

### 3.1 Lean-Kaizen tools for the accounting system and the decision making process

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#### **3.1. LEAN-KAIZEN TOOLS FOR THE ACCOUNTING SYSTEM AND THE DECISION MAKING PROCESS**

##### **Summary**

The accounting is a tool for the registration of the economic events of the company. We can say: “Accounting is the language of the business”. The data from the accounting system can be used in the different field, inside and outside of the company. The data and the information from the accounting – and from the controlling, too - have to be real and trustworthily. The accounting data is the basic of the decision making for the different field of the management and also for the investors, creditors and business partners, too. For the right decision we need real and correct data.

It is a new approach to create real information from the company processes and financial statement by productivity improvement methods. The reality of the information from the accounting system can be increased by 5S, Kaizen, Lean, VSM. The costs of the administrative processes can be decreased and the creation of the information will be more effective. The quality and the speed of the information determine the effectiveness of the all downstream processes. The new way of thinking about the information quality in the accounting is the basic of the Accounting Quality House.

**Keywords:** accounting, management, real accounting data, quality improvement, Accounting Quality House

##### **Introduction**

The accounting data have to be true, fair and real; this is the basic element of the decision making. The accounting uses its own methods and processes for the registration of the economic events. Any process contains losses and the losses decrease the quality of the accounting data. The quality improvement methods can be tools to increase the trustworthily of the accounting information.

##### **Methodological background**

###### ***The accounting information***

Numerous literature sources and practice regards the accounting as “language of business life”. The accounting’s special feature is the monitoring and numerically recording of the economic processes and based on the records produces information.

Basic features of accounting are that recorded generated data are objective. Of course, the next question is that the understanding of the accounting data and it can be the barriers of the use of accounting information.

There are two fields of the use of the accounting data: inside and outside the company. Both of the users need different data to take decisions of various kinds which are created by specific accounting and controlling systems.

The accounting system has two fields: financial accounting and management accounting.

The essential feature of financial accounting is the regulations for this system are from the outside of the company, mainly are laws or standards. The form of the information is financial reports. The information of financial accounting reports is used by the economical partners, creditors, investors and potential investors, and by the authorities and government. The different companies' data are comparable. Of course, the sector the activity and the size have to be the same of the entities. The information from this system is aggregated and reflects the past.

The management accounting system is for the information requirements of the inside the company. The data reflects not only the past, the information have to help the future activity of the entity. The information is about the product and service and the focus of the data recording is mainly the production activity. The recorded fields are decided by itself the company. The main aim is not to fit to the outside regulation. It's essential task to evaluate the company production flow to increase the efficiency and the profit of the entity. The information is not only monetary unit but also in natural units, too.

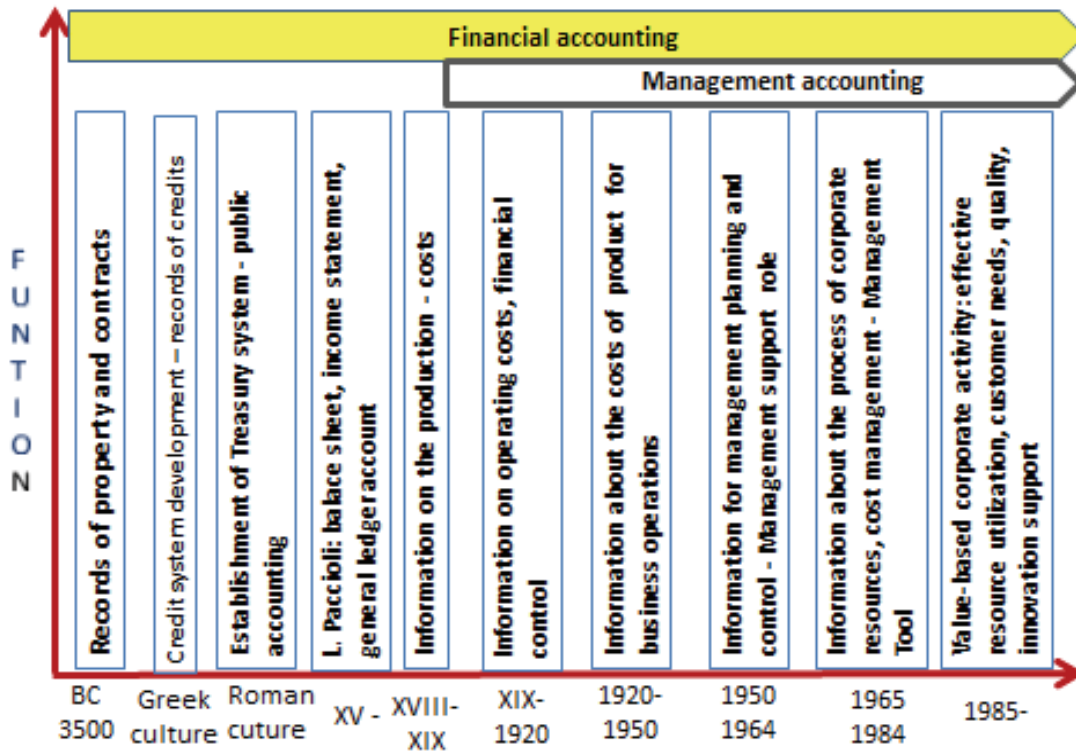
A further methodological tool of management accounting is the cost accounting from the first-level cost calculation system to the Activity-Based Cost accounting system depending of the company's development level and the information requirements. The form and the content of the information depend on the corporate habits and the other systems in the company.

