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FEATURED ARTICLE

Building a Strong Quality Culture



By Norm Howe

We at ASQ tend to be scientists and engineers. Words such as *culture* leave us confused because it's not something we can measure. And we know that if you can't measure it, you can't manage it. I'd like to show you how we found a way to dramatically strengthen the quality culture in our organization, despite the fact that it was led by a scientist (me) with a marginal (at best) understanding of human motivations and behavior. I wish I could tell you that our discovery process itself was rational. But alas, it was chaotic, slinging ideas at the wall and keeping the ones that stuck.

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Change is Hard

When I first came out of R&D and started managing people in manufacturing, I knew we needed to change. Too many employees were making too many errors—not big errors but thousands of little ones. It was “death by a thousand cuts.”

Let me be clear:

- We had a good set of quality procedures in place.
- Everyone had been trained on the procedures.
- We were using statistical process control and lean techniques.

But we were swimming in small deviations and nonconformances. Our problem was in connecting our training to daily worker actions at a level of reliability that would make the workers successful. That’s not so easy when even one error in a million actions can ruin a batch of drugs. We had to bridge that gap between what management *thought* was happening and the reality on the ground (Hacker 2014).

We were trying to automate those errors away. We dug into root causes and rewrote standard operating procedures (SOPs). But you can’t automate everything; you can’t write an SOP for everything.

The Decision to Act

I gathered the staff and asked them, “How much are all these errors costing us?” Nobody knew. I said that we were going to find out. *Now.*

Our cost analysis was quick and dirty, and it told a gruesome story: the visible costs were just the tip of the iceberg. The real costs didn’t show up as identifiable lines on a cost report.

Cranking the numbers had convinced the management staff that our primary problem was our culture. The enemy was us. Furthermore, *if we did nothing, nothing would change.*

Finding a Solution

How did we fix it? It was clear that it would simply not work for me to harp on the supervisors to supervise more closely. They were already up to their necks in investigations and corrective actions.

I tried giving pep talks to the troops, but I’m no Winston Churchill. The operators and maintenance techs were all mystified as to why the plant manager would stand in front of everyone and make such a fool out of himself.

I realized we needed to find a solution to our culture problem that would make use of my skill set, which lies more in the realm of analytical administration than in charismatic leadership. The first task was to figure out what culture was and define it in a useful way.

In *Juran’s Quality Handbook*, Frank Gryna defined quality culture as “A culture throughout the organization that continually views quality as a primary goal. It is the pattern—the emotional scenery—of human habits, beliefs, commitments, awareness, and behavior concerning quality” (Juran 1999, 22.65).

The problem with this definition is that “beliefs,” “commitments,” and “awareness” are somewhat blurry concepts. We needed to find a definition of quality culture that would connect with *actions* that could be taken by our workers. We concluded that “habits” and “behaviors” would do. At least they were measurable.

The types of behaviors that we were focusing on were not complex activities. Rather, they were the millions of tasks that happen every day, like good documentation practices, correct protective garb, or proper cleaning of floors—simple tasks that, if not done correctly 100% of the time, can kill quality and costs.

Habit Forming

We found that our technicians, the people with their hands on the work, were always very busy. They were multitasking, and they were getting pulled in different directions. “Hurry up and get

that done! But pay attention to details.” It turns out that human attention is a limited resource.

Wendy Wood explained at the American Psychological Association’s 122nd Annual Convention, “The thoughtful intentional mind is easily derailed, and people tend to fall back on habitual behaviors. Forty percent of the time we’re not thinking about what we’re doing. Habits allow us to focus on other things...Willpower is a limited resource, and when it runs out, you fall back on habits” (Neal 2011).

We found that embedding quality habits into our employees helps them do things right the first time by offloading repeated activities from their conscious to their unconscious minds, such as always putting tools back on the rack, filling in *all* the blanks, and keeping hair inside the net. The list goes on forever. When we implant desirable habits into the members of an organization, we drive out undesirable behaviors.

The advantage of good habits is that it costs very little to maintain them. Routine, yet quality-critical, everyday tasks can be performed with little input from the prefrontal cortex. That leaves plenty of workable memory for more complex tasks.

