

# QUALITY MANAGEMENT AND INNOVATION

*by Peter Merrill*

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The Waterstone survey of Canadian Corporate Culture shows over 80% Of Canadian CEO's agree there is a direct correlation between culture and financial performance. Strong cultures mean people respond to changing markets and everyone feels part of a single team.

The ASQ's survey on 'People Equity' in their 'Economic Case for Quality' shows conclusively "If quality initiatives are to succeed they cannot be confined to a few people with 'quality' responsibilities".

Clearly all of the people in your organization need to be closely involved in your Quality Management activity.

The attached paper explains some of the techniques such as 'Communities of Practice' which need to be implemented in order to involve your people. This way you grow and manage the knowledge in your organization and create the best value for yourself and your customer.

I am leading the ISO 9000 International Study Group on 'People Involvement' and would be glad to share with you the ideas and techniques that are being developed to better involve your people in the running of your organization.

I would be delighted to give to your organization the presentation which this paper relates to or discuss methods of better implementing 'People Involvement'. Just contact me at [pmerrill@questmanagementsystems.com](mailto:pmerrill@questmanagementsystems.com)

Kind Regards

*Peter Merrill*

P.S. Please pass this paper to a colleague

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## QUALITY MANAGEMENT; PERCEPTION AND REALITY

The popular Perception of Quality Management is that it is about writing Procedures which go into a Manual. It is often seen as a 'Quality Department' activity consisting of 'Trenchwork' such as Inspecting and Testing.

The Reality is that Quality Management is about running an organization and in order to do this we need Knowledge. Knowledge feeds Innovation and Innovation is what feeds success.

'Data and Information' are gained from Measurement of both Processes and the Management System.

In a successful Organization this Data and Information is analyzed, Knowledge is gained from the analysis and 'Innovation' comes from this Knowledge.

In a successful Organization the Business Processes link to form a System which enables the flow of information. The System is Leadership Driven and the Leadership achieves success through 'Decisions based on Fact'.

This creates Value for the Organization and for its Customers. That is what makes the organization successful.

I am going to point out to you some of the essential directions which your Quality Management System must take in the near future.

## QUALITY MANAGEMENT PRINCIPLES

However, Quality Management is not just about Process and System and Measurement. It has a Philosophy based on eight principles that come from the experience of Business People worldwide.

The principles start by saying that a successful organization is 'Customer Focused'. Something we all recognize. The job of the Leadership is to take this Customer Focus and set direction and create objectives for the organization. The Leadership must then create an environment in which the people become involved in achieving the objectives. People are the essence of the Organization and fundamental to achieving its objectives.

We have learned over many decades that the most efficient way of utilizing an organization's resources is through 'Process Management'. However the processes in organization need to come together as a 'System'. It becomes a permanent objective of any organization to seek 'Continual Improvement' by using this 'System'. If you don't then your competition will overtake you.

The way we drive continual improvement is through a 'Factual Approach to Decision Making'. Finally, 'Mutually Beneficial Supplier Relationships' are what give the greatest value to the customer and to the organization.

ISO 9000 has taken these principles and gives us a business model which enables us to transform Data into Knowledge into Value. The model is based on the Plan-Do-Check-Act Cycle

## ISO 9000:2000 SYSTEM PLAN-DO-CHECK-ACT

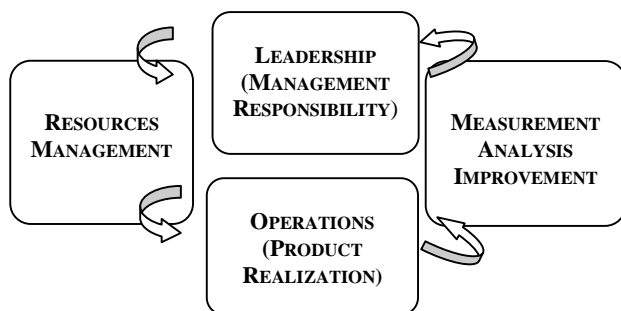


Fig. 1

The model operates anti clockwise and starts at the top with the Leadership.

The job of Leadership ( ISO9000 calls it Management Responsibility) is to set Objectives allocate responsibilities, provide resources and then monitor achievement so that resources can, if necessary, be reallocated.