Basic expectations for the management accounting to be able to adapt quickly the changes of the company's operations and to fit into the company's other integrated systems (human resources, purchasing, sales, production, decision-making levels, etc.). It is essential that the information is timely and often the "reporting period" is different from the usual financial accounting period.

The accounting systems since their formation have significant changes depending on the social, economic and production environment.

Figure 1 shows the stages of the accounting development and their functions. By the appearance of the managerial accounting starts the differentiation between the management and financial accounting. In the figure starting from the appearance of the management accounting we focused on the management accounting functions.

**Figure 1: The accounting development and differentiation of accounting functions**



Source: own design by Abdel-Kader and Luther (2006)

### **Quality improvement**

Often listened term is the quality and the content of it is not interpreted consistently. Quality is basically the value for which the buyer is willing to pay.

Any activity performed by the entity the customer satisfaction has to be the primary objective because this one can guarantee the company's long-term survival.

The demand for quality and the quality development methodologies (Taylor, 1919) appears at the beginning of the 20<sup>th</sup> century. Quality is a category which can be the key to the development and the reliable operation of a system.

Changes and development of requirements can be detected in the ISO standards, too. In ISO 9001:1994 version, the focus was put on documentation, procedures, inspection and permanent product quality. ISO 9001:2000 and 2008 standards introduced quality objectives, customer satisfaction and process management concept. The new ISO 9001:2015 standards focus on risk management, use of opportunities, skill (or competence) management and customer satisfaction. Due to the fast technological development, technology changed the working methods, geographical boundaries. Production and supply chain became more complex and the information available has multiplied exponentially. These changes significantly affected quality standards and quality systems (Illés and Szuda, 2015).

There are of various methodologies for quality development and the basis of it is the Japan Total Quality Control (TQC). Commitment to quality and development perhaps the greatest example is the Toyota Production System (TPS). The Toyota Production System methodology includes all activities are related to the company and to increase the quality and efficiency. Table 1 shows the Total Management System- TMS of Toyota and we highlighted only the activities related to accounting.

*Table 1: The Toyota's Total Management System- TMS*

The elements of Total Management System- TMS	The content of Total Management System- TMS	Activity
TMS- Toyota Management System	1. Corporate management	
	2. Finance Financial accounting	2.1. Financial income
		2.2. Financial stability
		2.3. Financial growth
		2.4. Short-term profit control
		2.5. Short and medium-term profit plan
		2.6. Management structure
	3. Cost planning Management accounting	3.1. Current cost definition
		3.2. Cost planning
		3.3. Capital investment
3.4. Budget control		
3.5. Acquisition		
3.6. Cost competitive		
4. Globalization		
TDS - Toyota Development System	5. Drawing plan 6. design review 7. <b>Design to cost</b> 8. Feedback system 9. Technical procedures	
TTPS - Toyota Total Production System	10. Production plan 11. Quality management 12. Process and production planning 13. Production and TPS	
TMSS - Toyota Marketing and Sales System	14. Product and brand 15. Product Design 16. Sales planning 17. Internal organization 18. External organization	

Source: own based on TMS Certification, (2012)

The key of Toyota's success and growth is not only in high-quality vehicles but also in the administrative processes that support their development and production. The

Toyota Management Accounting System (called: cost planning) plays a prominent role in corporate success. The Controlling System is also part of the Managerial Accounting.