Our problem was that our employees already had habits—*bad* habits. We had to figure out a way to change them. We knew doing so would be hard and that we desperately needed help.

The Cavalry

Frederick Herzberg’s research is foundational in the field of employee motivation (Herzberg 2003). His research demonstrates that a true motivator is a factor that comes from an *internal motor* within the employee.

According to Herzberg, factors that motivate employees—in order of effectiveness—are:

1. Achievement
2. Recognition
3. Work itself
4. Responsibility

5. Advancement

6. Growth

Note what is NOT on the list: *money*. It’s not that Herzberg discounted money as a strong influence on employee behavior. Rather, money can be a powerful *demotivator* if the employees believe they are not getting fair compensation. More money beyond what the employee feels is fair, however, is not a motivator in Herzberg’s definition because you must keep shoveling in more money to keep the employee producing. We didn’t have that kind of money.

We used Herzberg’s two most important factors, *achievement* and *recognition*, to motivate the employees to change their habits. Both factors are far cheaper than giving away the company’s money and, amazingly, more effective.

Work Teams

We grouped the employees into their regular work teams (production shifts, shipping/receiving, laboratory, engineering). Each team was asked to think of something they did that affected quality compliance. They were then asked to develop goals that, if achieved, would result in improved quality compliance. The fact that the goals were team-based encouraged the employees to help each other achieve them.

The teams had to develop a means of measuring their progress toward meeting their goals. Each team appointed a coordinator who tabulated the results. The data were posted in visible locations, thus providing proof of their *achievements*, one of Herzberg’s true employee motivators.

The teams had to set goals over which they had control. They could not change controlled processes without following our change control procedure.

Some of the managers struggled when it was time to free the teams to work toward achieving the goals in their own way. After repeated achievements, though, the managers learned how to provide enough room for the teams to find their own ways to success. They discovered that the teams felt more ownership of

the results and were more likely to comply with the procedures that they themselves had shaped.

Managers invested their time supporting the process, which consisted of removing barriers and guiding teams through change control. Many of their duties were effortless, such as asking random employees how the process was going—and listening to them.

The most important job of management, however, was to show up in person to *recognize* the achievements of the teams. Recognition could be something fun, such as serving ice cream to the packaging crew when they had achieved their goal of peer-to-peer garb inspections upon entering the clean room.

Results

Did it work? Yes. For example:

- The rate of perfect batch records was improved from 70% to more than 99% in the second year. A perfect batch record means zero errors on a 100-page document.
- In the third year, first-pass quality yield improved from 91%, up to 96%.

Figure 1 shows the cumulative cost/savings for the project. The costs are primarily employee hours, but it's important to note that this was not a get-rich-quick scheme. It was an investment in the people and the organization that takes time. It is not expensive—about an hour per week per employee, including managers.

All these measurables proved to us that the project was worthwhile. However, quite possibly the most satisfying result was the energy of the employee teams. Every manager talks teamwork. But actually building a process that continually feeds back to the members that their contributions to team goals are critical—and will be recognized—walks that talk and “walks the walk.”

