampere University of Applied Sciences
Master of Engineering

Rami Salminen
MAC e-Procurement

Master thesis 58 pages.
March 2015

In this thesis will be introduces from where needs for MAC´s e-procurement project came up and how e-procurement project was approved and build up using research methods as Playbook tools and Delphi interview method by step by step in theory and how those were used in this project.

In theory part will be introduces e-procurement theory as these research method and how in MAC projects are usually coming thru roadmaps. Thru results of these research method will be introduces which topics leads to e-procurement project as MAC global procurement organization status and already implemented ERP systems.

Work continues thru solution providers analysis (technical and process) to which solution provider where chosen and why. After that thesis will introduce how project was build and explain more details about project targets.

Finally is introduces what were need to make implementation happen and what were results of the project, as project was able reach to how many PO lines go thru e-procurement which will gives to business better opportunity be more effective in future.

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e-procurement, procurement efficiency, Delphi, Playbook tools

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CONTENTS

LYHENTEET

MAC	Mining and Construction Inc
SBL	Service business line
MPS	Mining business line
CSE	Cushing and screening business line
REC	Recycling business line
HOP	Head of procurement
KPI	Key Performance indicator
ROI	Return of investment
P4T	Pool4Tool
mBITS	Metso business IT Services (old GIM)
CAPEX	Capital expenditures
OPEX	Operating expenses
SRM	Supplier relationship management
SUS	Supplier self service
SLM	Supplier life-cycle management
CLM	Contract life-cycle management

1 INTRODUCTION

Purpose of this work is to was to find the way improve direct procurement´s effectiveness (reduce procurement administrative cost) using e-procurement tools in sourcing and purchasing areas. Thesis will cover steps from project approval to implement e-procurement tools globally to main MAC´s procurement locations.

MAC´s has in a past implement SAP tools globally all main location, without e-procurement functionalities, except that only couple locations were using other solution provider e-procurement tool for placing order to suppliers. This project is like next step after implementation of SAP basic tools to manages business better and get all benefits out of SAP implementation. For procurement it means to implement e-procurement tools.

Target of this work is to find a right e-procurement solution and implement that globally and give to business lines opportunity do procurement more effectiveness. In other word drop headcount of persons which are placing orders thru SAP. Begin of this project MAC headcount were more than 700 people, which were placing orders thru SAP to external suppliers and internal locations. To drop headcount and get procurement to be more effective following process were created and implemented globally using Pool4Tool e-procurement system: global purchase order process, supplier relationship management, and claim management.

Thesis will introduce first e-procurement theory and after that playbook tools that are used to in this project (context map, white spot, crown clovers and darpa) to help finalize project approval and help to build project plan and timetable. Also Delphi interview method is used to get knowledge from procurement experts to understand what business needs for each business unit are. Finally introducing implementation step by step all the way so that e-procurement and global processes used globally agreed locations. Ending to introduce what kind result were reached using created processes, e-procurement tools and future development action that is still needed to in future.

Project target were reached and that´s way this project actions give now opportunity to business unit do better and more effective procurement activities. Time will show us how many persons were able to eliminate from procurement teams.

2 METSO INC.

Metso is a leading process performance provider, with customers in mining, construction, and oil & gas industries. Metso focus is on the the continuous development of intelligent solutions that improve sustainability and profitability. Metso employ around 16,000 professionals in 50 countries. (http://avenue.metso.com/Pages/Default.aspx)

Picture 1: Metso´s the way we work.

2.1. Mining and construction Inc.

Mining and Construction Inc. delivers cutting-edge equipment, solutions and services to make a real and sustainable difference for our customers' businesses.

- Wide expertise and in-depth knowledge to increase customers' process efficiency
- Reliable technologies and extensive services to secure operations and minimize downtimes
- Solutions that enable the processing of materials at the lowest cost per ton while prioritizing health, safety and environmental performance
- Industry-leading services presence and capabilities enable us to serve our customers wherever they are
- Committed to driving industry development with continuous innovations

Picture 2. Mining field

2.2. Mining and construction global procurement organization

In January 2012 our global procurement organizations (chart 1.) were announcement. MAC global procurement is leading senior vice president of global procurement, which is reporting to MAC president. Organization is following business lines structure (middle box) Mining Process Systems, Crushing and Screening Equipment, RECycling, Services Business Line which is divided to four lower level Distribution Supply Chain, Comminution Wears Solutions and Engineered Service Solution and Life Cycle Solution. These Business lines procurements get support from country head of procurements: China, India, S-Africa, Turkey, Brazil, Australia, Russia and Mexico and Global procurement support service and Global supplier development and category management team and Global transportation management team. (http://avenue.metso.com/Pages/Default.aspx)

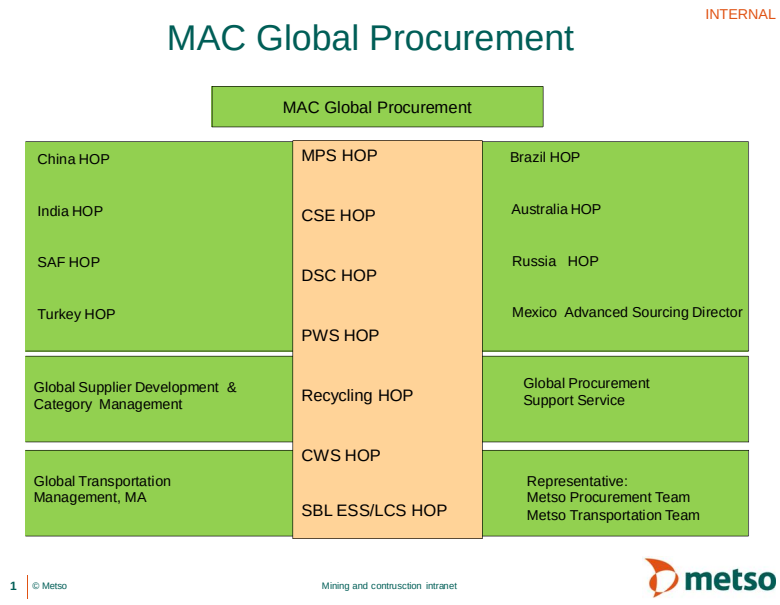


Chart 1. MAC`s global procurement organization chart

Procurement organization flow is introduced in chart 2. (http://avenue.metso.com/Pages/Default.aspx)

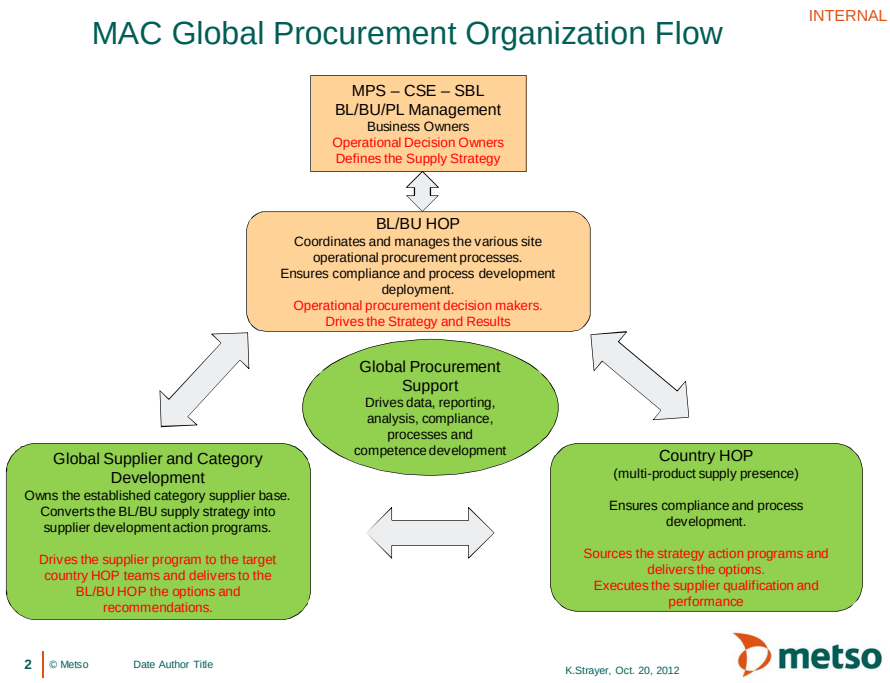


Chart 2. MAC global procurement organization flow

Customer: Customer always drives the demand. The demand may come from sale of equipment, systems or spare and repairs parts and services. All procurement sourcing and operational activities must be focused in satisfying customer demand on time, with quality, and with lowest total cost of a supply.

MAC Global Procurement Team is **led by SVP Global Procurement**. Business Line leaders, Business unit leaders, head of procurement and support team work collectively to achieve goals and objectives of MAC. **Business Line Leaders:** Business Line leaders for MPS and CSE are responsible for procurement with in the business lines. **Business Unit Leaders:** Business Unit Leaders are responsible for procurement with in the business units. Currently we have business unit's leaders for CWS, PWS and DSC. **Head of Procurements:** Head of Procurement is responsible for all procurement activities for the country the country. Currently, we have head of procurement for Australia, China, India. Turkey, South Africa, Brazil and Mexico. **Global Supplier Development and Category Management:** This team is responsible for identifying and qualifying an adequate global supplier network as well as giving strategic Purchasing direction for indi-

vidual Product Categories. This also includes responsibility for global contracts / agreements. **Global Procurement Support:** The Global Procurement Support team is responsible for defining processes, procedures, tools, templates, creating the procurement roadmap and reporting global KPI's. They also drive the ROI on SAP.

3 THEORY

This theory section will mostly focus to explain e-procurement and roadmaps which were used to figure out Metso´s e-procurement scope and needed functionalities.

3.1. e- Procurement

E-procurement is the business-to-business purchase of supplier, work and services through the internet as well as other information and networking systems, such as electronic data interchanges. (http://en.wikipedia.org/wiki/E-procurement)
The E-procurement system is typically used to handle request for quotation, purchase order acknowledgment, and catalogue management, ship notice, e-invoice, and contract management and vendor management such as vendor approval process, vendor on boarding, supplier quality management, etc. Mostly main focus on e-Procurement solution is to improve expediting functions and hence reducing transactional cost.

Purchasing procurement center is also mentioning that e-procurement system will bring more effectiveness and better visibility to spend. (http://www.purchasing-procurement-center.com/e-procurement-advantages.html). Also they are highline that e-procurement investment boots procurement efficiency thru supplier databases spends visibility and compliances. As mentioned by purchasing procurement center (http://www.purchasing-procurement-center.com/e-procurement.html) there is one critical metric to implement e-procurement and it is ROI. Companies that move to electronic procurement experience the following benefits: (http://www.purchasing-procurement-center.com/e-procurement.html)

- Reduced off contract spend by 64%
- Reduced prices by 7,3 % for spend brought back onto contract
- Reduced requisition-to-order cycles by 66 %
- Reduced requisition-to-order costs by 58%
- Increased total spend under management of procurement group by 20%

In MAC e-procurement has been divided to two different processes: e-sourcing and e-purchasing, which can be seeing from table1. Split mainly follows company´s strategic sourcing process steps and operational purchasing process.

e-sourcing	e-purchasing
Focus on strategic sourcing	Focus on operational purchasing
Contains functionality for sourcing project management including Request for quotation and quotation evaluation	Contains expediting functionality including advance shipment notification, delivery notes, packing list and packing slip
Supplier registration	Catalog buying for indirect procurement
e-auctions	Quality notification and claims
Contract authoring tools	Reporting
Linking of legal and operational contract	
Contract compliance	
Commodity management	
Supplier relationship management	

Table 1. e-Sourcing versus e-purchasing

In chart 3 is explained split of procurement processes of these strategic and operational functions.

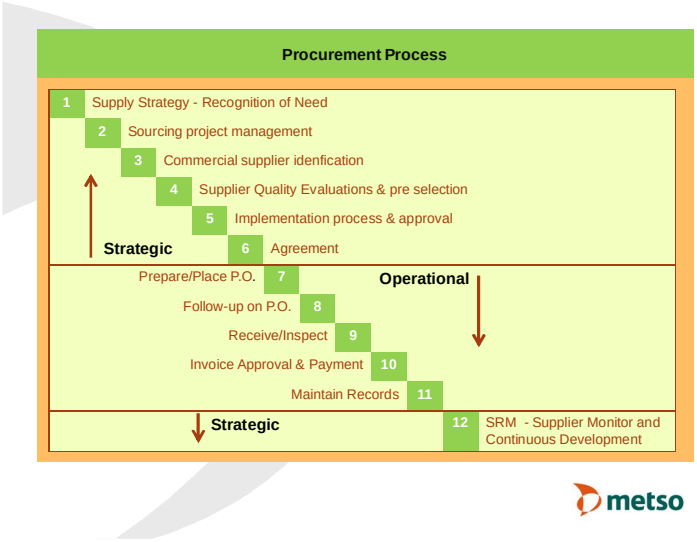


Chart 3. Procurement processes

3.2. Roadmaps

MAC has gone through both a global ERP and IT Management transformation during the recent year according to the plan

- GPS Program 2006-2011
- Global IM creation and deployment 2010-2011

New governance model to coordinate management of IT services and further development project is required for MAC line organization leverage the new IT for maximum business benefit. **Process oriented roadmaps** are a key part of the new governance:

- Ensures longevity of the process thinking in the MAC on global basis
- Helps to consolidate, refine, articulate, align and communicate needs and priorities of the key stakeholders from operational, strategic and technology development perspective
- Helps to focus all development resources to business priorities and make project initiation a planned, proactive effort
- Roadmaps should be reviewed in the middle of the year and fully updated annually

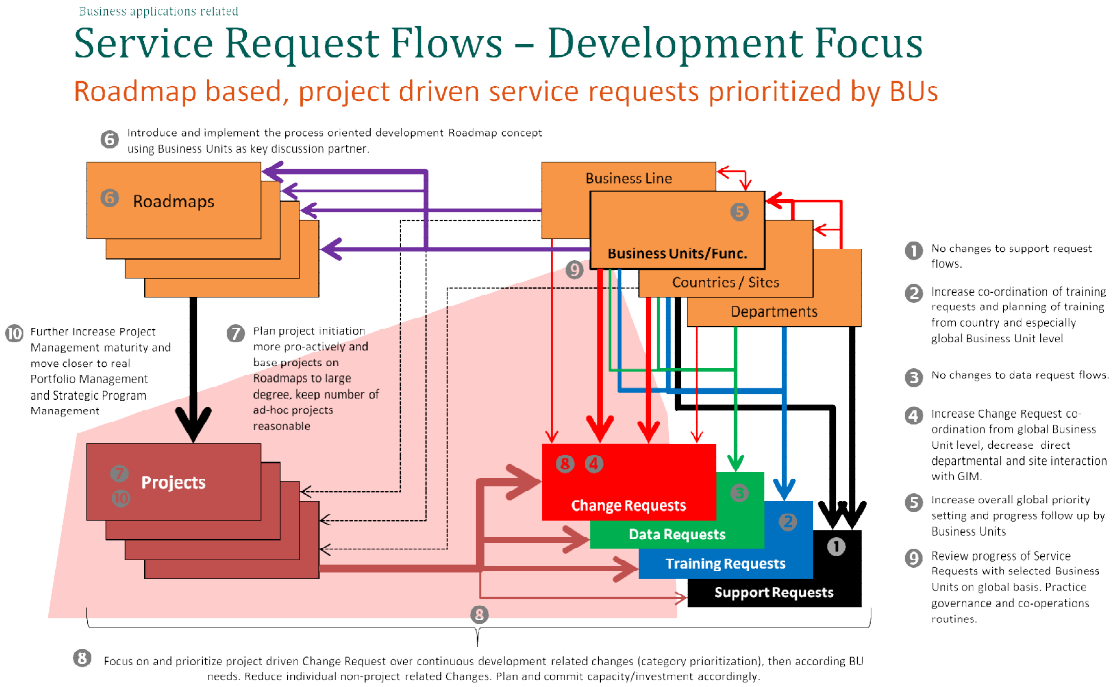


Chart 4. Service request flows to build roadmaps, which lead to projects. (Metso Intranet)

In chart 4 is an overview of services request, which starts from business unit needs. That request can be flow to directly to change, data, training or support request or when talking bigger changes or project then it will flows to roadmaps. After roadmaps are done some of those will be approved and to be real projects which will create those requests

to make needed changes to systems and processes. In table 2 are introduced little bit deeper process flow how to create roadmaps: Initiate – Gather – Consolidate – Review - Initiate project.