The finite Resources of the organization, its skills equipment and services, need to be managed and maintained so they are reliable. They need to be allocated so they are used most effectively

Operations (ISO9000 calls this Product Realization) from receipt of the customer request through design, procurement, manufacturing, service and delivery must be planned and controlled

Measurement Analysis and Improvement then takes us to the points where 'risk' exists. These must be monitored, from customer, through operations, back to the supplier. At points of high risk data is collected and analyzed to drive improvement.

I will now show you the first of the essential directions you must be taking with your Quality Management System. *You must integrate your Quality and Financial Management Systems.*

## INTEGRATING 'QUALITY' AND 'FINANCE'

Let me share with you a quote from Joseph Juran one of the 'gurus' of Quality Management. "You Plan and Manage 'Quality' in the same way as you Plan and Manage 'Finances'".

Both your Financial and Quality Management Systems measure Performance of the Organization.

For example, knowing 'Costs', shows whether you create 'Value'. On the other hand Process Measures show you where you have Wasted 'Cost'. In the next five years you should be moving to an Integrated Management System. As a CEO, when I see a financial variance, my first question is "how did this happen"? I need to see the process data that supports the financial data.

Let me develop an importance sequence of thinking that applies equally in Quality and Finance.

By monitoring processes we collect 'Data'. Data is just numbers. We look for is patterns in the data and when we find those patterns they give us 'Information'. However, we are also looking for information that we can use.

'Knowledge' is information that we can act on. If that action creates improvement now we've created 'Value'. Ultimately, out of any measurement, we're looking for value for the business and value for the customer.

Competent Organizations are always creating Value.

*My second key point is that your Management System must create Organizational Competence.*

## ORGANIZATIONAL COMPETENCE

I want to focus on the principle of 'A System Approach to Management'. The reason for needing a 'System' is to create 'Organizational Competence'. Organizational competence is achieved through the flow of knowledge.

Individual and Organizational Competence are similar.

An individual gains information, initially from external sources, through teaching and reading. They then process this information to create knowledge. We call this process 'Learning'. Many individuals do not progress beyond learning. They become 'sources of knowledge'. We often refer to them as 'academics'.

Successful individuals become 'competent' in their field. They apply their knowledge in a way that creates value for themselves and others. Their knowledge flows out through their eyes, their mouth

and their limbs in a way that 'makes a difference'. They apply their knowledge. They are 'Competent'.

You can read as many books on golf as you wish, but until you have been on a golf course you can't play golf. Talk to any golfer and they will also tell you that you cannot be competent until you have played in a competition.

The same is true of Organizations. Peter Senge's book 'The Fifth Discipline' quotes the famous statement "The only competitive edge an organization has is the ability to learn faster than the competition". To achieve the necessary flow of information and knowledge to become a learning organization, the organization's processes need to come together as a system.

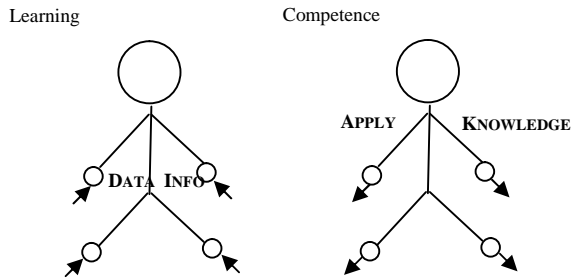


Fig. 2

Organizational Competence is then achieved through the Application of Organizational Knowledge to achieve Organizational Performance. To quote a good friend of mine, Herve Mignot from Paris, "The organization's head is connected to its feet". For information to flow quickly we need the right organizational structure.

**SYSTEM THINKING**

The Traditional Organization structure inhibits information flow

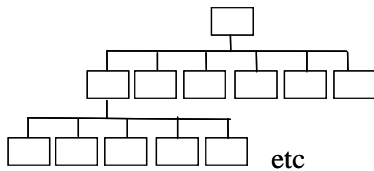


Fig. 3

To achieve rapid flow of information and knowledge and become a competent organization, the organization's processes and its people need to come together as a system.

My mother was recently diagnosed with a serious illness. The hospital where she was treated in the UK, ironically called "Good Hope" hospital, prolonged her illness because of 'organizational incompetence'. The individual physicians were technically competent but the hospital did not operate as a system. The flow of information between people was so poor as to make the hospital 'organizationally incompetent'.