Table 1 gives an overview of systems required to run a company. The different systems do not carry out their activities in isolation. There is a continuous feedback between the systems.

For each system the fundamental requirement is the continuous improvement activity and the high level practice. The company's continuous development work started in the 50's and it is still going.

The essential expectation of the company's accounting and controlling systems that it operates effectively reflects real economic processes. One of the possible tools of these expectations can be the application of quality improvement methods.

There are various quality improvement methods and the usage of this methods depends the goal and they can use separately or together.

The methods can be used not only for the production companies but also for the service companies can provide a solution. By the quality improvement methods the administrative processes can be optimized and the reliability (authenticity) of the information can be increased by them.

The most fundamental aim of the quality improvement methods is to eliminate the losses and to increase the "good" process stability. By these methods, the cost will decrease and the profit will increase.

For the development of the accounting system there are four methods to use:

- Lean,
- Kaizen,
- 5S, and
- VSM.

By Lean production or Lean activities, the focus is on the value elements of the processes. This is the basic idea. The main aim is the elimination of the waste.

To achieve the goals it has to be considering the Lean principles (Womack-Jones, 2009):

1. Identify the value - understand how feel your customers the product value
2. Understand flow of value - analyze the flow of goods in the supply chain and identify where value is created and how it could be eliminated the loss
3. Ensure the flow - renew the processes and practices and the organization itself, that insure the value to flow freely through the whole supply chain
4. Introduce the pull - eliminate the usual approaches "batch and queue" mentality and introduce new processes where the delivery is regulated by the down-stream process
5. Strive for perfection - you know that your organization reach the true Lean state only through continuous re-evaluation of its activities.

To access the Lean status the basic information is from the Value Stream Mapping (VSM).

The Kaizen is one of the tools for developing business processes. Kaizen, the Japanese way of thinking and it means continuous improvement. According to Imai (2012) the Kaizen means improvements, and continuous improvement in private life, family life,

social life and the work environment, too. When it is applied to the workplace environment, Kaizen means continuous improvement involving everyone as a contributor managers and workers alike. The essence of the Kaizen: there's a point in business process what it can improve. If we can find the bottleneck and we can improve on it we can ensure our company development.

Many people tend to confuse the Kaizen to the problem solution. Kaizen means: a continuously change on a stable operating process to improve the activity.

Kaizen is a small investment by small changes to improve the existing process. For example: replacing two machines side by side and it eliminates the material handling losses.

Kaizen is customer people and process-oriented and in small increments development in all areas and by everyone on a daily basis.

In the Kaizen management system information flows faster than the pyramid type (western style) systems where the flow of information and feedback at each level can be jammed or distorted. The development and the decisions start from the bottom to up because the daily problem solving guarantees the company surviving.

The most basic quality improvement method is the Japanese 5S and it can be used as an element of Kaizen.

The is a 5S rigorous approach to management that provides accurate and disciplined approach to secure clean and efficient working environment, maintain, develop the necessary rules.

The 5S provides the working environment, sound and purity of which results in a simpler and more transparent workflow with continuous quality improvement. By 5S activity the problems can be identified sooner.

The methods acronyms mean (Osada, 1991):

- 1S- SEIRI (sorting, grading): the necessary and not necessary items need to be separated! On the work area may only items what are needed for the job!
- 2S – SEITON (placement, layout and marking) the used devices must be specified place and after use they have to put there. The devices are spatially arranged according to the frequency of use!
- 3S – SEISO (cleaning and inspection): the workplace and their environment the plant and equipment must be keep clean and must be maintained! The disorder may be noticed only in a clean environment!
- 4S – SEIKETSU (standardization and self-discipline): Keep the workspace in the best condition, the eliminate the defects immediate. Standardize the 5S activity, Rules for maintaining of 5S.
- 5S – SHITSUKE (morale, attitude, diligence, education) full compliance with the rules, full participation and good attitude, personal accomplishment of the tasks and responsibilities, communication and feedback, continuous improvement.