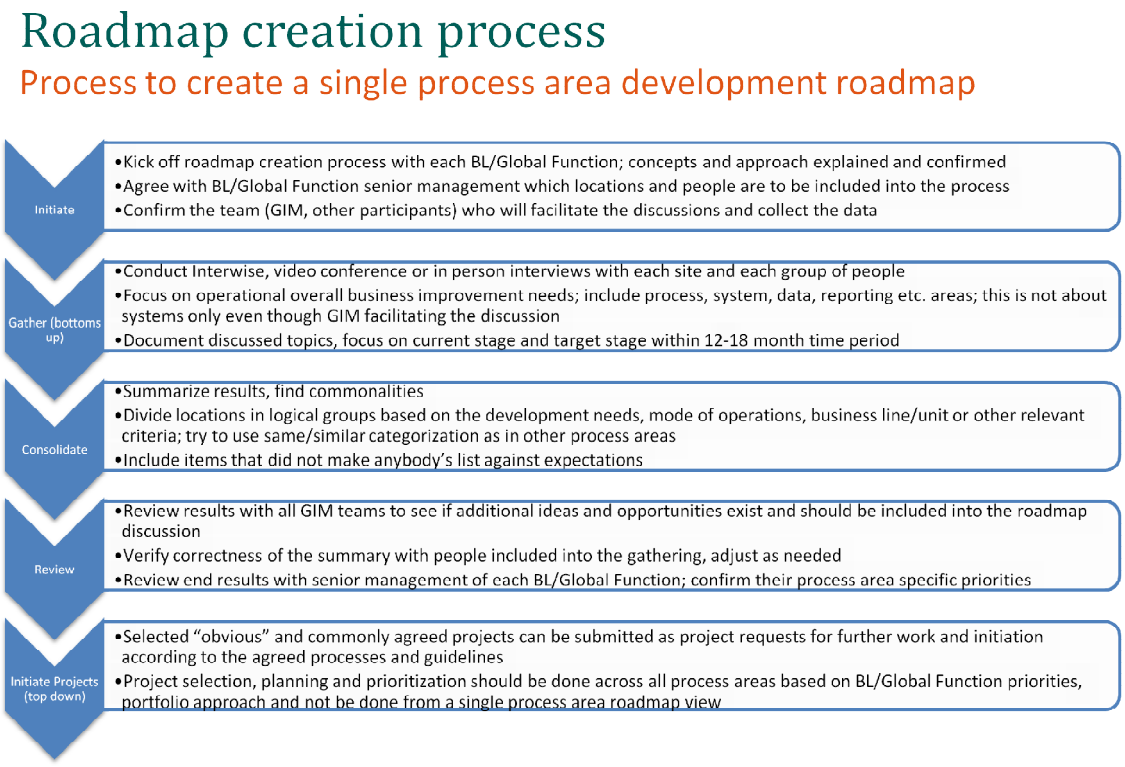


Table 2. Roadmap creation process (Metso intranet)

Key success factors for roadmaps are:

- Agree and create roadmaps one at the time for sensible process areas.
- Create roadmaps "bottoms up" horizontally across the business lines/units. Validate and iniate "top down" vertically based on business lines / units approval.
- mBITS facilitates and coordinates, does the work but this is not about IT
- Focus on practical development items where significant progress is possible within 12-18 months time frame.
- Fill the project pipeline evenly with obvious project candidates, but do not commit all capacity – use portfolio approach to plant the next wave of projects.
- Remember that creation process is as important as the end result.

3.3. Research methods

In this thesis will be used following research methods to help build e-procurement project business case, find right e-procurement solutions and build project organization. Idea is to collect thru Delphi interview (method) development needs from business (material) and then use playbook tools (Content map, White spot, Darpa, Crowne clovers) to build (method) e-procurement business case. As in research triangle need to have found these two and also of course research problem. Both of these methods are introduces little bit deeper in chapter 3.3.1 and 3.3.2.

3.3.1 Playbook tools (Content map – white spot – Darpa- Crowne)

In this thesis will be used following playbook tools to analyze solution providers and helping to build MAC e-procurement project plan and organization. More details about of these tools can be found from playbook book. (http://www.lut.fi/web/en/playbook-for-strategic-foresight-and-innovation)

- Content map
- White spot
- DARPA
- CROWNE

Method	Related tools & techniques	Our unique benefit
Context Maps	> Brainstorming > Mind mapping	Retains complexity of topic, while beginning to converge on priority areas
White Spots	> Growth-share matrix (BCG matrix) > Blue ocean strategy	Determines future focus of opportunity through iterative filters
Crowd Clovers	> Social network mapping > Weak ties > Collaborative Innovation Network (CoIN)	Identifies the types of relationships required for fostering a culture of innovation
DARPA Hard Test	> Technology readiness scales	Evaluates future vision in terms of its breakthrough potential

Table 3. Used Playbook tools

In table 3 are shortly introduces tools that were chosen from playbook tools to be used in this work.

Content map

Idea to use content map is able to see big picture like to pursue an entirely new area of research or to find group agreement on the important aspects of a problem or to gain fast background for a particular topic using easy brainstorming tactic in a small team and collect fast ideas to each dimension. Eight dimensions will give enough view to capture the problem´s complexity but not too few to lose sight of what are important. Using content map will be able to get eight core dimensions out of current problem or opportunity which then gives opportunity ask more question about the problem or opportunity.

White spot

White spot is strategic tool that can be used to find opportunity space defined by two salient issues. It will help to find systematically new solution area or potential markets that are unknown or ignored by competition. Also it will give relevant dimensions for the fundamental value of your innovation idea.

DARPA

DARPA covers four qualities of a radical innovation vision: far-reaching, technically challenging, multidisciplinary and actionable. DAPRA can be used to change the state of the field by an order of magnitude or to find visionary ideas that, if they could succeed, would be a large step beyond what existing science and technology can permit. (http://www.lut.fi/web/en/playbook-for-strategic-foresight-and-innovation)

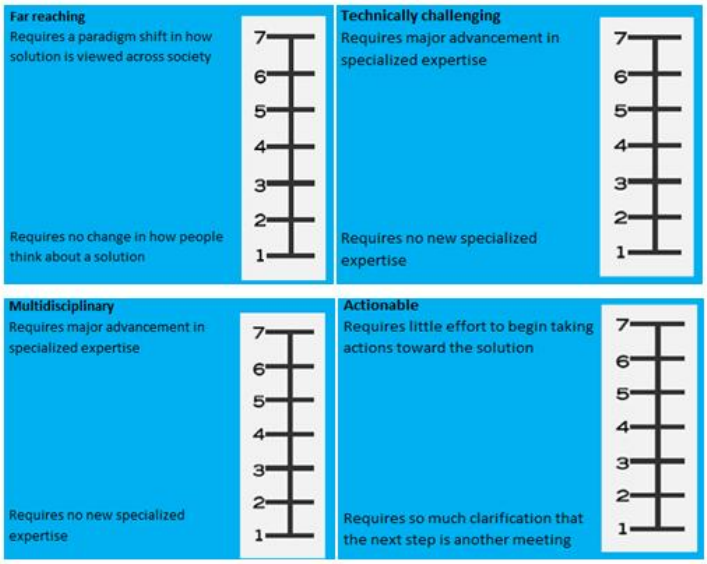
Those four qualities are introduces more details in table 4 and 5. And also from picture 3 can be found evaluation scale for each four qualities. Idea is to check each of these individually looking definitions and asking helping question when team is having discussion about the topic. Scaling happens as description in picture 3 for each these four qualities.

Vision dimension	Definition	End of scale (1)	Top of scale (7)
1. Far reaching	The solution requires a completely new mental model, passing though a paradigm shift	Requires no change in how people thing about a solution	Requires a paradigm shift in how solution is viewed across society
2. Technically challenging	The goal is difficult to implement either in terms of inventions or system integration required	Requires no new specialized expertise	Requires major advancement in specialized expertise
3. Multidisciplinary	The solution requires multiple bodies of knowledge that rarely exist within one industry	Requires only one class of knowledge	Requires multiple distinct bodies of knowledge
4. Actionable	The rigth people can see path to the impossible and can make progess beginning today	Requires so much clarification that the next step is another meeting	Requires little effort to begin taking actions toward the solution

Table 4. DAPRA´s vision dimension and definitions with scale description.

Vision dimentsion	Question for team discussion	Suggested methods to help address
Far-reaching	> How does the launch horizon to your organization > Do you want to create a new technology use or create a new market	> Use the Janus Cones to gauge past timeframes to develop a baseline > Try the dark horse prototype to question hidden preconceptions
Technically challenging	> is the problem almost unthinkable to solve due to complex interdependencies and high levels of ambiguity?	> Use progression curves to review the state of the field and idea precedents
Multidisciplinary	> Does your vision fall outside of the usual boundaries and at least two academic fields?	> Apply the context maps and white spots methods to assess the idea from the view of various fields
Actionable	> Can you present the vision as a single challenge to those who will build it	> Use the vision statement method to sharpen and simplify your story

Table 5. DAPRA´s vision dimension with helping question and methods to help address.



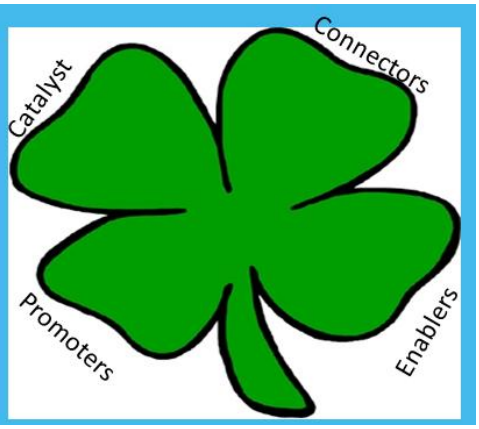
Picture 3. DARPA´s evaluation scales.

Four vision qualities assess how big it is (far-reaching) how to do it (technically challenging), what you know (multi-disciplinary) and when you start (actionable). Also DARPA works as a benchmarking tool, because it will give in other word “rule of thumb” view of the ongoing radical innovation visions.

CROWD CLOVELS

Using crowd clovers can be map the various related components of a personal network focused on advancing new innovation ideas. Crowd clovers can be used to develop a map of your own or team´s innovation network or to assess which areas to bolster or change in your network or to evaluate the balance between formal and informal relationships within a network. (http://www.lut.fi/web/en/playbook-for-strategic-foresight-and-innovation). Idea is to collect for each leaf (picture 4: catalyst, connectors, promoters and enablers) needed team members names, or teams or network s that are needed to finalize innovations. Also from picture 4 can be found more details of each these leaf descriptions and helping “question” that will help to find right people to each leaf.

Leaflet	Network action
Catalyst	People who provoke you with new insights and possibilities
Connectors	People who grow your idea or effort by providing access to othet partners, workers, resources, funding, etc..
Enablers	People who help you realize your idea though action or by prodding you to process
Promoters	People who broadcast and circulate your idea (and you) with other networks



Picture 4. CROWD clovers and and network action per leaflet

3.3.2 Delphi interview method

Delphi is a distinctively expert method. In this interview method will be chosen only expert from that development area. Usually interview is an open interview, where idea is to get more understand from experts. This method is suitable for particularly suitable for complex or rapidly changing theme processing. In open interview topic has been agreed before interview and the interview proceeds interviewee conditions only further questions the interviewer will ask. (http://fi.wikipedia.org/wiki/Delfoi-metodi) (Tutkimusmenetelmät – Marko Mäkilouko powerpoint presentation)

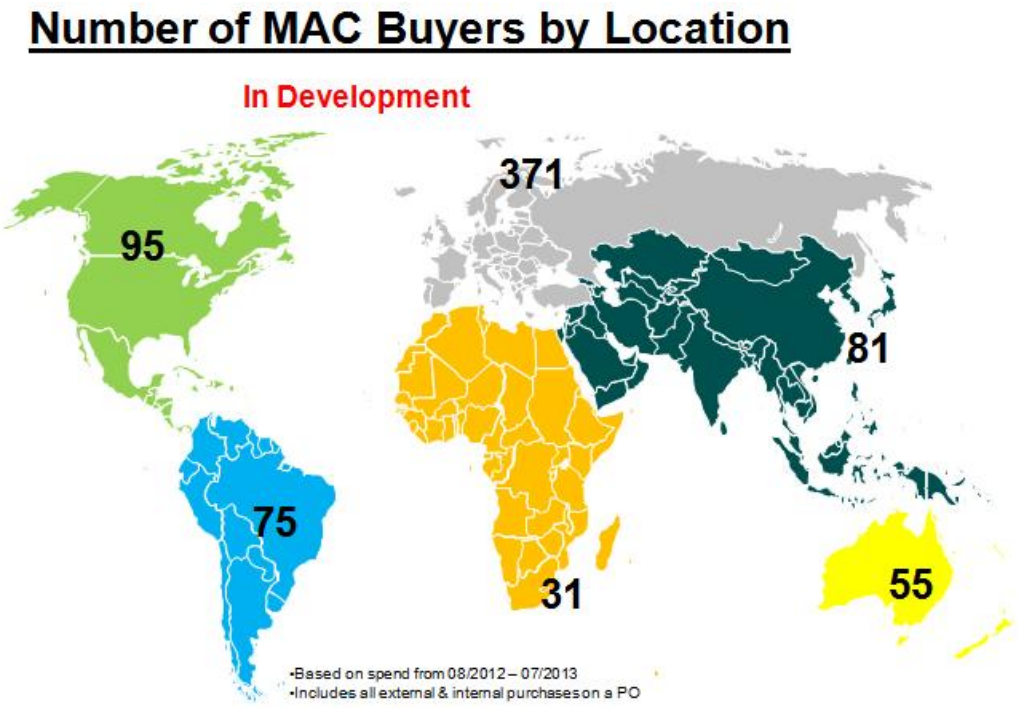
4 BUSINESS CASE: e-Procurement

4.1. Background

Building the business case there are always so called soft and hard benefits. Soft benefits are like better data is systems and consolidated systems. Hard savings are the real benefits which should do the payback of this project´s costs and those are in this e-procurement project are either person or system meaning that either person will do the work or it has been automatic so then system will do the work.

4.2. MAC global purchasing organization

As can be seen from picture 5 that MAC have 708 purchasers worldwide which have created purchase order in SAP system to supplier: In North America 75 people, S-America 75 people, Europe 371 people, S-Africa 31 people, Asia 81 people and 55 people in Australia. Which are more than 700 people which have placed purchase order in SAP and the most of these purchasers is not part of procurement organizations. This is a big risk for MAC from people´s compliance point of view. Procurement cost center are also not line with organization and people which are working in procurement. These numbers of purchaser are not able to manage or even to train.



Picture 5. MAC´s buyer location and numbers of people which has place purchase order in SAP.