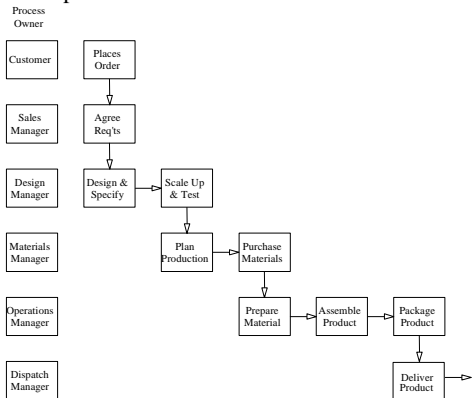


Fig. 4

This leads to the question, how do we develop this information flow in order that we can then create 'Organizational Knowledge' and apply it and so become a 'Competent' organization.

Organizations have attempted to address this problem by viewing their activities from a 'Process Approach' and by 'Process Mapping'. Key words from ISO 9000 are 'determine the sequence and interaction of processes' and 'ensure the availability of information to operate these processes'.

This is a technique adopted from the chemical industry. When I was a graduate chemical engineer I spent days, weeks and months creating process flowcharts. This technique treats your organization as if it were a chemical plant and only addresses the process aspects of your organization. You must at least process map using the 'swimlane' technique (see above) to identify 'people's' responsibilities. Then you have your 'Process Network' and the beginning of your 'People Network'.

In the last ten years organizations have moved to system thinking as they have process mapped their product flow, whether their product is information or tangible product. However they have generally not mapped the flow of information between people. This is often referred to as the 'Network' of the organization and it relies far too much on 'Random' communication.

An organization is a complex system. Network Theory is the science which addresses the flow of information in complex systems. Understanding Information Flow in a Network enables Management of Organizational Knowledge.

A network is a more natural structure. An organization is more like an organism than a chemical plant.

The last five years have seen a tremendous growth in the understanding of Network Theory. The flow of information in the traditional hierarchical organization is too slow if an organization is to manage knowledge effectively. In a traditional organization people become 'distanced' as it grows.

You know every organization has its own people network and this is the way information flows between them. You need to understand the structure of your organization from a Network perspective. In a networked organization, as it grows, people stay 'closer'.

**NETWORK STRUCTURE**

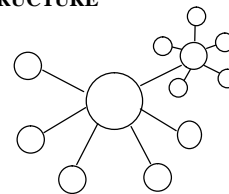


Fig 5

The key points in a network are its 'hubs' and 'nodes'. Examples of these in the people network of an organization are its managers, its meetings and social activities, whether formal or informal. In a successful organization formal and informal networks are the same. It is an 'organism' like a human body.

This thinking has been developed by Albert-Laszlo Barabasi in his excellent book 'Linked'<sup>4</sup> in which he develops Network Theory by comparing Social, Technical and Biological Networks.

He shows how we originally thought all networks were random, rather like a highway system. With the tiny number of links to each of its nodes the random network is robust. However, the word 'random' is really saying 'we don't understand'. New thinking has developed the concept of the 'Scale Free' network, rather like the air traffic network. Nodes (local airports) have a few links whereas Hubs are highly connected. Take out a 'Hub' (major airport) and the network can be seriously damaged. Think about your own organization and how this applies.

The reason organizations experience so much difficulty with 'communication' is because they do not understand their network structure! The structure is not the 'org. chart' and it is not just the

process network in the 'process map'. It is also the links between the people or what we refer to casually as our 'network'.

You must define the primary information flows between the people in your organization. You can then understand how people in your organization gain knowledge and you can then manage your knowledge. This enables you to use your Management System to drive innovation. *My next key point is "Innovate or go out of business"!*

## **INNOVATION**

In Networks, Information become Knowledge and Innovation comes from 'Organizational Knowledge'. Managing Better and Working Harder is not the answer it is 'Communities of Practice' that enable Knowledge Transfer and the Conventional Organization Inhibits Innovation.

Convention says listen to Customer and form an Integrated Organization. Convention also says Technology drives Change and Recognize Success. Finally it says target Larger Markets and seek Higher Margins. These principles all change for successful innovation.

"The Innovators Dilemma"; By Clayton Christensen shows that for Innovation you must anticipate the Market ahead of the customer and operate as a Separate Organization in which you recognize that the Market drives Change. You must plan for Failure and understand that your Market doesn't yet exist. Finally your new product will be Cheap, Small and Convenient. Innovation is driven by the desire for convenience and not by Technology!

We are surrounded by the results of Convenience driving Innovation. Photographic Film has all but given way to Digital Photography. Notebook Computers are used far less in travel as we see Handheld devices such as the BlackBerry. Greeting Card shops are under threat as free Internet Cards become available. Maybe in ten years Electricity Companies will be downsizing as Solar Cells and Fuel Cells replace them.