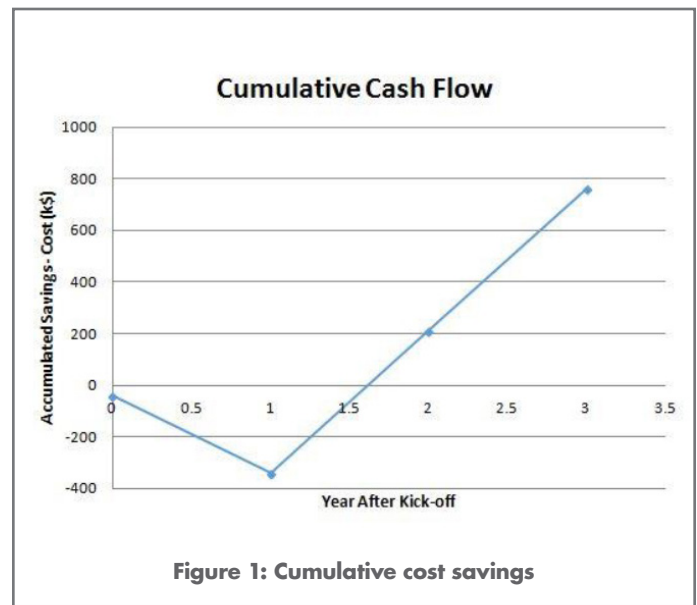


Figure 1: Cumulative cost savings

Biography

Norm Howe is senior partner of the Validation & Compliance Institute. Before starting VCI, he was the manager of a pharmaceutical plant with BASF. Prior to that he worked in R&D. Howe received his PhD in chemistry from UCLA and has served as adjunct faculty in quality systems at the University of Michigan. For recreation he plays golf, which he finds to be very efficient on a cost per stroke basis. He can be reached at howen@vcillc.com.

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Chair's Message | Peggy Milz

Fall has traditionally been associated with a time of change—the weather changes, leaves change color, summer days give way to school days, pumpkin-flavored beverages and baked goods return to your local coffee shop, football season kicks off, you get to wear your favorite sweatshirt again, and much more. For many years, my family and I spent a long Labor Day weekend at Walt Disney World. Orlando at the beginning of September is still quite hot—so it does not feel like fall. However, September is when Disney transitions to their fall décor. One day we would walk through a park, and it would look like it usually looks throughout most of the year. Then the next morning when we arrived, we could not help but notice that the park had been transformed overnight. As we walked through the park, the kids pointed out their favorite fall decorations and were excited to see them. As they marveled about the Disney magic, my engineering brain was busy imagining and speculating about Disney's processes required for such a transformation. I just could not help myself. I wanted to know how they could manage all that change so quickly and efficiently. Eventually my husband and I went on a Keys to the Kingdom tour, which provided me some insight into their processes, which are of course quite impressive.

Out of all the things I heard and learned from my professors at Purdue University, one of the most memorable was from my first human factors class. The distinguished head of the department, who taught the class, came in on the first day of the semester and lectured on how “people resist change.” As a young engineering student, that sounded logical to me. However, at the time I had no idea what the true impact of that statement was. I suspect the reason his words stuck with me over the years is that throughout my career (and my personal life) I have routinely been reminded just how much people do resist change.

It is not hard to figure out why people resist change. We all get comfortable with things the way they are (the status quo) and do not want to upset the apple cart. Additionally, many people fear the unknown. One thing we realize or must accept is that change is inevitable. Whether the change is big or small, planned or unplanned, well managed or poorly managed (or not managed at all), it is going to happen. The best way for change to be successful is for us to embrace it instead of resisting it and view it as a challenge to accept rather than as something to fear and run away from.

There have been many changes in ASQ throughout the recent transformation. I am proud of the Quality Management Division member leaders and members who have embraced the changes and stepped up to the challenges presented during this journey. Of course, in addition to the changes associated with the transformation, we have also been embracing changes because of the COVID-19 pandemic. The QMD recently hosted our first virtual conference with the Software Quality Division. Without the dedicated member leaders who took on the challenge, the conference never would have been possible.

That conference is just one example of how we have embraced change. There are many more, including transition from a printed quarterly *QMD Forum* to an electronic publication in order to realize a significant cost

savings. We added numerous webinars over the past 18 months as in-person events were postponed. In August, the QMD Council held its 2022 strategic planning meeting. It was the first time we had been able to meet in person in two years. It was so wonderful to have the team physically together planning for the future. Denis Devos, chair elect, did a great job leading the team through two days of strategic planning. In the end, we had a 2022 business plan and budget that are focused on bringing value to QMD members. We are all very excited about our outlook for 2022. As always, the plan includes some changes that we will all be able to embrace.

Best Regards,
Peggy Milz,
Chair, ASQ Quality Management Division

Editor's Notes | Sandy L. Furterer

Welcome to the Fall 2021 issue of QMF. I hope you are having a lovely fall, which is my favorite time of the year. We have three great articles in this issue of the *Forum*. The first article is "Building a Strong Quality Culture," by Norm Howe. This article describes how his organization dramatically strengthened its quality culture, through defining culture, leveraging work teams, and incorporating Herzberg's factors that motivate employees. Our second article, "A Journey Toward Excellence: Russian System for Quality," by Jorge Roman and Maxim Protasov, discusses the Russian System for Quality (RusQuality) and explores examples of organizations that have won the Russian Quality Award. Our third article is "How to Successfully Develop and Manage a Sustainable Country or Region" by Yves Van Nuland and Grace L. Duffy. The article briefly describes the main characteristics and tools of the Society & Active Citizenship (SAC) Model, and it explains the value of such a model and the advantages for the multiple country stakeholders.