4.3. From Global Procurement roadmaps to approved project

HOP from each business units were interviewed, using the Delphi interview principal and following our internal roadmap instructions to build MAC global procurement roadmap. Idea was to collect from each business unit their existing needs and on-going development project. So that we would be able to make global plans and get a global focus to same things to be get more effective global processes and results.

Interviews were arranged thru internet web connection, following quite open discussion flow about procurement capabilities: what are they at the moment doing, what kinds of development action are ongoing and what are needs for future to do better are and effective procurement.

Below can be found results from table 6. More details of these capability and capabilities benefits and needed cost can be found from attachment 1. Some kinds of e-procurement tool for efficient processing of PO are only in use two business units: MPS and CSE, and even there only 1 location per business unit. So in other word, MAC´s is not using basically e-procurement tools any locations. Also it were noticed that specially team need helps on three topic: basic SAP and BI training, spend management and down payments as can see from table 6.

Procurement Capabilities

CAPABILITY	CAPABILITY DESCRIPTION	MPS	CSE	PWS	CWS	DSC
Training	Basic SAP (China, South Africa, Russia) and BI training (All). Next level SAP and BI training to all.	●	●	●	●	●
Spend Management	Ability to analyze spend. Able to see the growth in volume, price and currency fluctuations. Quality and other costs	●	●	●	●	●
Global Processes and Templates	Define MAC procurement processes along with standardized templates, Procurement Manual	●	●	●	●	●
Standardized systems and their global usage	Reduce the number of systems (SAP, BI, MSOP, eProcurement, Metso Partner, Lotus Notes, Excel Sheets) and ensure their standardized usage across MAC	●	●	●	●	●
Global KPI's	Define Global KPI's for procurement and have a standardized way of reporting them. Payment terms, Vendor Performance, Vendor Reliability,	●	●	●	●	●
Supplier Relationship Management	A tool to capture the needs, evaluate Vendors, Vendor selection, prototyping, Marketplace, Vendor Qualification, Compliance, Global Planning of Supply Chain across locations, Global Visibility of pricing, Vendor Portal for acknowledgement and ASN and Total cost of procurement	●	●	●	●	●
Tools for Efficient processing of PO	Automatic conversion of purchase requisitions to PO for low value stable demand materials, VMI, Consignments.	●	●			
Claims Management	Efficient return process to Vendor because of any reasons (Quality, Over delivery). Track their payments and causes.	●	●	●	●	●
Down payments	Ability to track and reduce advance payments to Suppliers.	●	●		●	
Data Issues	Cleansing of Material groups, Material harmonization, Lead times, Material description, Vendor Categorization	●	●	●	●	●

● : Needed : Active

Table 6. Procurement capabilities

After analyzing these results together with MAC global procurement strategy and already on-going development activities it was recognized that MAC global procurement

needs 1) global processes, 2) standardized systems, 3) supplier relationship management, 4) claim management and 5) e-procurement tools. For now forward on this thesis will focus to e-procurement tools and related processes.

4.4. Outputs from roadmaps and strategy

After analysis roadmaps and MAC strategy following things come up:

- Few Process fixes before e-procurement: On time delivery, lead time, Document management system, and Quality notification.
- buyer, planner concept need to implement to DCs
- e-procurement roadmap
- Goal and objectives of e-procurement project
- Scope of e-procurement project.

4.4.1 Process fixes before e-procurement project

Before e-procurement tools and processes can be use, need to harmonize few processes globally. Calculation of *on time delivery* is not working before all SAP plants will use Purchase orders date same way. Also use of e-procurement processes when placing would not work, because there would so many different way to use these dates and system is not able handle all these scenarios. Purchase order *lead times* were handled mostly so that lead time includes both supplier manufacturing time and transportation time. And that was the reason that Metso was not able measure only supplier on time delivery accuracy, because it also included transportation time.

4.4.2 Buyer, planner concept

Splitting DC´s Buyer and planner role from each other will also bring more benefits to organization effectiveness and more clear roles between planning and buying. In this case buyer means procurement person which will take care all negotiations with supplier related topics which can be found table 7: like price, payment terms, etc... And planner can only change order quantity and delivery time.

PLANNING		PROCUREMENT
•Internal Metso orders with added efficiency via SAP intercompany processes •Expedites internal supplier	•External operational purchase orders to FCS (fixed contract suppliers). •No changes to fixed price, TOP, GPC's entered from agreement without HOP approval •Expedites FCS	•Sourcing and SQE •Supplier Qualification •Negotiation •Contract/Order Agreement •Manages FCS in SAP • Supplier Performance Management •Expedites except internal and FCS •Procurement Manager •Administration and analysis •Process Development and Training

Table 7. Planning versus procurement.

4.4.3 e-Procurement project

Roadmap in chart 5 introduces a big picture of whole e-procurement steps that are needed to cover all main procurement action thru e-systems. In this project focus was on the second box; e-Procurement. It was needed to evaluate whole picture to be sure that development steps that are chosen first do not effect to the future path. If MAC´s would like to have also SRM or sourcing modules in use in future. As mentioned also in chart 5 that e-procurement do not effect to the future path at all.

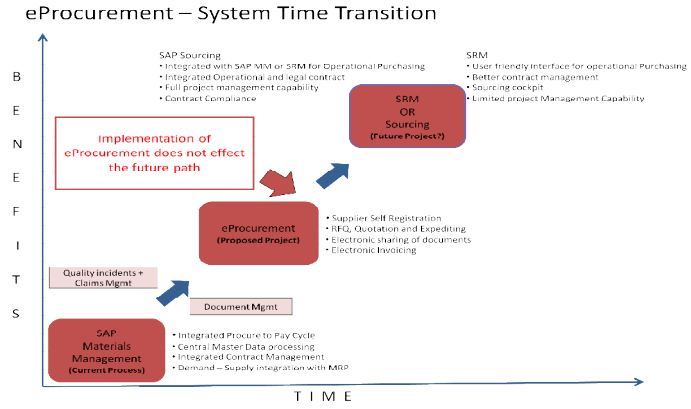


Chart 5. e-Procurement- system time transition.

E-Procurement goals and objectives are introduces below, where first goal is paying project back and other one´s are secondary goals in the project.

- Reduce transactional and Administrative Cost (19 persons)
- Better prices thru competitive quotations
- Faster RFQ to Quotation Cycles
- Better Planning data because of Confirmed dates and Quantities
- Empowerment of Supplier to perform
- Supplier registration and initiation
- Party closest to information initiate transaction (self service)
- Eliminate redundancies and errors in supply chain
- Streamline business process
- Buyer/Supplier looking at same data
- Real time access to Supply side information
- Consolidation of systems (MSOP, Liaison Supplier Web, LN database and other miscellaneous systems) to single Supplier portal

Scope and functionalities of e-procurement project are:

- Supplier Registration (First step of Supplier Approval)
- Ability to create request for quotations
- Collect Quotations and evaluation
- Transmittal of Demand thru Portal via Workflow
- Firm demand from Purchase Orders
- Forecasted outlook
- Order Acknowledgement of Dates and Quantities
- In process expediting
- Advance shipment notifications
- Ability to share documents/drawings with supplier
- Ability to share Quality incidents with Supplier
- Claims processing and management

4.4.4 Existing processes versus planned new processes

On table 8 are mentioned four main processes: supplier registration, RFQ, purchase order and claim management. On right column were added main process step and then to middle column were evaluated which way or tools that process step is done as today like by email, file transfer, etc… and then checked is how work is done as today: is it manual work or automatic. Most of the work was done manual and then it was compared to P4T capabilities to the same process steps.

Effect of supplier registration, RFQ, purchase orders and claim management functionalities will bring more effectiveness procurement processes, as can see from below chart comparing existing processes to future e-procurement process. Most of work will move to supplier site or will be automated as can be notice from table 9. Which should bring effectiveness to procurement and that way will drop headcount from procurement thus

Current process versus new eProcurement process

Supplier registration				
Gathering info	email	manual	P4T	automatic
	internet	manual		
	phone	manual		
Creating new supplier	email	manual	P4T	automatic
	GIM	manual		

RFQ, quotations				
Sending RFQ	email	manual	P4T	manual or automatic
	SAP	manual		
Sending RFQ documents	email	manual	P4T	manual or automatic
	fax	manual		
	post	manual		
	file transfer	manual		
Cost Break Down	excel or other document		P4T	automatic with templates
Evaluation	excel or other document	manual	P4T	automatic with templates
	sheet of paper	manual		
Data transfer to SAP	SAP	manual PIR	P4T	automatic PIR

Purchase orders				
Sending out PO	email	manual or automatic	P4T	automatic
	fax	manual		
	post	manual		
	EDI	automatic		
Order acknowledgements	email	manual	P4T	automatic
	fax	manual		
	post	manual		
	EDI	manual or automatic		
PO changes	email	manual	P4T	automatic with confimation
	fax	manual		
	post	manual		
	EDI	manual		
	phone	manual		
Advance shipment notifications	email	no data in system	P4T	automatic
	fax	no data in system		
	post	no data in system		
	EDI	manual or automatic		
Sharing documents	email	manual	P4T	manual or automatic
	SAP	automatic		

Quality management				
Generating quality notification	SAP	manual	SAP	manual
	MSOP Claims	manual		
	email	manual		
Sending notification to supplier	email	manual	SAP+P4T	automatic
	MSOP Claims	automatic		
	SAP	automatic		
	phone	manual		
Supplier reporting	email	manual	P4T	automatic
	phone	manual		
	MSOP Claims	manual or automatic		
Claims	SAP	manual	SAP	manual
	MSOP Claims	manual		

Table 8. Current process versus new e-procurement process.

4.5. Approval of e-procurement business case

Before the project got approved, needed to follow up MAC project portfolio management and bring needed info to top management to get approval of this project:

- Business case benefits
- Cost estimation
- Project scoring
- Comparison of this project to other MAC´s project.

For MAC´s Project portfolio management needed to calculate project cost to see required investment cost (CAPEX and OPEX) and cash flow impact (out of pocket and committed and spend booking split (line organization and GIM, which changed name to be mBITS in future).

In Project scoring idea is to estimate e-procurement´s project deliverable, value to organization and roadmap related scorings to get total project score. Looking table 9 from project deliverable project got 15 points, value to organization 35 points and roadmap related 10 points. So totally project got 60 point from 100.

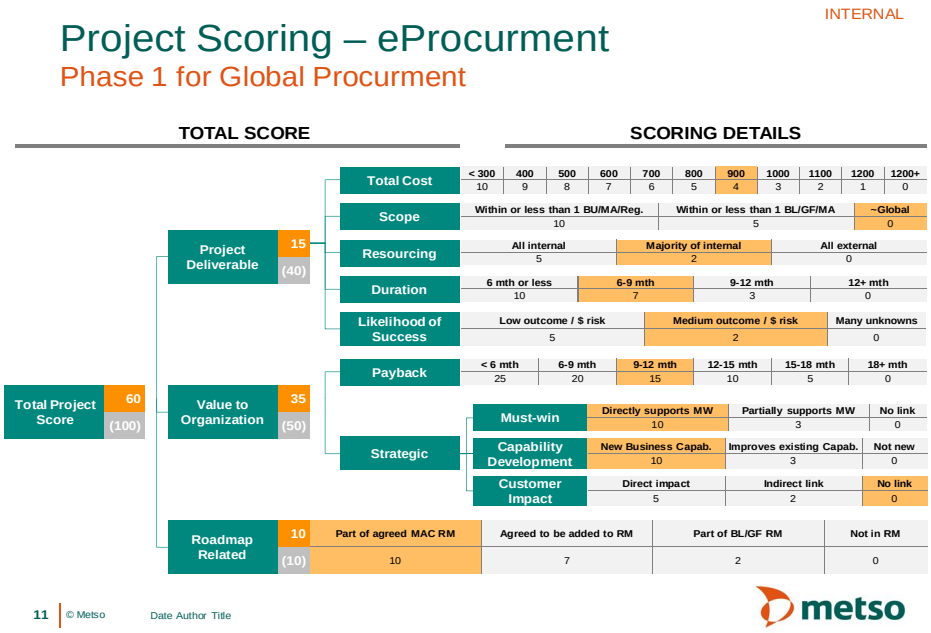


Table 9. e-Procurement´s project scoring.

After this comparing this project to other Metso´s projects (value to organization and duration of project) and then able see should MAC focus to e-procurement project at the moment or are there more important projects that should be finished before this project.

Reason for this kind view is of course the limited resources of employees and needs of business.

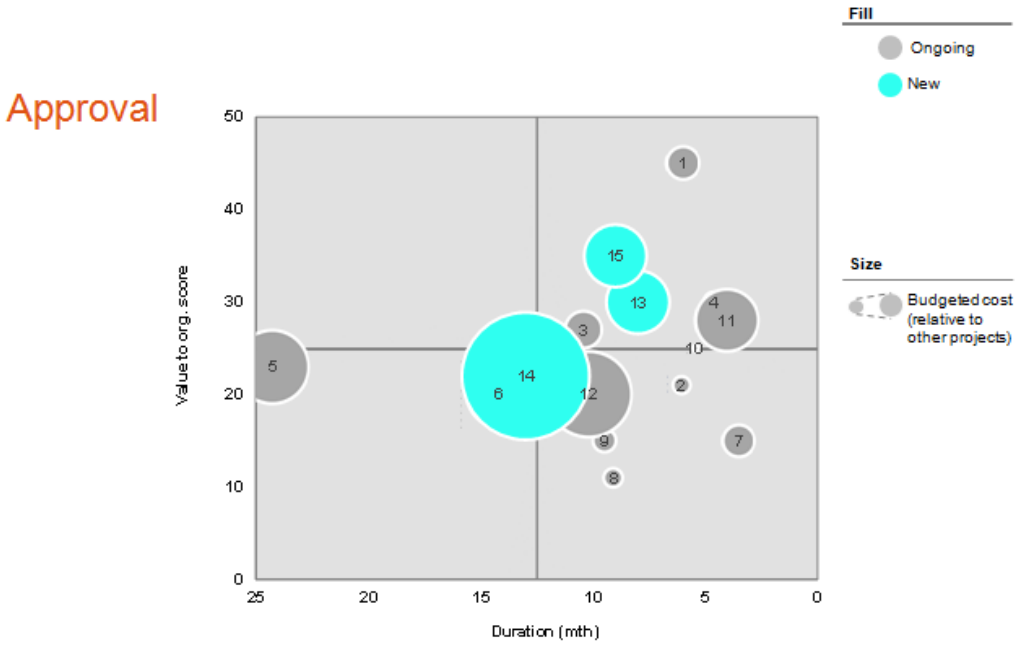


Table 90. e-Procurement project comparison against other project.