I recently had Arthroscopic Surgery on my knee. The consequence of playing Football for too many years. I was able go into hospital for day surgery and walk to my car afterwards. In the past Open Surgery would have required a week in hospital, a month on crutches and several months of low mobility. I like this kind of convenience.

So how do we create this kind of innovation? The innovative organization is different.

## **THE INNOVATIVE ORGANIZATION**

The innovative organization needs to be separate from the Main Organization. It will develop its ideas ahead of Customer and its Market is outside your Mainstream. You need to identify this special "Customer". It will operate with "Right Brain" Creativity but it does need a Structure to connect it to the Main Organization because of its need for Financial Resources. That structure can be provided by the Design and Development element of ISO9000; (para. 7.3).

The other resource the organization needs is People and the "Wisdom of Crowds". The book "The Wisdom of Crowds" by James Surowiecki shows how Breakthroughs are not from the "Genius" and how the Collective Knowledge is so much more Powerful. If you don't believe me go to a racecourse. The Bookmakers on a Racecourse do not set the odds based on their own knowledge and experience even though it is probably far more extensive than the racegoers. They rely on the "Wisdom of Crowds". We need to create 'Communities of Practice' in our organization to create Innovation. The people in these 'Communities of Practice' will be Volunteers with Passion and Trust and it will be more of a Social Activity. The activity will need a Coordinator who has a passion for 'People'. I mentioned already that this organization does need a Structure to connect it to the Main Organization and the Design and Development element of ISO9000 provides this.

## **ISO9000; DESIGN AND DEVELOPMENT**

Both Development and Innovation need Plans with Design Stages and Responsibilities specified. Communications between the people have to be maintained and the Inputs and Outputs to the process need to ensure Requirements are being agreed and met. There need to be regular progress reviews with Verification and Validation to ensure Problems are being solved. Change is a permanent reality in this environment and so Records of the Reviews, Verification, Validation and Changes become essential. These "Records" are the Information and Knowledge that I mentioned earlier. *This takes me to the last of my key points which is that you must Manage your Knowledge to succeed.*

## **KNOWLEDGE MANAGEMENT**

KM asks three questions;  
What do we know?  
What knowledge do we need?  
How can we get that knowledge?

As organizations have developed their Management Systems over the last decade they are now focusing on the core issue of 'information flow'. Knowledge is now being recognized as the fourth business resource alongside time, money and people. We are seeing increasing need for what is being called "Knowledge Management" (KM). It is a natural outcome of the work of the last 25 years which has focused on Quality Management and Process Management and which developed the ideas of Learning and Continual Improvement and asked the question 'how do we do it right the second time?' . During that time the explosion of the 'Information Society' has, led to an 'unmanageable' amount of knowledge being available to organizations.

In North America a common misconception is to think 'KM' is all about Information Technology. This arises as people resort to tools like 'Google' and the 'Search' button on their P.C. to navigate their unmanageable information and knowledge.

To say this is an IT issue is to say the minds of our people contain no knowledge. My daughter is an HR Manager in the U.K. and she will tell you immediately Europeans see KM as very much a 'people' issue.

As I emphasized in my book "Do It Right the Second Time" this is a 'Question of Balance'. Balance of People and Process is the key to success. A key part of your "KM" strategy is setting the balance between IT and HR. I will explain later how the degree of this balance depends on the type of business you run. To Innovate we must grow knowledge, develop new ideas from our knowledge and so Create Competitive Advantage.

## **HOW WE GROW KNOWLEDGE**

Once you understand your information flow you can start to develop your organizational knowledge. However, KM is more than just the flow and storage and retrieval of information. It is also about learning and growing the knowledge of the organization and applying that knowledge to create value.

There are two types of knowledge in an organization. The knowledge we have inside the individual, referred to as Tacit Knowledge. The other is the knowledge which has been documented and is called Explicit Knowledge.