We also have the fall Chair's Message from Peggy Milz. Peggy discusses how critical change constantly exists in both our work and our personal lives, as well as how the Quality Management Division has recently embraced change.

We have a book review by Dan Zrymiak of *Demand Driven Performance: Using Smart Metrics* by Debra Smith and Chad Smith. The book describes smart metrics that support recovery and preventive actions. Smart metrics help to shrink lead times and firm up due dates. We also have a list of the *Quality Management Journal's* articles for its next issue.

As a special feature for Quality Month, we have a word search of quality terms that can test your quality knowledge and add a little fun to your day.

As always, please feel free to provide feedback on this issue of the *Forum*, especially regarding our new Quick Learning feature, as well as any ideas for enhancing QMD publications for our division. I can be reached at sfurterer1@udayton.edu.



Sandy L. Furterer, PhD, MBA, is an associate professor and department chair in the Engineering Management, Systems and Technology Department at the University of Dayton. She holds ASQ certifications, which include the ASQ Certified Quality Manager/Organizational Excellence, Certified Quality Engineer, and the Certified Six Sigma Black Belt, and is an ASQ Fellow. She is a Certified Master Black Belt by the Harrington Institute, Inc. Furterer resides in her home state of Ohio, near Dayton, with her husband Dan, three children, and their pets: Gypsy, a calico cat; Demi, their Beagle-Jack Russell Terrier rescue dog; the slightly crazy Lily, their hound-lab rescue dog; and an orange tabby cat, Louis, recently rescued. Her grand kittens, Sasha and Katia, have also been visiting quite a bit this summer. She looks forward to soon meeting her newest grand kitten, Thalia, when her son visits around the holidays. Contact her at sfurterer1@udayton.edu.

A Journey Toward Excellence: Russian System for Quality

By Jorge Roman and Maxim Protasov

Introduction

Quality awards and business excellence frameworks are based on the philosophy of total quality management (TQM) and, in particular, the principles of continuous improvement. The European Foundation for Quality Management Excellence model (EFQM model) and Malcolm Baldrige National Quality Award model (MBNQA model) are widely known and are used as channels of TQM.

The last two decades have witnessed the increasing application of business excellence frameworks as more companies have learned how to use them to obtain superior performances (Dahlgaard et al. 2013). This increased adoption of the business excellence frameworks has improved the performance of many organizations around the world in both public and private sectors.

It has been very challenging to trace the roots of the quality journey in Russia, but prior to the creation of the Russian Business Excellence Model (RBEM) in 1996, quality in that country was assured mainly through quality



Dr. Jorge Román received his PhD from Lleida University in Spain. His areas of expertise focus on the application of quality improvement to business in service and products (TQM, lean management, benchmarking, business excellence framework). Román is currently working as an excellence and pioneering consultant at Dubai Police in UAE. He was an ASQ Country Counselor 2015–2018 and a member of the International Academy for Quality and the Organizational Excellence Technical Committee of the QMD. He can be reached at igarate@dubaipolice.gov.ae



Maxim Protasov is the CEO of the autonomous non-profit organization Russian Quality System (RusQuality), the National Institution of Quality, established by the Government of the Russian Federation. He has a PhD in economics from the Institute of Latin American Studies of the Russian Academy of Sciences and is a graduate of Lomonosov Moscow State University. Protasov is also a member of the state commission for anti-trafficking in industrial products and the workgroup for 'Regulatory Guillotine' (large-scale reversion and reveal of normative legal acts that negatively affect the general business climate and regulatory environment). Since 2021, he has been a member of the Interdepartmental Council of the National Quality Infrastructure, established by the Government of the Russian Federation.

Global presence: Protasov represents Russia in the European Organization for Quality Board (VP) and Asia-Pacific Organization for Quality Executive Board.