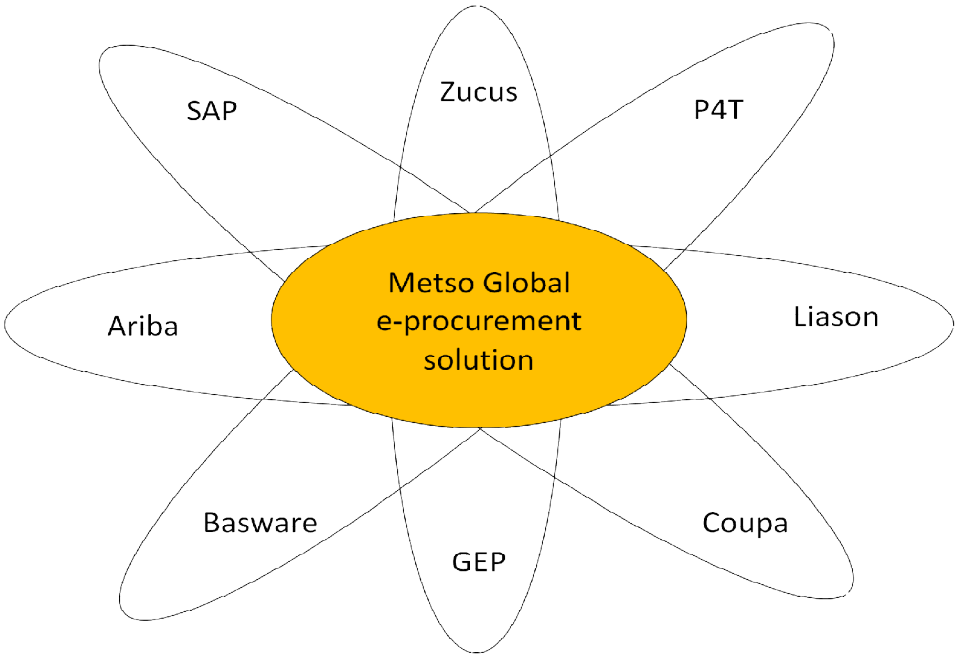
After the project portfolio management team meeting our project got approved, because business value to business is high and benefits are able to reach in short time against other project proposals. As can be seen from table 10, e-procurement project (ID:15) value to business is higher that most of other project and duration is similar like other project.

5 Comparisation of solution provider

Comparing solution providers to each other's and finds best solution for our needs we used following tools: content map to map global solution providers, demoing their solutions, technical and process capabilities, progression curves and reference calls to be hear "lesson learn stories" from companies that already use these solutions.

5.1. Content map

Using content map it was good help to find most know e-procurement solutions providers on the table. Team was able to find these 8 solution providers which one's team next to start evaluate deeper interview and asking them to show demos their solution. From picture 6 can be found founded solution providers.



Picture 6. e-Procurement content map.

5.2. Analysis from solution´s provider's interviews and demoing solutions

Functionalities were given to those solution providers so that they could prepare to their demos session and they would be ready to our question. After interviews and seeing demos it was easy to drop some of these companies away. Mostly biggest reason for dropping companies away where they were not able covers all our scope tasks or support globally. Below are summarized results:

- Zucus
  - solution is not able to cover all scope tasks
- Liason
  - notable service in globally,
  - solution is not able to cover all scope tasks
- Ariba
  - Focus on indirect materials purchasing, not able to provide all scope tasks
  - Supplier need to pay to use system
- Basware
  - Solution is not able to cover all scope tasks
- GEP
  - Solution is not able to cover all scope tasks
- Coupa
  - Solution is not able to cover all scope tasks

SAP and P4T solution are able to cover all scope tasks and able to support globally so then it was time to see make technical and process comparison.

5.3. Technical comparison

Looking SAP and P4T from technical point of view, in SAP there would be SAP EPR system plus four different SAP modules needed to make it happen that in P4T there we SAP ERP and P4T system with multiply modules. (Chart 6 and 7) In other word choosing SAP product MAC´s should build four different interfaces between SAP and needed SAP modules: SRM, SUS, SLM and CLM. Choosing P4T solution, there would be only one interface needed even there P4T have multiply modules.

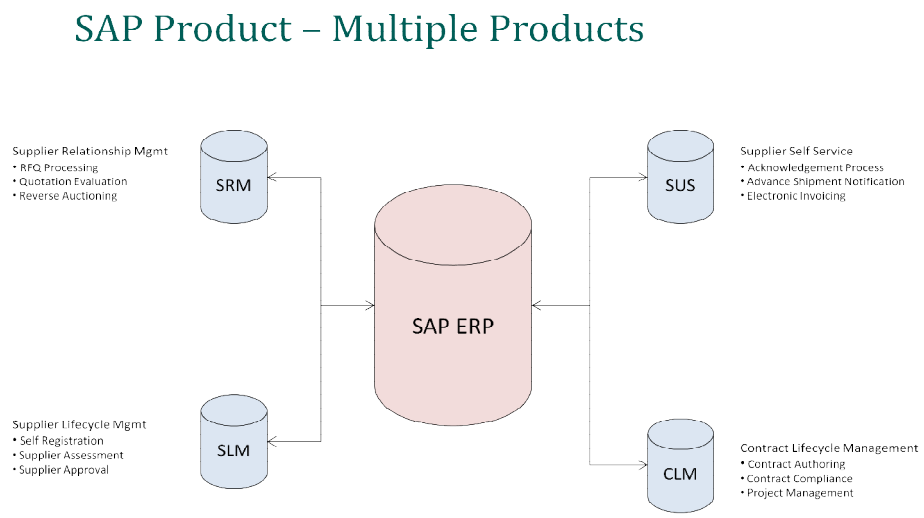


Chart 6. Needed SAP product to do e-Procurement activities.

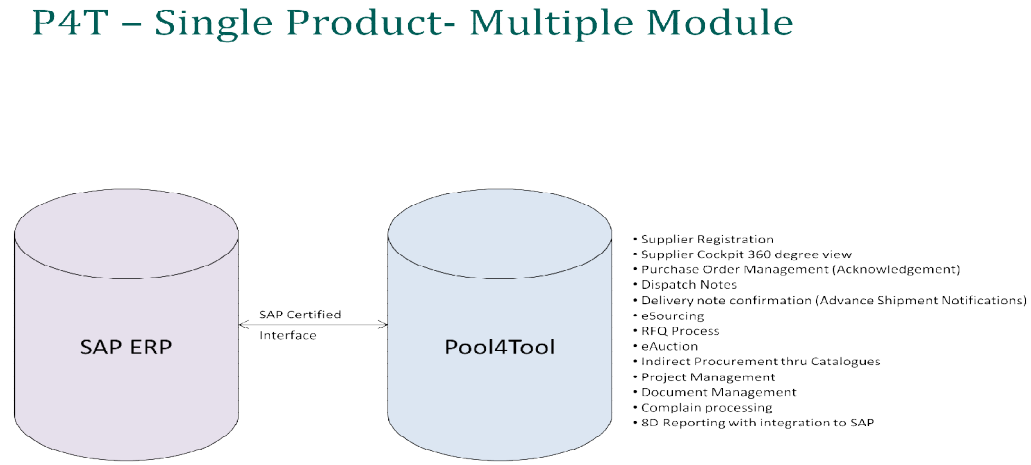


Chart 7. P4T product to do e-Procurement activities.

MAC´s mBITS teams make technical comparison between P4T and SAP. Results can be found from table 11. Final score were 20 to P4T and 19 to SAP. Technical points of view there were no big differences. Technical point of both solutions would be ok for MAC. More detailed analysis results can be found from attachment 2.

Scope	P4T	SAP	Comment
1. Resourcing	3	4	In P4T option Metso need resource from SAP MM team, product technical resource from GAD team and integration resource from GAA team. For SAP SUS resource is needed from SAP MM team and technical resource from GAD team.
2. Development	4	3	P4T some development needed e.g. Getting drawings to SAP DMS (development needed in any case regardless P4T). SAP SUS option requires custom development to get functionality same level as P4T.
3. Support	2	4	P4T as non-SAP production doesn't have support desk -> support model and organization needs to be created. SAP SUS as SAP product there exists support model and organization, needs enhancement to support.
4. Infrastructure	3	2	P4T doesn't need own infrastructure, but requires either SAP PI 3 tier (dev, test, prod) landscape OR extending IBM Cast Iron landscape to have dev and test. SAP SRM, SUS, etc. needs own servers.
5. “Evergreen"	5	3	P4T has 12 releases yearly and new functionalities are added and bugs fixed. SAP solution would partially depend on components, which SAP says they will no longer develop.
6. Integration	3	3	P4T has SAP components (P4T responsibility), middleware layer (P4T provides XLST mapping files, but responsibility to create at Metso) and secure communication (Metso responsibility). SAP SUS using standard SAP ECC -> SRM integration components, but multiple SAP products needed for functionality.
Total	20	19	

Table 10. Technical compasion of SAP and P4T.

5.4. Process capabilities

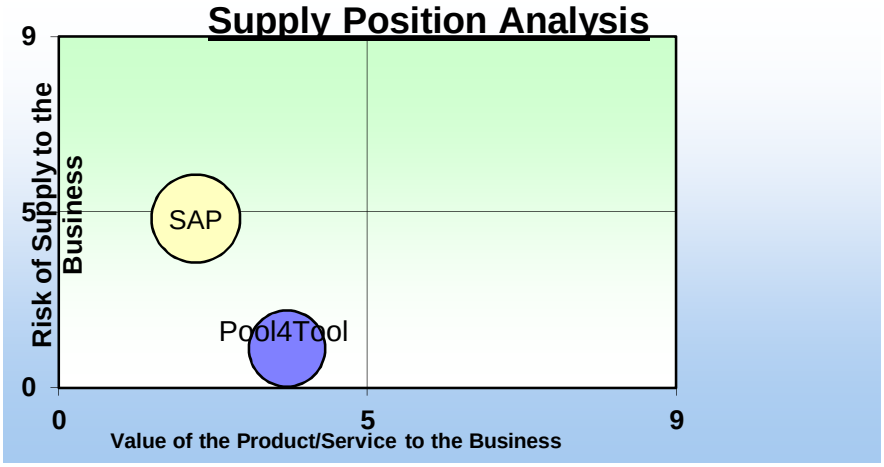
Also MAC´s support team make comparison between P4T and SAP solutions from process capabilities point of view. (Table 12) P4T collect little bit better scores, and also it has better scores in critical scope areas as ability to share documents, ability to notify supplier about quality issues. Biggest caps between these solution were sharing drawings (table 12; scope 5) and able to create quality claims (table 12; scope 12 and 13) thru portal. SAP did not have these capabilities or those were not that good as P4T had. Totally P4T got 56 point and SAP 42 points.

Scope	P4T	SAP	Comment
1. Integration of Product	4	3	SAP has multiple products to support our requirement. The multiple products (SRM, SUS, CLM and SLM add complexity in integration and implementation
2. Product Support in Future	4	3	SAP is not developing SUS or SRM in future. Their focus is more on ARIBA. P4T is a small company and there is a risk that it can be acquired by other big company.
3. Ability to capture additional information about Supplier like classification, Commodity supplied, Capacity, limitations etc	4	3	P4T was able to show the additional data as a part of standard system. SAP SLM has some fields but customizing them may be difficult
4. Ability to Supplier to register on Portal. Basic information about supplier is collected. First step in Vendor Approval process	4	2	P4T product exactly matches our Vendor Approval process. The templates are easily modified. SAP presented SLM but it still has very basic templates and seems difficult to customize.
5. Ability to create Request for Quotations and evaluate quotations based on total cost of supply	4	2	The RFQ functionality is not available with SAP MM and SUS. We will have to implement SRM. Texts and passing of documents are not part of standard SAP solution. With SAP SRM solution comparison of TCO was not possible. P4T was able to show how to pass the documents and also comparison is possible
6. Ability to handle indirect procurement using supplier catalogues	4	4	Ability to integrate supplier catalogues and create requisitions
7. Ability for reverse auctioning. Suppliers should be able to bid on demand	4	4	Haven't seen the demo but it is low priority for MAC and both suppliers have mentioned that this functionality is there
8. Required for Strategic sourcing. Category manager must be able to manage sourcing projects. Ability to monitor budget and schedules	4	4	CLM and P4T are comparable
9. Ability to share documents with Supplier. Supplier ability to sign NDA, GPC and Contract. Also able to store project related documents	4	3	Ability to share document is not standard SUS functionality. Can be accomplished by custom coding. P4T showed us how the terms and conditions can be mandatory and showed document sharing functionality
10. Supplier ability to confirm date and quantities. Must integrate with SAP and update purchase orders	4	3	Both solutions are able to pass the data back and forth between MM and Portal. P4T was able to show us that texts and documents can be passed to supplier. The PO print out from SAP can be imported into P4T.
11. Advance Shipment notifications coming to Metso and Freight Forwarder. Ability to generate shipping paperwork.	4	3	SAP does not has ability to generate shipping label and shipping paperwork. Will be a custom solution in SUS. P4T has this module as part of standard system
12. Ability to notify Supplier about Quality issues. Supplier and Metso ability to accept and reject issues and claims management	4	0	P4T has Quality module which is integrated with SAP QM. SAP does not has any tool for this.
13. Ability to monitor Supplier Quality from inception to serial production	4	0	P4T was able to demonstrate product life cycle management. Did not get demo from SAP
14. Ability to notify thru emails	4	4	Same in both the systems
TOTAL	56	42	

Table 12. Process capabilities comparison between SAP and P4T.

5.5. White spot analysis

Adding these results to white spot (picture 7.), it helped to recognize that SAP solution would be bringing more risk to business and would be even more expensive as can be seen from picture 5. P4T will bring more value to business with less risk so next need to do for P4T Financial analysis using progression curves tool and ask from D&B report of P4T.



Picture 7. Results of white spot analysis..

5.6. Progression curves

From progression curves (chart 8.) can be see that P4T has good grow on sales point of view which are signals that company strategy is working and wiliness to grow and it is really happening. After these analysis MAC finance department did supplier financial evaluations, which did not show any alarms, so P4T was approved also from financial risk point of to be MAC supplier in future.

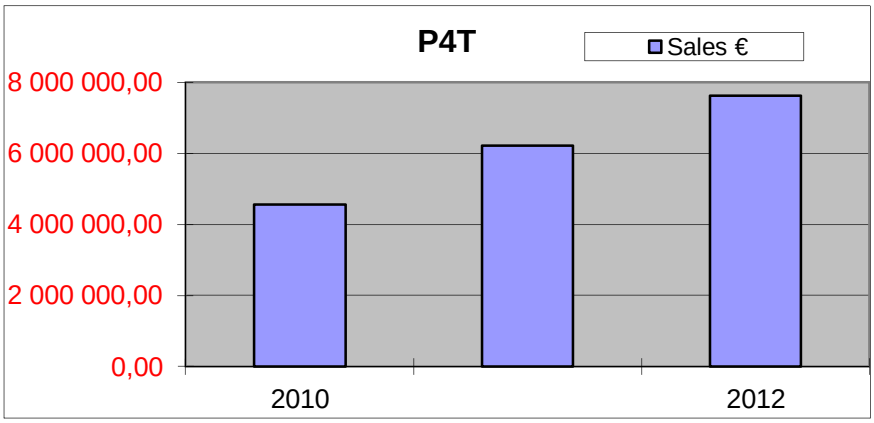


Chart 8. P4T progression curves

5.7. Reference calls

To be sure P4T´s solution needed to make few reference checks (picture 8.) to companies which are already using P4T solutions. Two of those companies P4T point out and third company was chosen by us. Ideas of these reference checks were to understand is the P4T right tool for us when hearing other companies' comments and also to go thru their lesson learned things. Focus was to similar companies which are doing project business and/or repetitive products.

All these three companies were highly recommending P4T. Mostly they recommend us just keep focus in a couple modules, not in all in once. That needed to notice when creating project targets and schedule.

5.8. Solution speed in real environment

Solution speed in real environment needed to test to be sure that solution will work in our main procurement location worldwide. Test was arranged together with local people to test globally Pool4Tool performance from their locations from Metso facilities and also from worker home. Majority of the locations were ok, but there were some concern regarding performance (e.g. India, Australia, Peru).

After these testing it was still needed do further testing in India were faced biggest challenges. Gurgaon and Alwar are two main locations in India were purchase orders are placed.

From table 13 can be found results from India´s test. There can be found which date the test was done. Testing included couple different things:

- how fast login is happening
- How fast 300 searches can be done.
- How fast all companies which are in system can be found.
- How fast companies' overview window will open.