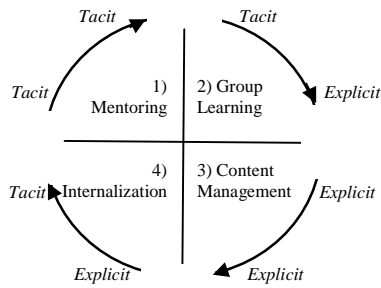


Fig 6

There are four stages in developing knowledge

1) For centuries the method has been the 'sorcerer and the apprentice'. The secret of success in your life was to find a good 'mentor'. This process involved the transfer of tacit knowledge between two people. From when you were taught how to ride a bike to having lessons from a golf pro, you learn the hidden mysteries, you are 'personally coached'. This is where the 'Executive Coach' has become so important in today's business

2) As organizations have grown the ratio of available mentors has reduced and so group learning has become important. The earliest and best recorded example<sup>5</sup> was of Aristotle teaching Alexander the Great and his contemporaries. This is how Alexander was able to develop his elite officer corps. A key feature for this process to succeed is "dialogue". Knowledge is also documented during this process and moved from remaining tacit (stage 1) to being explicit. This is also where we introduce one of the best known KM tools known as 'Communities of Practice'

3) As the bodies of knowledge in the world have grown exponentially in the last decade it has become necessary to store explicit knowledge in a way that it can be easily accessed. The old profession of 'librarian' has taken on a whole new meaning. This 'Content Management' is a subset of knowledge management. This is where organizations have wasted mountains of money and built mountains of frustration through badly implemented IT systems.

4) This explicit knowledge must be stored in a way that will enable it to create value. The core problem is not the IT system but the method by which tacit knowledge is recorded and the method by which explicit knowledge is stored. In the past both have been very badly executed. The objective in this last stage is for people to be able to retrieve explicit knowledge and themselves to make it tacit. This rarely happens successfully. Taking my earlier example it's like expecting to become a good golfer by just reading books on golf.

The architecture for storage is also critical in step 4. It depends on your strategy for KM which in turn depends on the type of business you run. There are two primary strategies...

**KM STRATEGY: BALANCE IT AND HR**

. Groupware and Google do not 'manage' knowledge. 'Groupware' enables access to what may be multiple versions of often uncontrolled documents. 'Google' and 'Search' simply enable you to bypass the chaos in the storage of your organizational documents. Avoid the belief that 'Build a Portal and Knowledge will come!'

The balance between IT and HR must depend on whether

- you create products or solutions through the re-use of an existing knowledge base (in which case you need a bias to 'coding' and storing explicit knowledge) or
- you provide custom products or unique solutions through innovation of your knowledge (which requires a bias to links between your people to share 'tacit knowledge'). So again, Communities of Practice that key tool of Knowledge Management are vital for Innovation.

Once you have established your 'balance' be conscious of the rules of 'Change Management' and find an early success. Also be conscious that you will need to be developing the sharing culture of

KM. Avoid being over ambitious by 'measuring your intellectual capital' or 'radical restructuring of your IT system'.

So to implement KM you clearly need to develop both linkage of processes and linkage of people. These are primary attributes of a Management System

The belief that technology will solve all information issues whether it is storage, retrieval or transmission ignores the important transfer of information and decision making that occurs during meetings, whether group meetings or one on one. To emphasize how the flow of knowledge and information between people takes place during meetings and in 'Communities of Practice' consider this important comparison of documents and meetings. 'Bandwidth' denotes the amount of information transferred in a given time.

	Interactivity	'Bandwidth'	Reusability
Document	Nil	Low	High
Meetings	Very High	Very High	Low

Fig 7

**CONCLUSION**

Innovation Creates 'Competitive Advantage' and comes from Managing Knowledge. To achieve this you need to use 'Communities of Practice' in which a key feature is 'Dialogue' as with Aristotle and Alexander. This creates 'Tacit' knowledge in your people which in turn creates Innovation for the organization. This will change your Products and Processes but it will also change your Organization.

As Chief Executive of one of the leading Design Brands in the U.K. **Peter Merrill** has led Innovation in one of the most demanding of markets. He is an Engineer, an Artist and a Writer. He has led Innovation in the fields of both Graphic Art and Engineering.

He is leading the International Study Group addressing 'People Involvement' in Management Systems and believes the best Innovation comes from the 'Collective Knowledge' of an Organization. He is one of North America's foremost authorities on implementation of Management Systems. He has implemented management systems in innovative companies such as IBM, A.I.G., R.I.M. and Solectron.

He is author of the book "Do It Right the Second Time" a title which comes from knowing that success comes as a result of us learning from experience.

Peter Merrill is a firm believer that Innovation requires an Innovative Culture which means that you must innovate both your practices as well as your products.

**Peter Merrill's latest book  
"Innovation Generation"  
is published by Quality Press**

go to [www.petermerrill.com](http://www.petermerrill.com) for details

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If you would like this presentation to be made at your own conference or organization. If you would like to know more about Innovation contact Peter

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