He was awarded a certificate of honor by the Federal Agency on Technical Regulating and Metrology and received a commendation of the Ministry of Agriculture of the Russian Federation.

standards such as those developed by Kulikovskiy in 1914-1915, the Committee for Standardization in the 1930s, and, finally, the Government Quality Standard (GOST) in the 1940s (Rebrin 2004). For the last 25 years, the Russian Government Quality Award has been awarded each year to Russian companies for achieving significant results in the quality of products and services, as well as for the introduction of highly effective management methods and technologies that improve business processes. RusQuality, as a national quality institution, operates the award competition.

Nowadays, Russia operates the System of National Standardization, which comprises a series of interrelated rules and regulations that companies can follow to compete and improve the quality of innovations in the areas of the Russian economy regulated by the government. These rules and regulations are continuously refined and supplemented in connection with the purposes and principles of standardization established by government law on technical regulations (Rebrin 2004; GOST 2014).

An Overview of the Russian System for Quality (RusQuality)

In Russia, RusQuality, the organization, established by the government of the Russian Federation in 2015, handles all the above quality matters, which is quite unique. It is an institution with high technology, professional expertise, and international research projects. RusQuality is quite experienced in the field of quality for business processes, products, and service areas. Its main objective is to motivate Russian enterprises by implementing high production standards and advanced management technologies as well as to develop a class of professionally advanced consumers. This is how a complete quality system works. Everything is based on the main mission—improving the quality of life in Russia.

Achievement of this strategic goal will be done through the tools of “soft power” and intellectual and ideological leadership. From the point of view of RusQuality, a higher quality of life means the opportunity to make conscious choices of material goods, to have access to services, knowledge, cultural values, and social

opportunities, as well as to maintain health and active lifestyles for the stakeholders.

The main strategic tasks of RusQuality for the next five years are:

1. Create and popularize the ideology of quality: socially significant ideas about the quality of life, recommendations for its improvement, information materials that help citizens determine the quality of goods and services, and assistance for organizations in production and distribution of quality goods and services.
2. Build strong brands and achieve high levels of brand awareness and public trust in RusQuality.
3. Implement the idea of quality and quality management into all state development programs and initiatives.
4. Make regular participation in Russian Federation Government Quality Award (RFQOA) the wordless imperative for all organizations and businesses in Russia.
5. Increase the impact of the National Quality Sign on the consumer market: grow its S level of recognition and confidence in it.
6. Establish new traditions and patterns of behavior; spread among the consumers the idea of a newly recognized national holiday: Quality Day

RusQuality's Main Contribution to Development of Russian Economy

The activities of RusQuality contribute to the development of the country's economy. Enterprises across Russia strive to become laureates of the State Quality Award (SQA) by optimizing manufacturing processes. At the present time, more than 300 organizations from 80 regions of the country have won the award. In 2021, more than 500 enterprises applied for the SQA. Another field of RusQuality expertise is comparative product testing of different consumer goods. Such quality testing allows RusQuality to identify systemic problems in various industries.

Manufacturers strive to obtain the high product rating provided by RusQuality and the right to put the Quality Sign on the labels of their products, to enhance production control, and to raise



Figure 1: RusQuality Team, 2021 — Source: Roman and Protasov

requirements for the quality of raw materials. RusQuality seeks to cover the entire Russian market, including testing not only major brands but also regional and local brands. Thus, small businesses that produce high-quality products can enter federal and international markets. To date, more than 250 products have been awarded the Russian Quality Sign. **Figure 1** shows the RusQuality team.

The key tasks of RusQuality are summarized as:

- Improve the efficiency of Russian companies' management systems based on diagnostics and improvement of business processes.
- Conduct mass tests of consumer goods in order to provide the consumers with full and clear

information on the fast-moving consumer goods (FMCG) market.