Performance Testing Pool4Tool Office				
	Gurgaon	Alwar	Bawal	Ahmedabad
Date	7.8.2013	6.8.2013	8.8.2013	8.8.2013
Login	14s	30s	10s	10s
Search 300	8s	9s	4s	3s
Show All Company Overview	5s	10s	3s	2s
	8s	8s	8s	7s

With VPN				
	Gurgaon	Alwar	Bawal	Ahmedabad
Date	7.8.2013	7.8.2013	8.8.2013	8.8.2013
Login	15s	1m,5s	20s	20s
Search 300	6s	20s	8s	3s
Show All Company Overview	5s	15s	4s	2s
	6s	20s	16s	15s

Without VPN				
	Gurgaon	Alwar	Bawal	Ahmedabad
Date	7.8.2013	7.8.2013	8.8.2013	8.8.2013
Login	10s	1m,15s	16s	10s
Search 300	7s	37s	7s	3s
Show All Company Overview	5s	28s	5s	2s
	5s	35s	16s	10s

Table 113. Tested solution speed in India.

There were some activities, which Metso did need on user's computer and network to get decent performance from India and problematical locations. However it looks so that these won´t solve the issues and performance remains in rather poor level. But also we know that this has not anything do with P4T solution, it would be same issues if we choose some other solution provider.

6 E-PROCUREMENT PROJECT PLAN

6.1. Crowd clovers analysis – project organization

To build project organization it were very useful to use Crown clovers tool to build our project organization, finding who are catalysts, connectors, promoters and enablers. After that needed to only transfer results to look like project organization and find right names from our existing organization. From chart 9 can be finding results of this analyze (crown clovers) and results (project organization chart). Crown clovers were helping to find right people and teams to project organization chart, because it looks so many perspective that are needed.

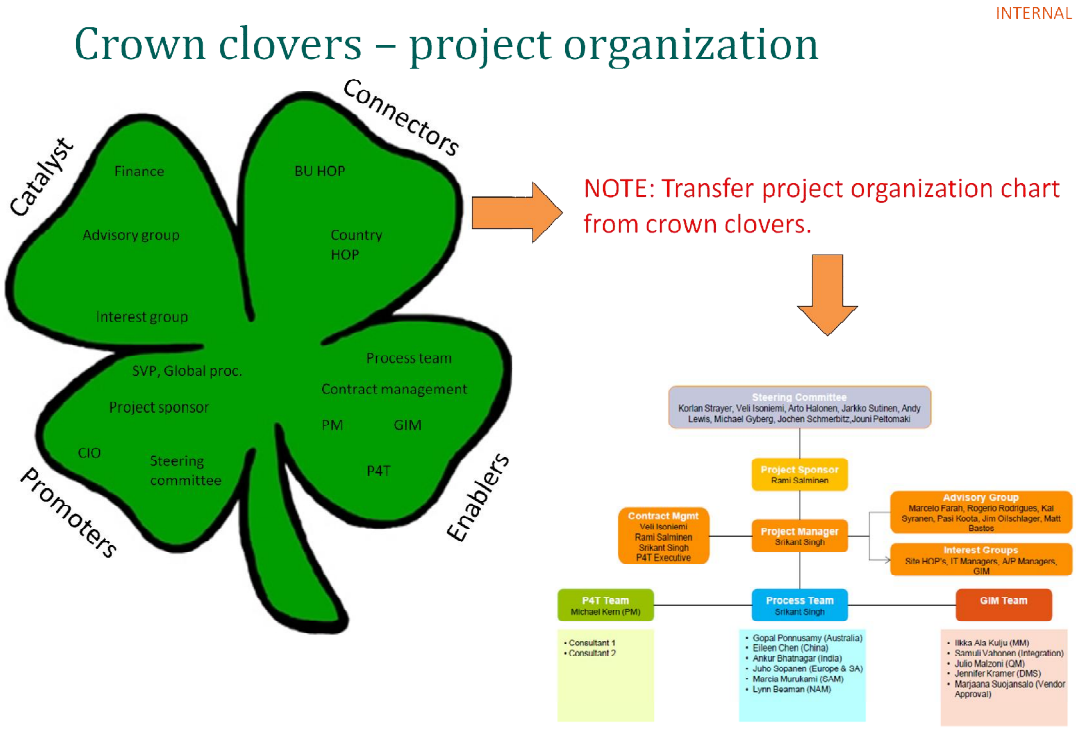


Chart 9. From CROWNE analysis to project organization.

6.2. DARPA analysis

Using DARPA analysis it were possible to figure out what kind of things are from far reaching, technically challenging, multidisciplinary and actionable point of view need to cover also in when doing project plan. Results can be found chart 10 and table 15. As can noticed from chart 10 that e-procurement is not so far reaching or technically challenging, because e-procurement tools are not new innovation, those are used already 10-20 years in world. Also can be recognizing that e-Procurement project is multidisci-

plinary because it needs lot of people from different department and specially knowledge from these teams to finalize to project. Finally could be mentioned that project is actionable because of it requires little effort to take action toward.

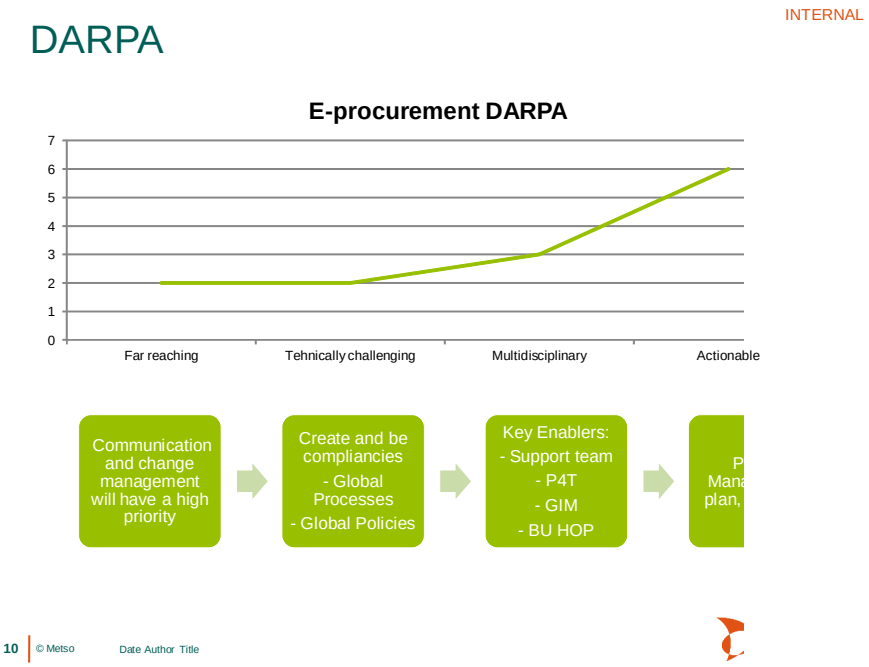


Chart 10. Results of DARPA analysis.

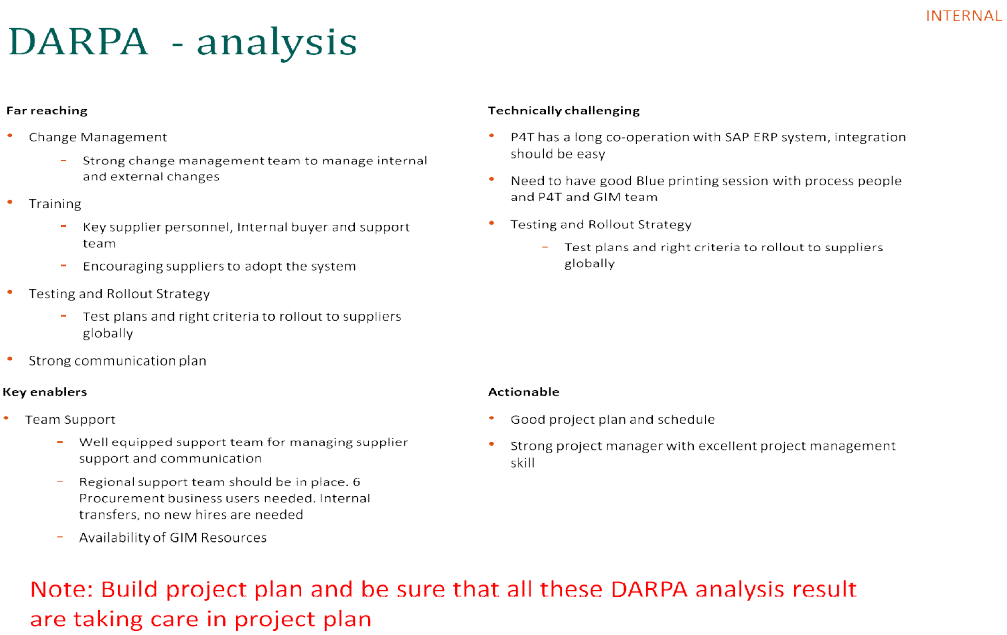


Table 124. Results of DARPA analysis.

All these result were helping to build project plan and schedule. Especially change management, trainings need extra effort as mentioned in table 14. Also can be noticed that e-procurement project needs strong project manager with excellent project management skills.

6.3. Project timeline phase

Project plan and schedule were building together with P4T and project team. Also make sure that results from DARPA where included in project plan and schedule. P4T team has pretty much project plan and schedule frame already build from their past project with other customers. Of course project team has also lot of experience from past from similar project. Project plan and schedule include design, build, and pilot, enhance and roll-out steps as can be seen from table 15 with more details. In this view is only showed a high level project schedule. More detailed project schedule were build in MS project. From start of the project to finish was planned to take 7 months totally.

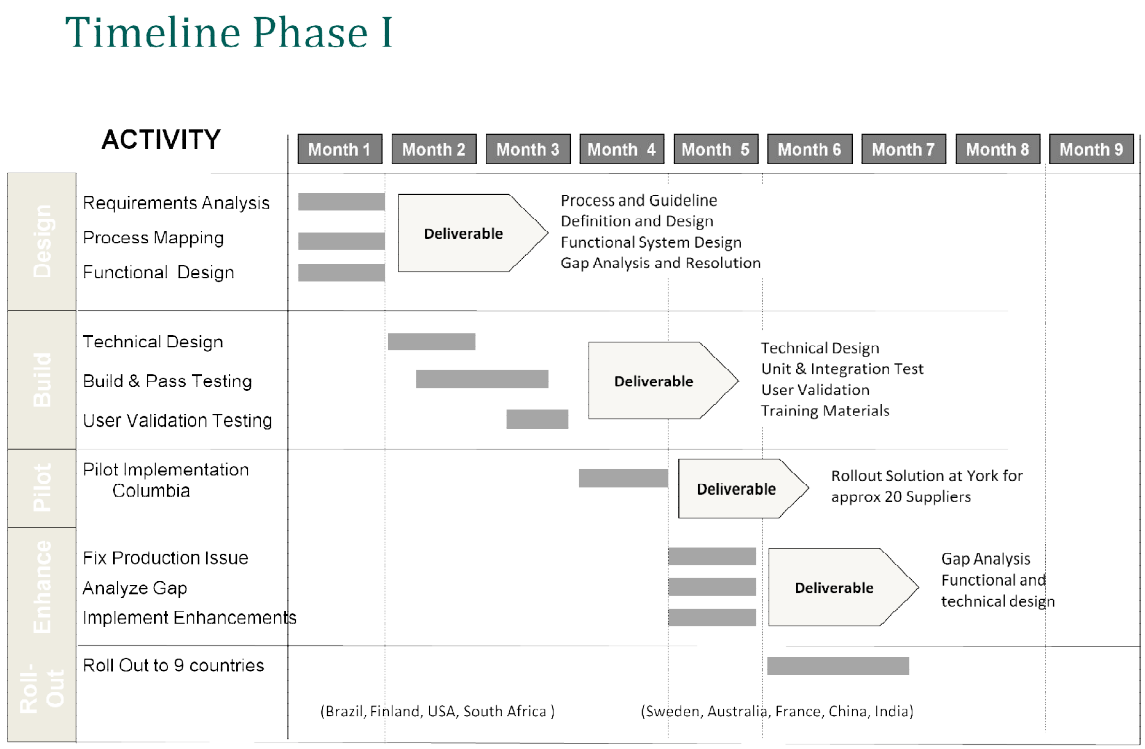


Table 135. Project´s high level timeline.

6.4. Project management

In project management point of this project used MAC´s approved templates to follow up the project. Those standard templates includes: project summary, status summary and project cost summary. Example of those templates is below tables 16-18.

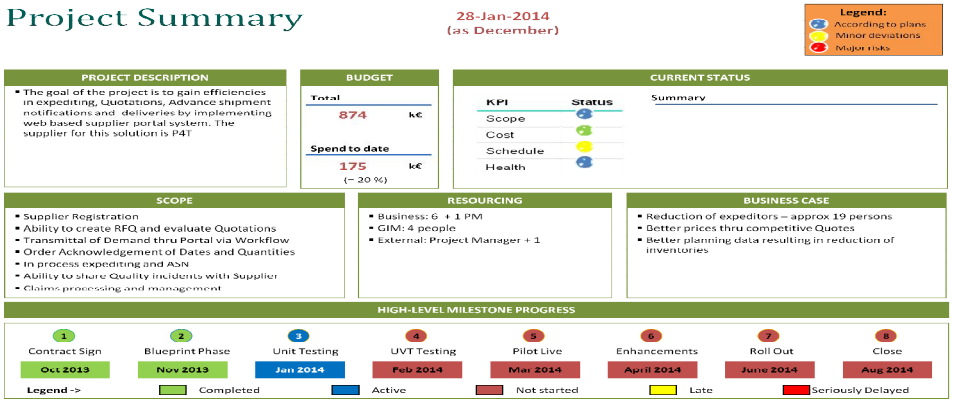
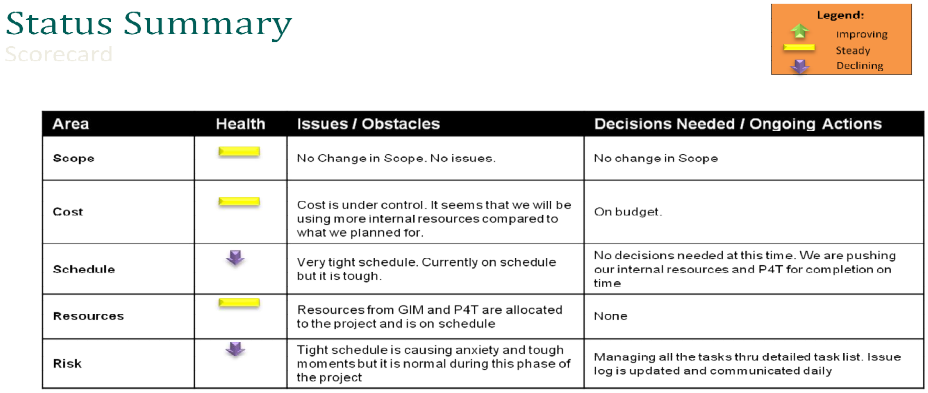
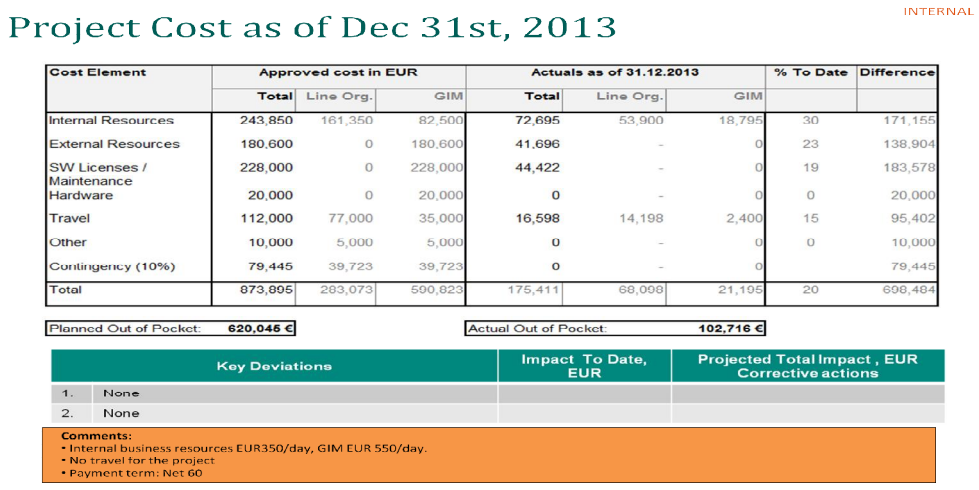


Table 146. Standard project summary template.