There is one more S. It is 6S – SHUKAN. Calls for the delivery of improved knowledge.

Another method of reducing the corporate losses and the quality improvement is the Value Stream Mapping (VSM). VSM helps to find out the right quality improvement method. The VSM's aim is to determine the location of the value creation process and

places. The Value Stream Mapping includes the company's processes the value-added and non-value-added processes, too. By the mapping process, VSM classifies and quantifies the value generating processes points, classifies and quantifies the losses in the process, shows the flow of value and information.

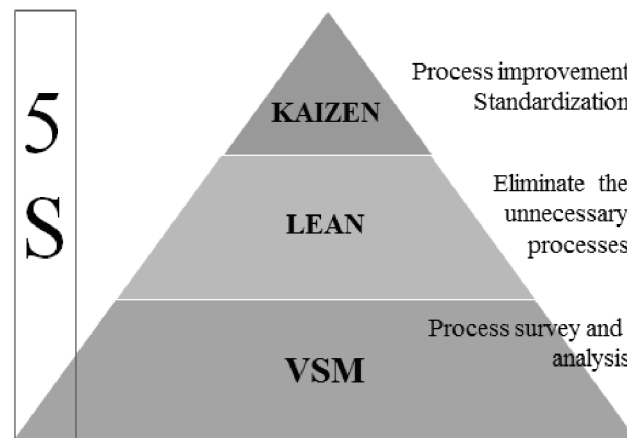
The VSM helps to create the Current state map that describes the current processes. After the exploration of losses it can be described the improvement points and opportunities. The final result of the VSM is the Future map and it shows the improved optimal state of the processes. The quality improvement methods (Lean, Kaizen, 5S, VSM) are interrelated (Figure 2).

The VSM mapping is suitable method for analyzing the processes and information and the VSM map determine the Lean and Kaizen actions.

The Lean aim is to eliminate the loss-making processes and to maintain the valuable processes. The Kaizen ensures the keeping of the valuable processes and the 5S is the basic method of the productivity improvement (Figure 2).

Due to the joint application of the productivity improvement methods the valuable processes can be fixed. The standard helps to follow the production processes and it helps to keep the knowledge at the labour migration.

**Figure 2: The quality improvement methods and their connections**



Source: own design

## Results

Any accounting system's basic requirements are the reality neutrality and the completeness.

The information (data) must to be accurate, realistic, enough and the relevant information must be available at the right time and place.

The abovementioned requirements can be ensured by quality improvement methods. In the accounting system, we can approach these requirements by using the quality improvement methods:

1. accounting process
2. the accounting information quality

### ***Results by process approach***

In the process approach, we have to think about the organization of the accounting processes.

The accounting activities primarily office-going process and it means to optimize the activities in the office.

In fact, the office procedures imperfections cause 70-80% of the other process losses.

The Value Stream Mapping is the tool of the accounting administrative processes survey.

The method reveals the accounting recording process itself, determines the valuable and non-valuable process analyses the process step-by-step.

Of course what is valuable or non-valuable process it depends on the information requirements. The information requirements of financial accounting are decided by “outside” regulations (law, financial reports, principles etc.). The information requirements of management accounting are decided by company’s management itself. The VSM is the method to find out these information requirements.

After the VSM comes the introduction of the Lean. It has to eliminate the valuable and non-valuable processes from the system. The tool is the Lean Office. By the Lean Office it is possible to make clear and efficient office processes. There are 35 losses in the office categorized into five groups:

- 7 mail losses
- losses of information
- other process losses
- human resource losses
- psychical environment losses

The main aim is to eliminate the office losses from accounting processes. In parallel to the Lean office has to implement the 5S. The office 5S activity and the results are in the Table 2.

Implementation of 5S activities can point to further weaknesses in administrative processes and provide a basis and also re-tool system, as does the implementation of the Kaizen activities. The Kaizen can help us to achieve the result in small improvements.