- Educate consumers on quality issues in order to form professional consumers' communities (prosumers).
- Support manufacturers of quality products and promote their quality products and services in both domestic and international markets

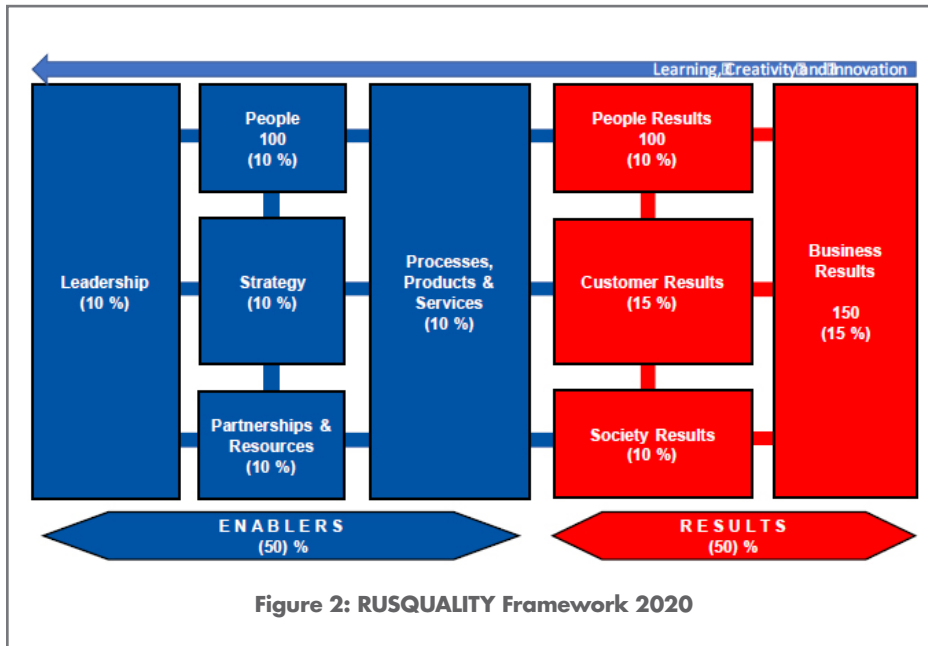
The Russian Quality Award

The dissolution of the Soviet Union in 1991 resulted in a transition of the newly formed Russian Federation into a market economy as well as its inclusion into the global economic system. This forced the Russian government to help national

organizations improve the quality of their products and services. The creation of the RFGQA in 1996 was aimed at providing Russian businesses with tools to improve their products, services, and business practices and thereby increase the competitiveness of their products (Russian Research Institute for Certification 2015).

The transition to a market economy and entrance into the global economic system naturally put forward the problem of product and service quality in a number of major national tasks to be fulfilled. In 1992, on the initiative of the Gosstandart of Russia, the process of organizing competitions for national quality awards was started. Specialists in industrial enterprises, high schools, institutes of the Gosstandart, and the scientific community became involved in this work. After analyzing the experiences of competitors for the Deming Prize Quality Award (Japan), Malcolm Baldrige National Quality Award (United States), and the European Quality Award, the excellence model of the EFQM was chosen as the model for the Russian Government Quality Award.

By introducing the quality award for applying quality management methods, the government has brought in a substantial contribution to help the state understand the importance of maintaining the competitiveness of Russian enterprises and support the systems approach to quality. The Russian Quality Award (RQA) has helped organizations to improve their understanding of the business excellence framework, create greater awareness of quality management, and achieve the results as in line with major global excellence frameworks, such as EFQM. Past winners demonstrated increased



customer satisfaction along with business growth due to customer retention.

RusQuality's Framework (see Figure 2) and a Brief Description of the Award Criteria

- Leadership:** Outstanding organizations have leaders who shape the future and make it happen, acting as role models for the establishment's values and ethics and inspiring trust at all times.
- Strategy:** Outstanding organizations implement their mission and vision by developing a stakeholder-focused strategy. Policies, plans, objectives, and processes are developed and deployed to carry out the strategy.
- People:** Outstanding organizations value their people and create a culture that allows the mutually beneficial achievement of organizational and personal goals. They develop the capabilities of their people and promote fairness and equality.
- Partnerships and resources:** Outstanding organizations plan and manage external partnerships, suppliers, and internal resources in order to support their strategy, policies, and processes. They ensure that they effectively manage their environmental and societal impact.
- Processes, products, and services:** Outstanding organizations design, manage, and improve processes, products, and services to generate

increasing value for customers and other stakeholders.