Area	Health	Issues / Obstacles	Decisions Needed / Ongoing Actions
Scope		No Change in Scope. No issues.	No change in Scope
Cost		Cost is under control. It seems that we will be using more internal resources compared to what we planned for.	On budget.
Schedule		Very tight schedule. Currently on schedule but it is tough.	No decisions needed at this time. We are pushing our internal resources and P4T for completion on time
Resources		Resources from GIM and P4T are allocated to the project and is on schedule	None
Risk		Tight schedule is causing anxiety and tough moments but it is normal during this phase of the project	Managing all the tasks thru detailed task list. Issue log is updated and communicated daily

Table 157. Standard project status summary template.



Cost Element	Approved cost in EUR			Actuals as of 31.12.2013			% To Date	Difference
	Total	Line Org.	GIM	Total	Line Org.	GIM		
Internal Resources	243,850	161,350	82,500	72,695	53,900	18,795	30	171,155
External Resources	180,600	0	180,600	41,696	-	0	23	138,904
SW Licenses / Maintenance	228,000	0	228,000	44,422	-	0	19	183,578
Hardware	20,000	0	20,000	0	-	0	0	20,000
Travel	112,000	77,000	35,000	16,598	14,198	2,400	15	95,402
Other	10,000	5,000	5,000	0	-	0	0	10,000
Contingency (10%)	79,445	39,723	39,723	0	-	0		79,445
Total	873,895	283,073	590,823	175,411	68,098	21,195	20	698,484

Planned Out of Pocket: 620,045 €

Actual Out of Pocket: 102,716 €

Key Deviations		Impact To Date, EUR	Projected Total Impact , EUR Corrective actions
1.	None		
2.	None		

Comments:
- Internal business resources EUR350/day, GIM EUR 550/day.
- No travel for the project
- Payment term: Net 60

Table 168. Standard project cost template.

To reach projects targets e-procurement solution need to work with those suppliers which have more that 100 Purchase order line per year, which would be covering totally more than 500 000 purchase order line in MAC, which is little bit more 70 % from total purchase order lines.

7 BLUEPRINTING

Idea of on blueprinting was to finalize procurement processes and also to explain processes to solution provider P4T so that P4T could be able make needed changes to solution so that our processes would work. Here is the scope that we covered in the blue printing phase:

- supplier registration (first step of supplier approval)
- ability to create request for quotations
- collect quotations and evaluation
- transmittal of demand thru portal via workflow
- order acknowledgement of dates and quantities
- in process expediting
- advance shipment notifications
- ability to share documents and drawings with supplier
- ability to share quality incidents with supplier
- claim processing and management

All topics were covered in three and half days together with support team, P4T team and mBITS team. Detailed timetable can be found from table 19.

	Pool4Tool Blueprint Days				
	Monday October 7, 2013	Tuesday October 8, 2013	Wednesday October 9, 2013	Thursday October 10, 2013	Friday October 11, 2017
8:00 AM		Introductions	SAP Integration with RFQ plus On-boarding Process	SCM/Advice Notice	On-boarding Process - Flowcharts 2 (Workflow, Forms, etc.)
8:30 AM		Recap Project Status/Review Workshop Deliverables			
9:00 AM					fine tuning of On-boarding/Registration
9:30 AM		SRM		SCM/ Delivery Notice	fine tuning Security/Document Storage
10:00 AM					
10:30 AM					fine tuning RFQ, discussion, questions
11:00 AM					
11:30 AM					
12:00 PM	Break for Lunch	Break for Lunch	Break for Lunch	Break for Lunch	Break for Lunch
12:30 PM					
1:00 PM		RFQ	SAP Integration with POM	SCM / Invoice	
1:30 PM					
2:00 PM					
2:30 PM					
3:00 PM					
3:30 PM			SCM/POM	Security/Document Storage	
4:00 PM					
4:30 PM				On-boarding Process - Flowcharts 1 (Workflow, Forms, etc.)	
5:00 PM					

Table 19. Timetable and agenda for blueprinting.

7.1. Outputs from blueprinting

After the blueprinting following high level processes were able to finalize together with P4T team:

- Supplier on boarding for existing and new supplier.
- Purchase order (PO) confirmation flow
- RFQ and quotation process
- Quality notification and claim process

On boarding existing supplier (chart 11.) to P4T system there won´t be any supplier approval needed anymore from MAC procurement. Those suppliers which are in scope will be added to P4T system. And then has been agreed that all business units need use then these processes making business with supplier.

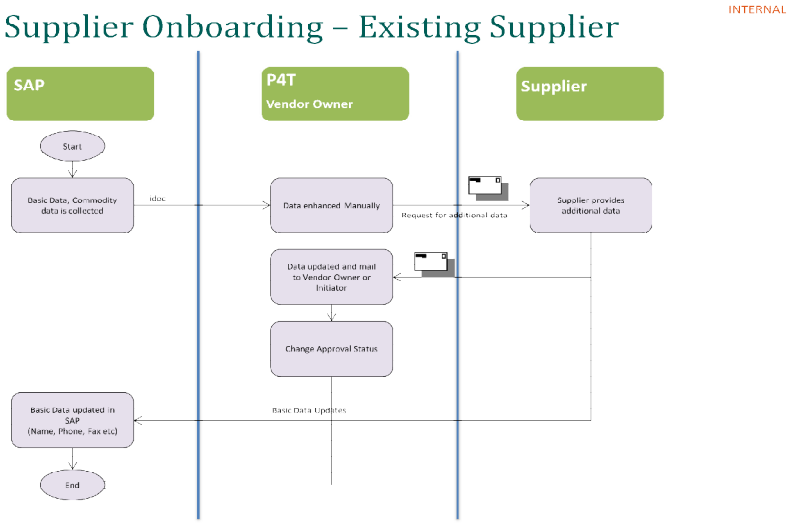


Chart 11. Supplier on boarding for existing suppliers

At the same as this supplier on boarding process (chart 12.) for new supplier on board suppliers to P4T and SAP system it is also MAC global supplier approval process which all direct material suppliers need to follow up to come MAC supplier. Before this process, every business lines have its own supplier approval process if even any written once.

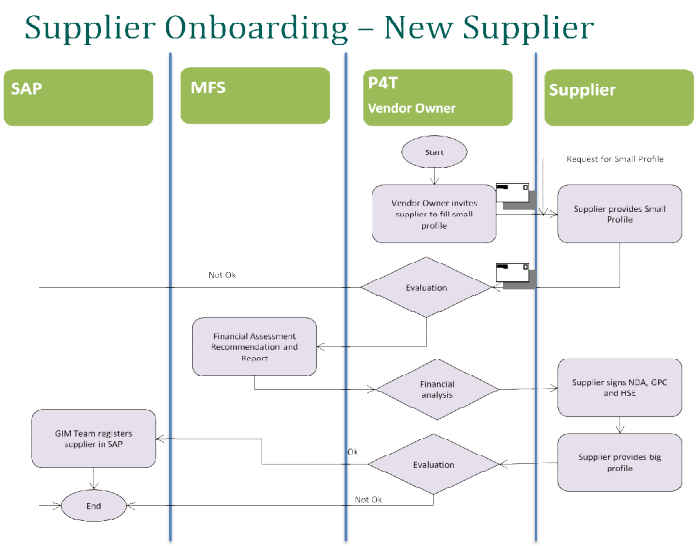


Chart 12. Supplier on-boarding for new supplier.

Purchase order (PO) confirmation process (chart 13.) exists except of course not so that P4T system will be helping do that. Also need to mention that PO confirmation was not happening like it should be happened so that supplier confirmation date would be added to SAP system also. Quite often that were missing, because it was manual work and purchaser did not add it to system like should it. This process flow force purchaser to reactive if supplier´s confirmed delivery date is not the same as it was in PO. If supplier confirmed delivery date is same as in PO, then it automatic updates order confirmation date to SAP system, so that it is available to everybody.

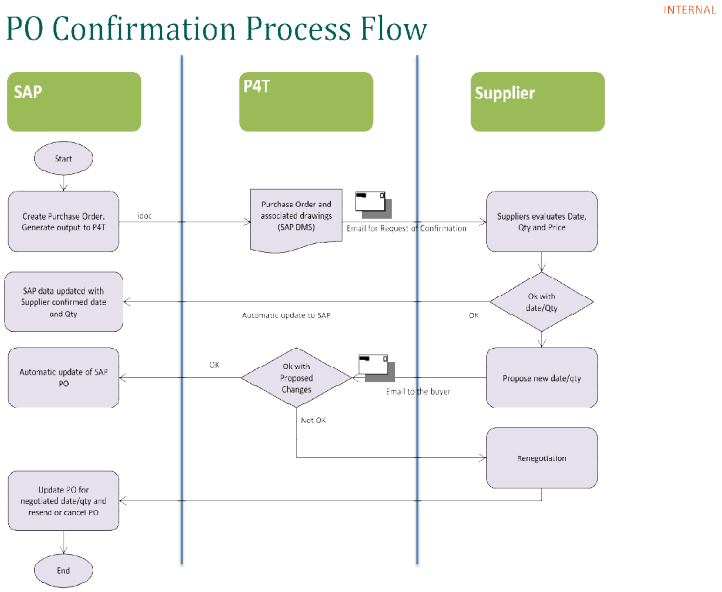


Chart 13. Purchase order (PO) confirmation process flow.

In past request to quote (RFQ) process were happening out of system, even that in MAC´s SAP there was existing this process. Reason is that almost nobody was not using that was that it was not to share any documents together with RFQ. Then they do it thru emails with their templates adding needed documents to same email. Also all analysis was happening out of systems so visibility to RFQ was almost null global point of view. In P4T RFQ process can be share document thru portal and all analysis can be done also inside the system. And finally SAP purchase order info record can be automatic update when supplier quote is accepted. Flow is introduces on chart 14.

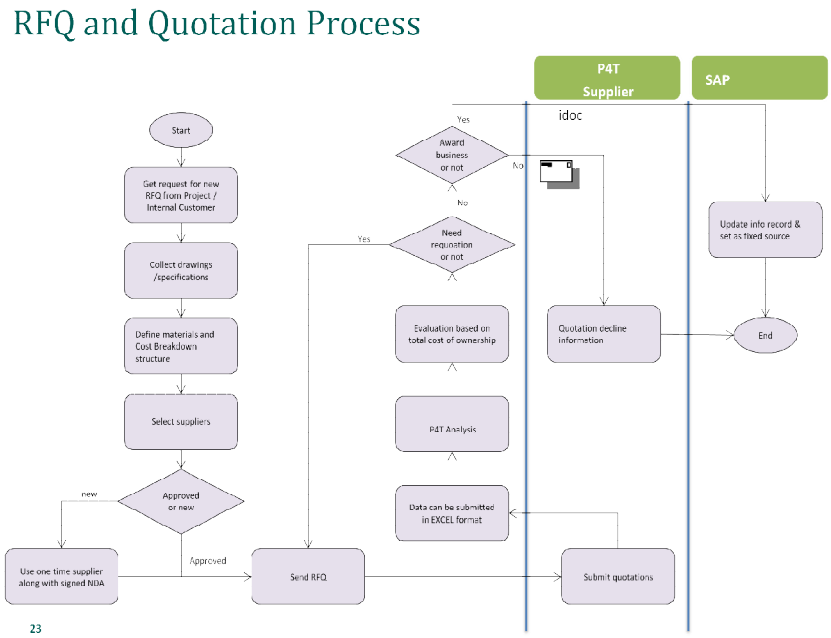


Chart 14. Request to quote (RFQ) and quotation process

MAC did not have any global tool in use to manage quality notification and claim management. In this process all quality notification would happen in SAP and communication between MAC and supplier would happen in portal.

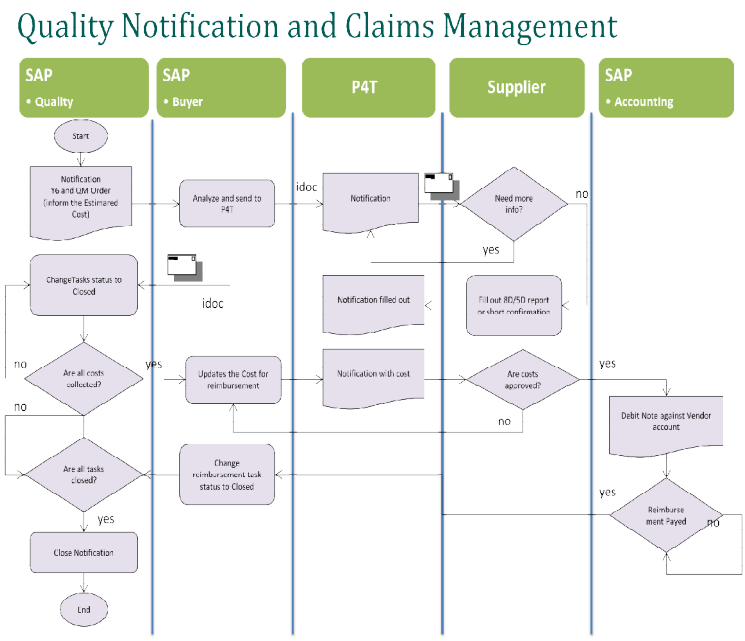


Chart 15. Quality notification and claim management process.

After blueprinting P4T modules were choose and detailed scoped below those were named, which can be found from chart 16.