Kaizen processes resulting from the business relationship of the administrative office accommodation can be arranged rapid flow of information between various departments (divisions). The physical transfer of documents labelling transportation scheduling may also increase efficiency. The organization of documents’ movement can decrease the usage of human resources.

The development of Kaizen possibilities in the accounting process are depending on the procedure and the willingness of workers.



**Table 2: The office 5S activity and results**

<b>5S</b>	<b>5S activity</b>	<b>5S results</b>
1S- SEIRI (sorting, grading)	Remove unnecessary objects and documents. Unwanted e-mail selection, unnecessary bills and receipts destruction, removal unnecessary old forms. Removing unnecessary bad old office supplies (pens, devices, etc.).	Only necessary and sufficient documents and tools remain in the workplace.
2S – SEITON (placement, layout and marking))	The workplace physical and ergonomic design (chairs, tables, based on frequency of use and availability of equipment), marking the location of objects. Documents folders organization, labelling, marking based on function and remit. Indication of the dossiers of documents based on the real path of process (VSM). Determination codes, taking into account the origin and use of information (documents). (E.g.: colour codes and text use.)	Transparent jobs by the assets and documents.
3S – SEISO (cleaning and inspection)	Cleaning what means making a clean job. Physical examination of the tools the computer printer (maintenance - long-term and operational tools to work). Continuous status monitoring. Keep clean documents and in excellent condition to archive.	Clean working place, working tools.
4S – SEIKETSU (standardization and self-discipline)	The intelligent use of first 3S. Developing standards based on visible markings connected to the workflow. Create documents, compliance and monitoring the usage of the standards (attendants). Creating and conscious application (permissions, remittance, data and information flow) of checklists.	Standardized (controlled) process, what is understandable for everyone.
5S – SHITSUKE (morale, attitude, diligence, education)	The system is designed to maintain awareness, workers encourage the incorporation of the 5S corporate culture. Full enforcement of the rules. My responsibilities and duties to fulfil. Communication and feedback. Continuous development.	Workers with higher levels of morale it ensures effective and quality work.

Source: own design

**Results by the accounting information quality approach**

The accounting (management) systems are continuous and interactive connection with the corporate management. The evaluation of processes, the effectiveness and the decision making itself will only be effective and forward-looking information based on the reality. If we are looking the reality of the accounting information, we have to start from the basic aim of the accounting: recording the real economic events. The accounting is the entrepreneur’s processes in the office.

Why is the VSM the tool of the reality of accounting information?

VSM is suitable to the real mapping of the processes and it suitable to write down the production and service processes. On the VSM map, you can point to the information points in the processes for the accounting and it is possible to make a manual.

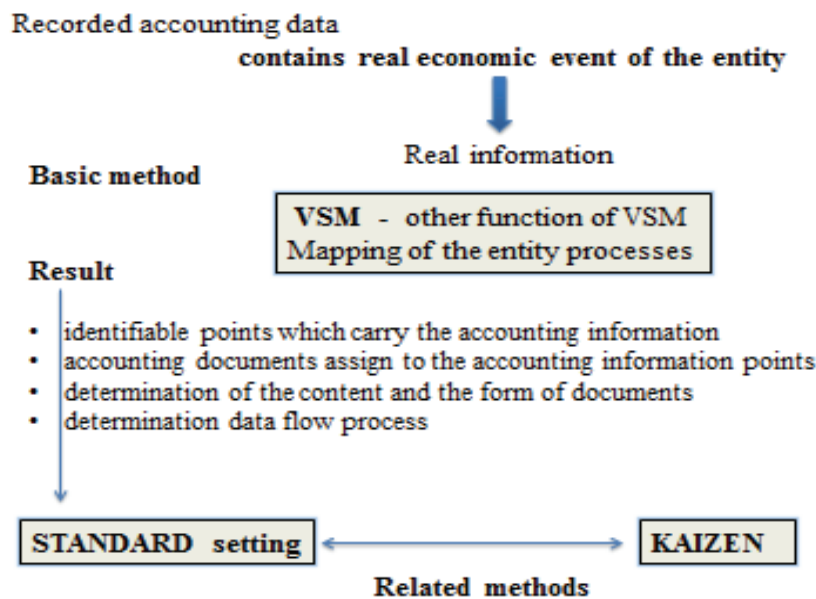
This manual contains

- the information points in the processes
- the basic documents
- the types of information and data
- the flow of information
- the registration place of the data.