- Customer results:** Outstanding organizations achieve and sustain excellent results that meet or exceed the needs and expectations of their customers.
- People results:** Outstanding organizations achieve and sustain excellent results that meet or exceed the needs and expectations of their people.
- Society results:** Outstanding organizations achieve and sustain excellent results that meet or exceed the needs and expectations of relevant stakeholders within society.
- Business results:** Outstanding organizations achieve and sustain excellent results that meet or exceed the needs and expectations of their business's main stakeholders.

More than 3,000 companies from 80 regions of the Russian Federation have participated in the RQA competition since the 1990s. More than 200 Russian companies became laureates and diploma winners of the award. The economic effect of the award experts' recommendations implementation amounted to more than 1.3 billion euros in 2019. Twelve companies can win the award annually, and 10–15 can be runners-up.

The uniqueness of the RQA model is that participation in the competition gives organizations the opportunity to receive feedback from experts, and the best part is that it's free. The feedback can include:

- Having business processes assessed by leading industry experts
- Evaluating the satisfaction level of consumers, staff, suppliers, and society
- Receiving specific and comprehensive recommendations for business improvement
- Enjoying national recognition from peers and colleagues in the quality field

The RQA model is fully harmonized with the EFQM model. RusQuality closely monitors changes in similar prizes around the world and implements the best practices. The RQA is not the only instrument for improving quality management in Russia. All the best business excellence models (EFQM, Baldrige, Singapore, Dubai, and Russia Business Excellence Models) embrace similar principles, a holistic and systemic approach, process, and result.

One of the main objectives of the RQA lies in introducing self-assessment into the practice of Russian enterprises. Many organizations, having carried out self-assessment for the first time when participating in the competition, continue applying it on a regular basis. The application of this tool is included in a standard model of quality systems for high schools. The conduct of self-assessment covers the level of divisions, thus providing the awareness of all personnel on modern approaches to organizational performance improvement. The outcomes of self-assessment are used in business-planning systems to determine relative improvement actions.

Main Benefits of Using this Framework

Business excellence models are frameworks that, when applied within an organization, can help to focus thought and action in more systematic and structured ways that should lead to increased performance. Facing an increasingly turbulent and chaotic environment, more and more companies have implemented business excellence strategies and made quality a key element of their business philosophy since quality leads to improved business performance (Dale, Bamford, and Van der Wiele 2016).

As mentioned earlier, perhaps the greatest benefit of the RQA competition is the opportunity for the participants to get a free assessment of their business processes by the pools of experts and receive detailed guidelines for improvement. The

award procedure is based on the world's best practices. The organizations are assessed by more than 150 qualified experts, including over 30 EFQM assessors. Experts who evaluate the award applications note that the organizations extensively use a range of quality management approaches: lean production; failure mode and effects analysis (FMEA); quality function deployment; statistical process control; the 8D problem-solving process.

Research indicates that organizations with a business excellence approach obtain many significant benefits. Beyond improvement in financial indicators, other benefits include enhanced innovation and idea generation, higher customer satisfaction, sounder organizational growth (employees), greater employee satisfaction and involvement, better efficiency, and improved product reliability. Notwithstanding these benefits—of which there is considerable evidence and also debate—one more key benefit of award-based models is that they provide a balanced scorecard of criteria and measures against which organizations can objectively evaluate their management systems and performance and also compare that performance with world-standard benchmarking levels as well as with the performance of other organizations (Mann 2017).

Some Past Winners of the Russian Quality Award

We'll now finish with a brief discussion of some of the past winners of the RQA.

1. **KAMAZ** is a leading Russian truck manufacturer. Its vehicles are exported to more than 80 countries. KAMAZ launched an efficient system of motivation for proposed improvements (it resulted in 89 kaizen proposals; 1,108 kaizen projects). In order to promote the implementation of lean manufacturing and sharing experience at KAMAZ, a system of seminars for third-party organizations was developed. One of the key factors for KAMAZ's success is the regular training of workers (more than 1,000 annually) in quality improvement tools: Ishikawa diagram, Pareto diagram, business excellence framework, lean management, and statistical methods of quality control.
2. **Seversky Pipe Company** is one of the oldest Russian metallurgy plants in the Urals region. It has saved approximately a half-billion Russian Rubles with engineering quality management methods after the company's first participation in the RQA procedure.