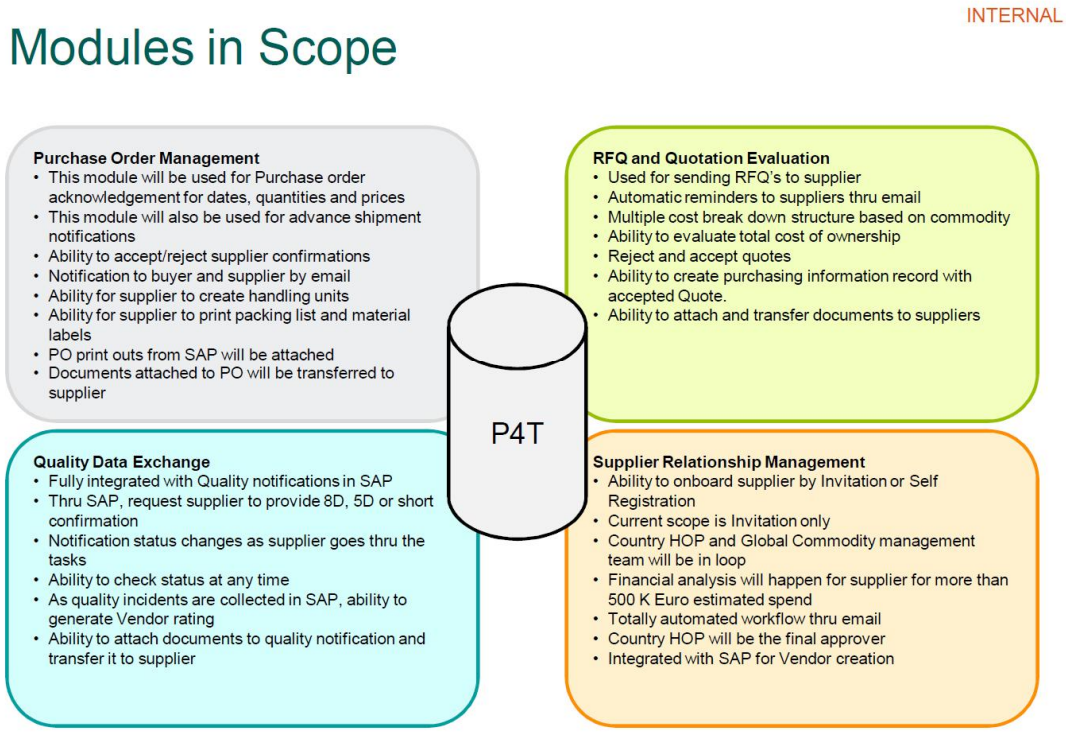


Chart 16. P4T´s modules in scope.

8 BUILDING THE SUPPORT MODEL

Five different support models (chart 17.) were development to see different choices and then choose best option for Metso needs.

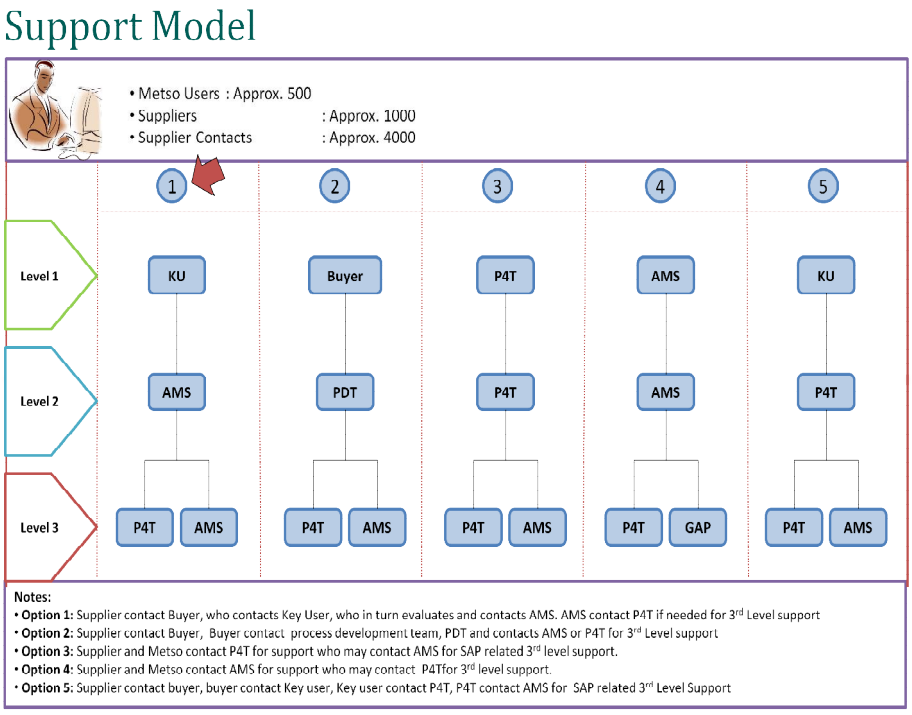


Chart 17. Evaluated Support models

In table 20 can found Pro´s and Con´s which were leading to choose option number 1 to be support model for P4T possible issues. One of the biggest reasons to choose option 1 was that AMS model is already in use and users are familiar with that.

Comparison of Support model

Option	Pro's	Con's
Option 1: KU-> AMS -> P4T/AMS	• Supplier contacting buyer is known channel • Key user familiar with AMS model • Key users are business experts • Knowledge will be retained in Metso • Key user will have one channel to AMS	• Longer queue time because of multiple parties • Initial/Ongoing Knowledge transfer to AMS • Global Vendors will have multiple key users • More work to key users. Business expert spending time with IT issues.
Option 2: Buyer -> PDT -> P4T/AMS	• Highly knowledgeable skilled team • Metso Team will have more flexibility and control • Knowledge will always be maintained • Local knowledge of business and Strategy	• 50% or more time from PDT will be required • Very expensive in house team • Process team will be come permanent team • Difficulty in ramping up or down • Usually Development team is not good support team
Option 3: P4T -> P4T -> P4T/AMS	• Highly knowledgeable SAP and P4T team • Minimal training requirement • Allow Metso focus on more important things • All time zones and language requirement covered • Supplier portal is used for issue reporting (Seamless interface)	• Less flexibility as less or no control on P4T support resources • Knowledge will be retained by P4T team • Data flow between P4T and AMS needs to be streamlined
Option 4: AMS -> AMS -> P4T/AMS	• Familiarity with way of working of AMS • Tested model and has been use from many years • Trusted partner	• Lack of P4T knowledge • Will have to train AMS resources • First time outside parties contacting AMS • Huge number of external contacts (~4000) • Time zone and local language support
Option 5: KU -> P4T -> P4T/AMS	• Supplier contacting buyer is known channel • More knowledge retained by Metso • May be less expensive as we are not using P4T for first level	• Longer queue means delay in response • Global Vendors will have multiple contacts • More work to key users. Business expert time in IT problem solving. Not expert

Table 170. Comparison of support models.

9 PILOTING SYSTEM AND ENVIRONMENT

Testing where split to three different kind of testing step: unit, integration and user validation testing, which time tables are written down below chart 18.

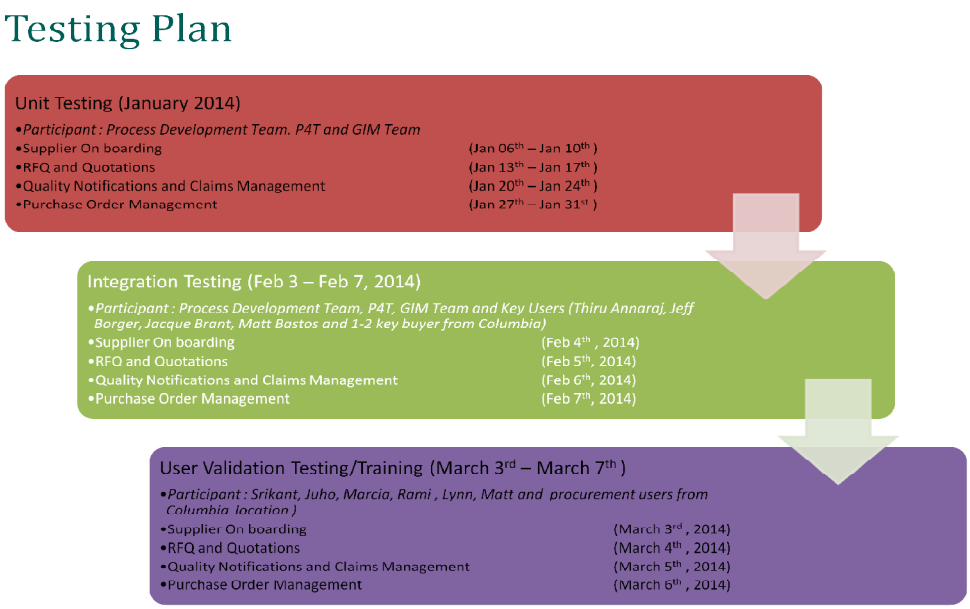


Chart 18. Testing plan with timetable

In Unit testing our support team, P4T and GIM team focus the find biggest mistakes from solution, and fine tune processes. This testing was happening own location everyone doing testing individually. Follow up each day founded issues and collect those issue log.

In Integration testing idea was to test all process changes that were found out in unit testing. This testing was happening Columbia, SC inside one week. It was important that they were also invited some business person to test the solution. Usually this kind of testing is done still inside the project team, but in this case it has two purposes: needed some change management happen to break the ice with the business and get feedback from users that are user for this solution end of the day. Also of course same time train them to use the solution. For testing we build various tests scripts to test all these processes to find more mistakes and collect those to issue log.

Below is introduced one example of the test script for purchase order module. Purchase order management is process where all PO transactions are handled with on-boarded P4T suppliers. PO transaction will includes PDF copy of PO and attached PDF drawings if DRI exists in SAP. Master system is SAP and P4T is supporting system.

Following four scenarios are possible:

1. New PO confirmed without changes
2. New PO confirmed with changes lead time and/or quantity
3. Existing PO changed by buyer
4. Running report in P4T for PO´s

Scenario 1: New PO confirmed without changes

This scenario is applicable for creating new PO to SAP and supplier confirms it as ordered. Buyer will create new PO in SAP. After printout SAP transfers PO to P4T. Supplier contact person will receive e-mail notification of new incoming order. Supplier logs in to P4T and opens PO and attached documents. Supplier will confirm PO as ordered. P4T will transfer confirmation to SAP and SAP creates AB to PO lines confirmation tab. There should be only PO creation and supplier confirmation as manual steps in this process.

Scenario 2: New PO confirmed with changed lead time and/or quantity

This scenario is applicable for creating new PO to SAP and supplier confirms it with changed data. Buyer will create new PO in SAP. After printout SAP transfers PO to P4T. Supplier contact person will receive e-mail notification of new incoming order. Supplier logs in to P4T and opens PO and attached documents. Supplier will confirm PO as with changed delivery date or/and delivery quantity. P4T will send notification to buyer that confirmation does not match with order. Buyer logs in to P4T and accepts new confirmation or rejects it. If accepted buyer fills new delivery date for order in P4T. After accepting SAP creates AB to PO lines confirmation tab. If rejected, P4T will re-send it back to supplier or buyer cancels line item or complete PO.

Scenario 3: Existing PO changed by buyer

This scenario is applicable for changing existing order. Buyer will change PO at SAP and sends new version of PO to P4T. Supplier contact person will receive e-mail notification of changed order. Supplier logs in to P4T and opens PO and attached documents. Supplier will confirm PO as ordered or with changed delivery date or/and delivery quantity.

Scenario 4: Running report in P4T for PO's

This scenario is applicable for running several different reports in P4T. Buyer will use search functionality inside SCM and also saves template for report.

Scenario 1.1: New PO confirmed without changes (no drawings)

Step #	User Role	Action Steps	Input Data	Expected Results	Actual Results	Pass/ Fail	Defect #
1	Buyer/SAP	Create a new PO	All requested data	PO created	4500923051	Pass	
2	Buyer/SAP	Printout PO from SAP	All requested data	IDOC created and data transferred to P4T. PDF created to spool and transferred to P4T as attachment. Mail sent from P4T to supplier for new order. *Check if the email has correct message*	e-mail was received No attachment was created	Pass with fail	
3	Supplier/P4T	Download new order	None	PDF copy of PO opens and confirmation can be done.	Page to confirm the PO was opened.		
4	Supplier/P4T	Confirm order	Confirm order as PO	IDOC created and data transferred to SAP. AB line created to PO line item level. *Check AB dates, quantity and creation indicator.*	AB confirmation was not created	Retest	

Table 21. Example of how scenarios results where evaluated.

From each of these scenarios were run thru and created report (table 21) to evaluate did it pass or fail and if it fail what where actions to fixed and re-test.

10 GLOBAL IMPLEMENTATION

10.1. Go live pilot

Before going globally on live with these processes and tools, pilot need to done together with MAC´s purchasing plant, which were Columbia SC, USA plant. Columbia location was matching couple good reason to be our pilot plant. There are all these three business line, MPS, CSE and SBL, which help us to get feedback from every business line at the same time. Also Columbia plant is one of biggest plant from Purchase order line point of view, so that's way was able got enough transaction going thru P4T.

Pilot scope includes eight suppliers. Pilot started train suppliers first use the P4T system and understand all these processes.

From chart 19 can be found go live pilot plan and timetable. Each week MAC and Supplier start to use different modules. Starting from purchase order management and ANS and finally ending to new supplier on boarding module. Some enhances need to be done when pilot was moving forward thru each module.

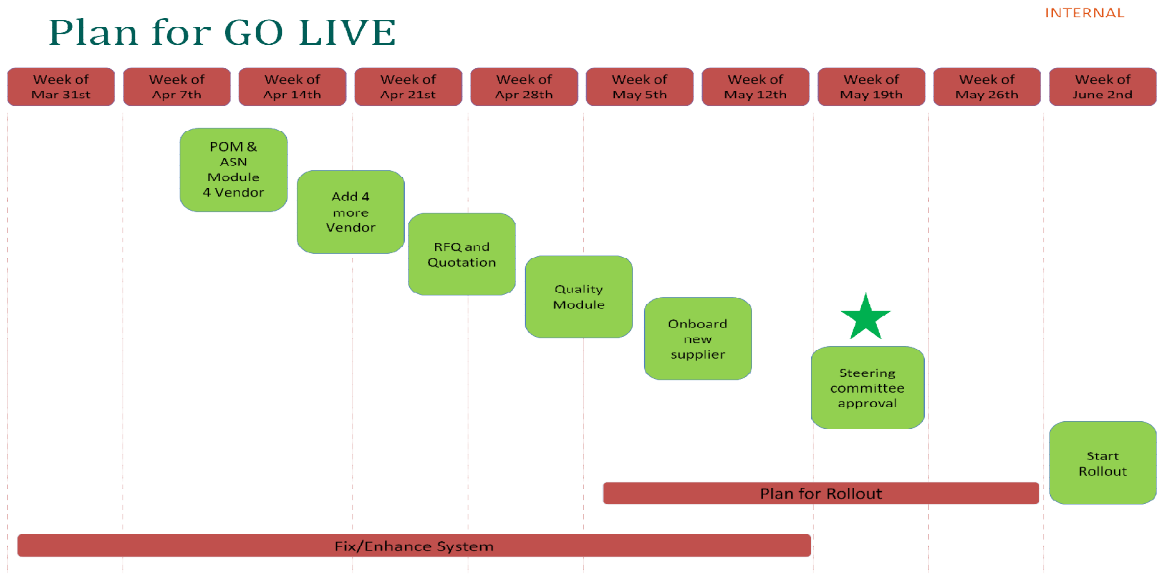


Chart 19. Plan for GO LIVE

10.2. Roll-out plan

Support team (Chart 9. blue box), did have a big role to roll-out tested and developed e-Procurement system to all main countries and there to main procurement plants. Plan included 9 countries which timetable are introduces in chart 20.