In this case, the VSM function is not the “classical” VSM function but also the VSM specify a way for the real and deficit-free accounting registration.

After the standardization of the accounting data flow it is needed the development. The reason of the development the entity activity changing (it is independent from the accounting system – it is coming from the production changing) and the most real accounting flow standard making. The tool for the accounting flow development is the Kaizen (Figure 4).

**Figure 4: Results by the accounting information quality approach**

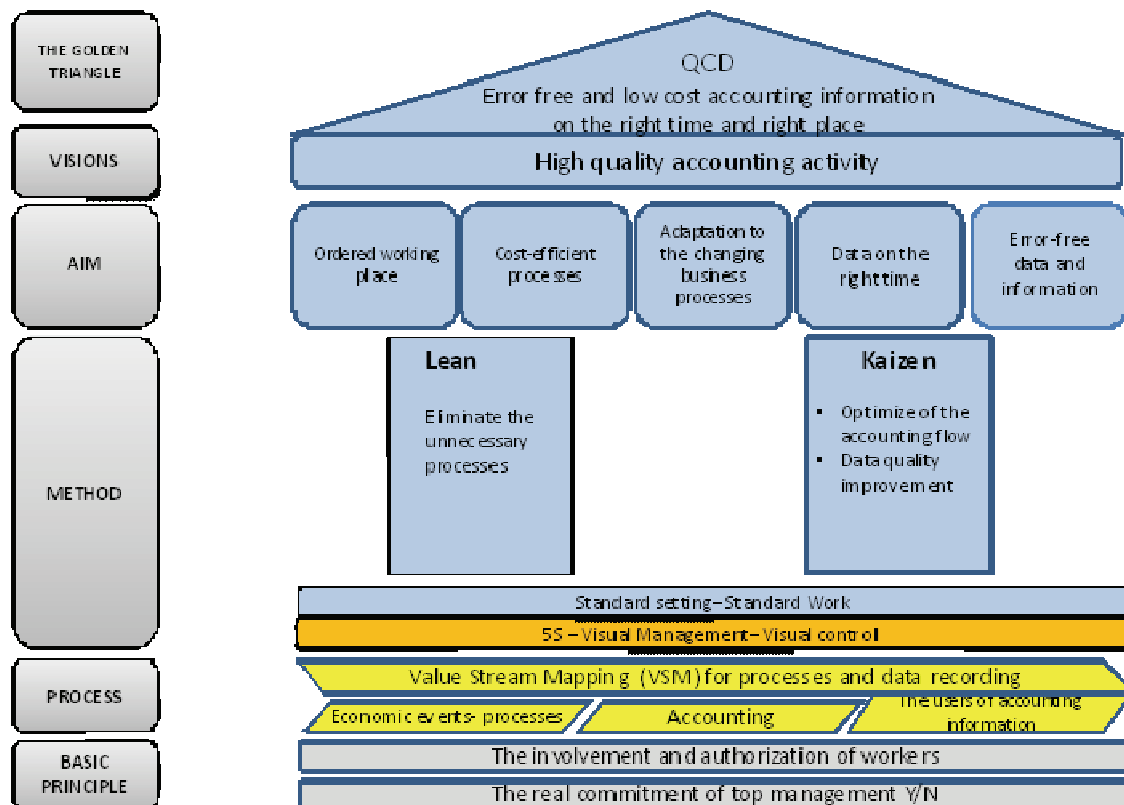


Source: own design

## Conclusions

The information quality from the accounting system can be increased by the quality improvement methods. By the quality improvement methods can be reduce the administrative costs and it will be more efficient the creation of the information. The reliability of the accounting processes and data can be increase by the application of VSM, Lean, Kaizen and 5S methods. All this is summarized in Accounting Quality House (Figure 5).

**Figure 5: The Accounting Quality House**



Source: own design

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