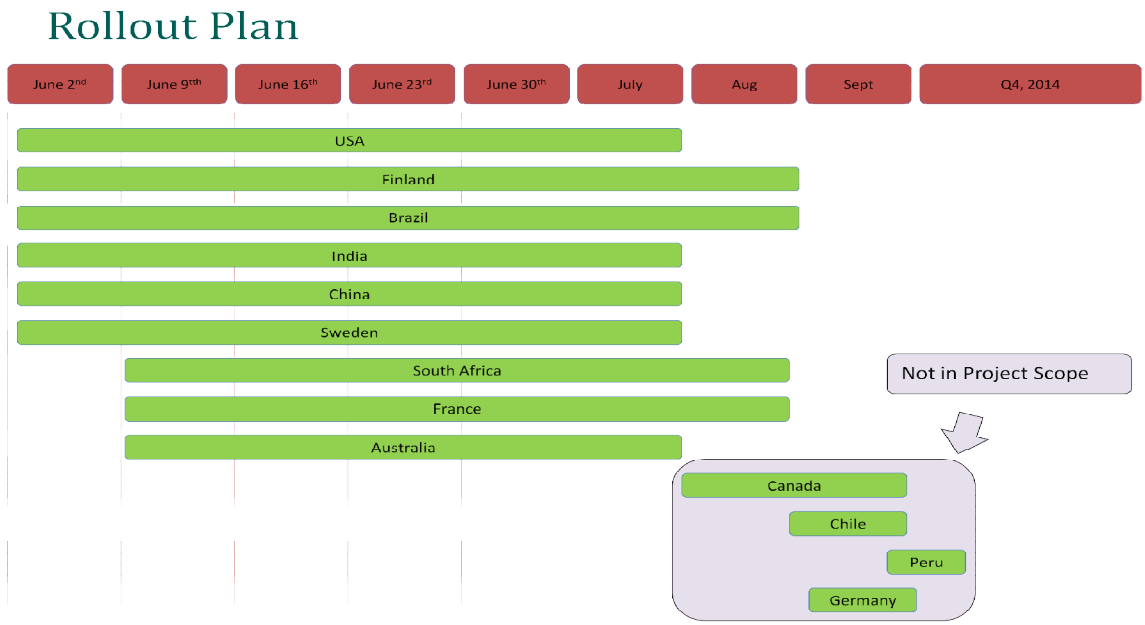


Chart 20. Rollout plan to roll out e-procurement to Metso locations.

Roll-Out plan looked like as in chart 20 are introduced. Support team was in a big role to roll-out this to agreed location. Support team trained user from each location and they rolled-out to suppliers. Some location support team person also trained suppliers, but ideas was that business will lead those training so that ownership and responsible would be also on their shoulders, because they are anyhow responsible supplier development end of the day.

11 PROJECT RESULTS

Target was to provide e-procurement tools to business units so after implementation business lines could improve their efficiencies in their procurement activities. Next will be looked e-procurement´s project results and then final conclusions.

11.1. e- Procurement project results.

Analyzing final project summary can be notice that project went over budget, but when looking deeper from out of pocket cost, project did not went over the budget. Out of pocket, which means how much MAC was external costs, was almost 100k€ lest than it was budgeted. End of the day project was successful from budget point of view.

Looking table 22 and from there how many supplier, purchase orders, RFQ and quality notification are created from go live to begin of Jan 2015 can be noticed that all main project targets were reached: over 700 supplier on boarded to system, more than 27 000 Purchase orders created, over 95 000 purchase order line items goes thru system, and lot of RFQ go already thru system and same thing with quality notifications.
After deeper analysis PO line count, it showed that project reached 65-70 % level from all purchase order line items that MAC is creating. So targets were reached and capabilities to business were given to make more efficiencies procurement action in future.

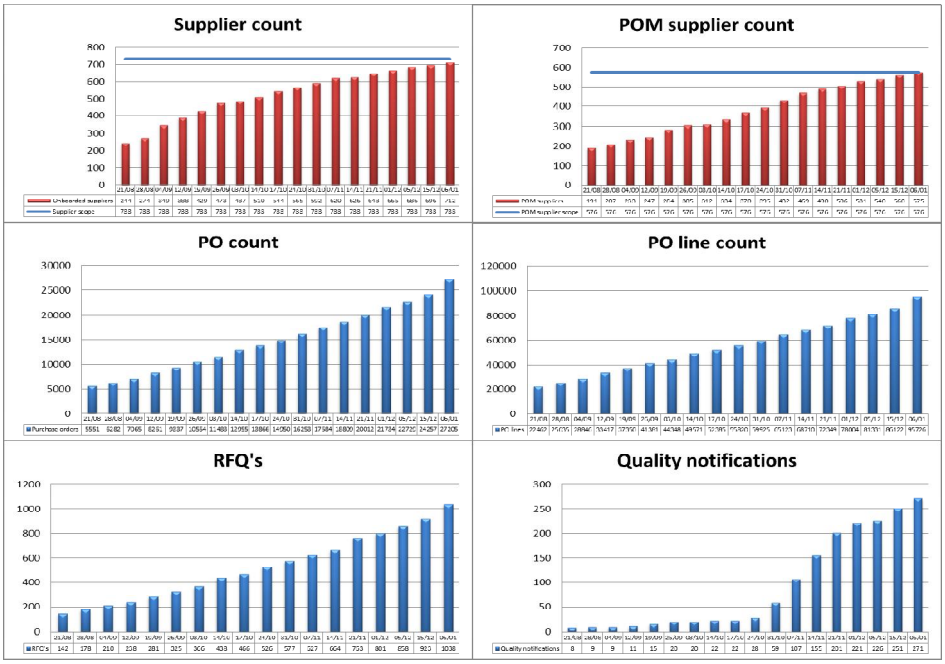


Table 182. 6th Jan 2015 Status of use of P4T solution.

As can be seen from table 23 that Sweden and USA still need little bit more push to reach agreed complete level. Rest of location are already in good shape, some even were able complete even more that was planned do inside the project.

INTERNAL

Country Level Status (POM)

Country	Suppliers in Business case (2012)	Suppliers in scope (2014)	POM Suppliers (Current)	% completed	Number of PO's	Number of PO lines	Comment	Corrective actions
Australia	30	33	29	88%	1 348	3 020	All suppliers on-boarded from revised scope. Struggling with RFQ module	RFQ's still happening outside procurement. No progress on QM
Brazil	149	106	109	103%	8 783	28 772	Really good usage of PO and Quality module. Low level of outgoing RFQ's in Brazil due to use of contracts.	Keep on pushing Fabio to utilize RFQ module when possible
China	30	22	29	132%	877	5 549	Scope extended from original. Tianjin struggling with low demand. Only few quality issues reported.	Keep extending scope at Tianjin when demand grows
Finland	72	86	77	90%	5 939	17 319	DC Europe warehouse transfer taking lot of recources. QM pilot on-going. Fully in use Jan 2015	Continue to extend scope
France	99	30	99	100%	1 707	7 120	Good progress continues in all modules	*% completed against original business case*
India	72	85	70	83%	2 291	13 785	Numbers increasing slowly. Low demand at PO's.	Need to push more suppliers and quality module.
South Africa	46	42	43	103%	1 021	3 439	Really good progress last months.	Need to continue implementation of QM
Sweden	62	64	45	70%	842	2 104	PO side still at low level. Good progress with RFQ	Will continue to support all locations Q1
USA	130	108	74	69%	4 397	14 618	Consolidation point issue with York	Development moved for testing Jan 5th.
Grand Total[6]	**755**	**576**	**575**	**99%**	**27 205**	**95 726**		

Table 193. Country level status of roll-out in January 2015

Project´s overall feedback from supplier and end user were on positive site as can be seen from charts 21 and 22. Analysis these charts tell that from supplier and end user point of this project were also successful overall. Generally global commercial component suppliers which are using this system gave lower figures, and reason for that is those suppliers are using some many other system already and they are not interested to have more these kind e-procurement system that they need use.

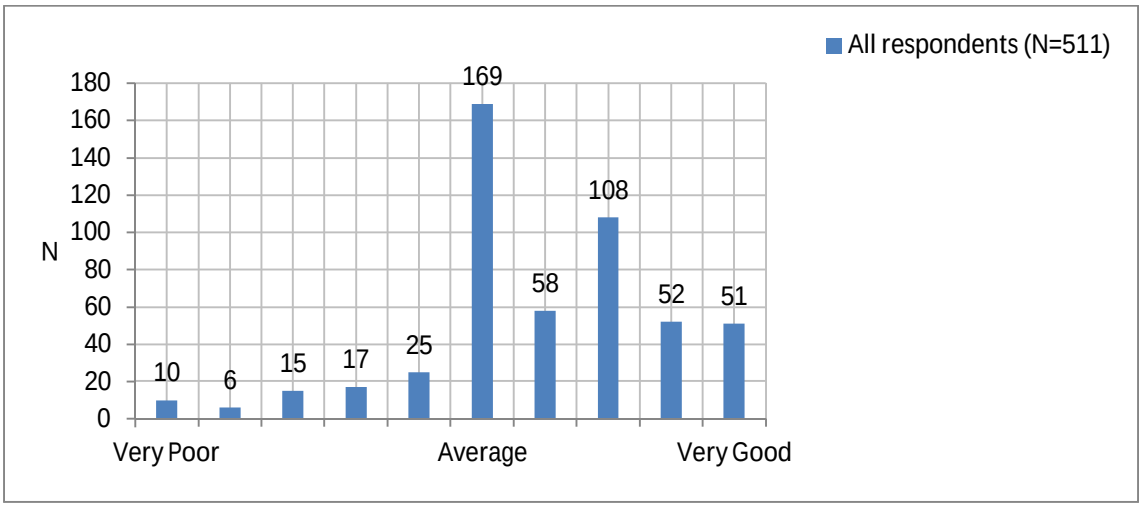


Chart 21. Overall project feedback from suppliers.

Comments from end user that gave lower figures than average are analysis and feedback collect and done correction action if needed. But overall most respond are on average or above, so end user point of view can be said also that project was successful.

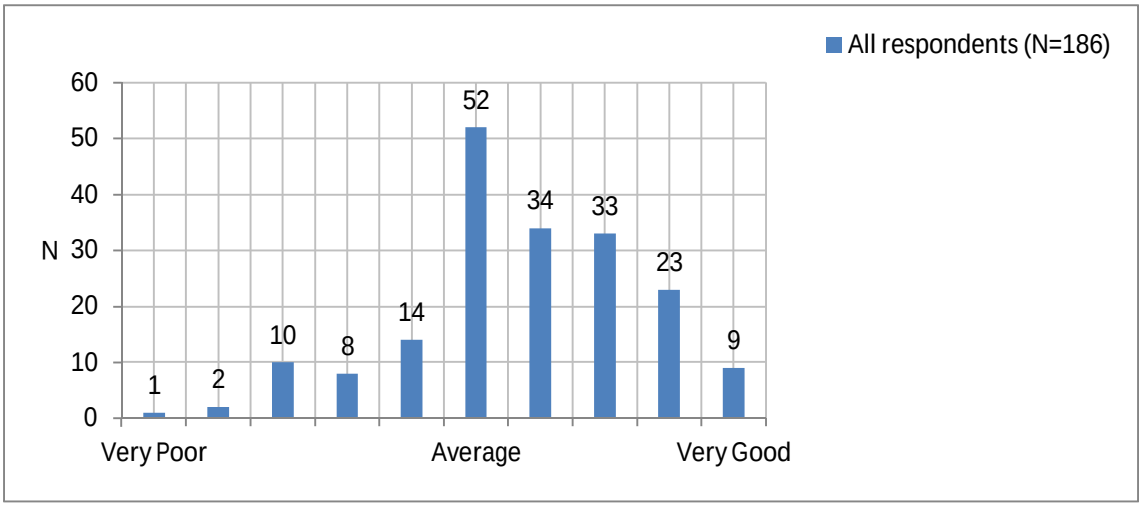


Chart 22. e-Procurement´s end user general feedback to overall project.

12 Conclusions

Project target was to give business opportunity to drop headcount thru effective processes and e-procurement tools and as can be seen from results project reached targets: all main location are now using following processes thru e-procurement: purchase order management, supplier relationship management and claim management.

Thru the e-procurement theory and use of playbook tools gives to MAC procurement teams better picture of e-procurement project, - processes. Now everybody is talking so called same language when talking about e-procurement. Also Delphi interviews get team closer each others, because results were went thru together and benchmarking of best processes is on going all the time which were recognized thru these interviews and results.

Planner – buyer concept roll-out continues together with Auto Purchase Order model to give business even better opportunities to more effective. As today Brazil were able to drop few headcount together with Auto Purchase order model. So project actions can be already seen in procurement and those actions are leading procurement to be more effect in future and fewer people are needed to do purchase orders and etc. As mentioned in theory that this implementation of e-procurement will reduced requisition-to-order by 66% cycle and requisition-to-order cost by 58% can be seen that Metso location are going to that direction as Brazil were able to reduce headcount already.

Still ongoing developments need to finalize which are not parts of anymore this project. In table 24 are introduced those open action that project´s steering committee approved to finalize in last project´s steering committee meeting, same meeting where project was ended in success.

Ongoing developments

Development	Responsibility
"Do not ship" functionality	P4T
PO status logic	P4T
New supplier onboarding	P4T and PDT
Document transfer streamlining	mBITS and P4T
Material label printout	P4T
Multiple smaller enhancements to tool	P4T and PDT
Sustainability management in on-boarding	Arto Huuskonen and PDT
Castiron support and buffer system	mBITS

Table 24. Ongoing developments for existing e-procurement tool

Also there is couple internal procurement KPI under development to see: how many purchase order lines are done per location per planner, how much spend is going thru per buyer.

These KPIs will give better view to understand how effect that location is compared to other location, of course need to understand also behind the numbers that what kinds of business there are doing: replacement orders, project orders, etc... Any how it will give at least to those locations which are doing similar business to make effectiveness comparison possibilities and make needed changes or improvement if big caps between locations can be found.

Also in a future MAC should focus to get indirect purchasing happening thru e-procurement tools. That should be next big development project in MAC´s procurement and hopefully this project and this thesis will help that project to be even more successful. Also this project would support more and more to get procurement to be more effective and also give one more opportunity to business eliminate headcount easier because as today most of the indirect purchase orders do not happen thru SAP and then it gives too much “room” to excuses to drop headcount because nobody is not able to see what is really happening on those processes. So a lot of streamlining is needed in indirect purchasing processes.

13 Discussion

I as project sponsor can also confirm that project was successful of course, because all project targets were reached and so that way project were able to give now opportunity to business lines do more effective procurement in future. But also I am happy to say that project was also successful from project management point of view, even that project timeline little went over, and biggest reason for that were that at the same time there were so many other project on-going in MAC which were in same step: implementation step.

This project gave to me and also to whole project team lot of confidence that this kind a big project which is effecting globally can be done quite short time and be successful on that, if all team members are fully co-operating and knows what we are looking, as in this project were. But if I could do it again I would definitely would do better project portfolio management in that point of view that those project which effect to globally would not have same timing to do implementation. Also I believe that support team which were build just before this project has now better understanding what is needed to make it happen this kind of project, as bringing even small things to table when blueprinting is happening which would effect from their country point to global processes. And I believe that indirect e-procurement project will be more successful from this point of view.

It will be interesting to see how we are able to eliminate headcount in each business location in future. As I changes to lead one of these business unit as head of procurement, distribution supply chain. So first I was part of building these tools and processes now it time to make it happen and get all effort out of these tools and processes in real live.

DATA SOURCES

Mining and construction general presentation_2014 - http://avenue.metso.com/AboutUs/MaterialLibrary/Pages/Default.aspx

Playbook for strategic foresight and innovation, 2013 T.Carleton, W.Cockayne, and A.Tahvanainen

http://www.lut.fi/web/en/playbook-for-strategic-foresight-and-innovation

http://avenue.metso.com/Pages/Default.aspx

http://en.wikipedia.org/wiki/E-procurement

http://fi.wikipedia.org/wiki/Delfoi-metodi

Tutkimusmenetelmät – Marko Mäkilouko powerpoint presentation

http://www.purchasing-procurement-center.com/e-procurement-advantages.html

http://www.purchasing-procurement-center.com/e-procurement.html

http://www.pool4tool.com/cms/en/europe/

http://www.zycus.com/

http://liaison.com/

http://www.coupa.com/

http://www.gep.com/

http://www.basware.fi/

http://www.ariba.com/

https://www.sap.com/finland/index.html