Twenty-five managers were trained in Six Sigma and lean manufacturing methods. They implement projects themselves, demonstrating by personal example that the methodology works successfully in all business processes. One of the priorities of Seversky's top management is the continuous involvement of personnel in training events (workshops, conferences, internships). The company has a program of internships for young specialists, through which many employees have been trained annually on the process approach, lean production, building customer service, and the basics of quality culture.

3. **Hevel Energy Group** is a Russian pioneer of solar energy. It uses state-of-the-art technologies to achieve the highest quality in its solar power modules. Lean manufacturing projects were initiated by RusQuality with significant savings within seven months. The company continues to actively develop and apply up-to-date tools for improving business processes, focusing not only on the Russian market but also on the world market. This all became possible thanks to applying for a RQA.
4. **RQAs** are sought not only by enterprises and organizations but also by municipalities. A striking example is the Almet'yevsk Municipality, a winner in the 2018 RQA contest. The regional management model is based on the criteria of the business excellence framework, which allowed Almet'yevsk to become one of the most comfortable cities in Russia for its residents. More than 30 municipal employees annually undergo regular training on quality management tools, lean production, and a process approach. Training employees in the quality tools is a key factor for the municipality to keep adding value for its residents by offering first-rate customer services.

Conclusion and New Challenges

The business excellence frameworks are designed to recognize best practices in managing the organization and achieving results, all based on a set of quality concepts and values. Such practices have evolved over time and have become models used worldwide, illustrating how an organization should operate to achieve a high level of performance as well as excellent results.

Over its 25-year period, RFGQA has established itself as a tool for assessing the level of business excellence of organizations, for diagnosing business processes, and, in some cases, as a strategic model for business development. In Rusquality's Strategy-2025, the development of RFGQA is one of the key areas of work. This will make it possible to further improve the performance of organizations and, consequently, to raise the quality of life of the Russian Federation citizens.

The purpose of this article was to explore the journey of excellence of the Russian System for Quality. In this context, the research presented in this article should contribute to the quality management theory by expanding current knowledge on business excellence frameworks. Regarding these issues, the Russian System for Quality has shown its journey of excellence and has discussed how some past winners of the RQA used improvement initiatives on their journeys toward achieving organizational excellence.

Acknowledgments

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How to Successfully Develop and Manage a Sustainable Country or Region

By Yves Van Nuland and Grace L. Duffy

Abstract

The recent political events in the United States have prompted the authors to suggest an approach to more effectively address society's needs while using resources optimally. The United States has maintained a constitutional republic with a thriving economy for more than 200 years. A structured society composed of loosely coupled states provides citizens local voice in public affairs and encourages entrepreneurship for economic growth. A system of federal agencies and organizations exists to provide common services and overall defense. Although this article focuses on United States examples, the Society and Active Citizenship (SAC) model is applicable to all countries. The SAC model can be applied to organizational processes to maximize their effectiveness, regardless of the form of overall government. To our knowledge, a formal management model does not yet exist that can assess the extent to which a country is well managed and how management of the country leads to excellent and sustainable results for all its stakeholders. This article briefly describes the main characteristics and tools of the SAC model, and it also explains the value of such a model and the advantages for the multiple country stakeholders.

Introduction

The focus of the SAC model is management of the whole public sector. There are two categories addressed. One is the general government, agencies that report directly to politicians. Examples include governmental entities such as ministries, agencies, and departments, and regional and local organizations such as



Yves Van Nuland holds a PhD from the University of Leuven (Belgium). As a self-employed consultant-trainer with more than 40 years of experience in many areas of business and industry, he supports his clients on subjects such as excellence models (EFQM and MBA), business process management, KPIs, and company culture. Van Nuland is coauthor and editor of *Excellent: A Guide for the implementation of the EFQM Excellence Model and Validating a Best Practice*.



Grace L. Duffy has more than 45 years of experience in successful business and process management in corporate, government, education, and healthcare. Duffy uses her experience as president, CEO, and senior manager to help organizations improve. She has authored 15 texts and many articles and is coauthor of the book *Validating a Best Practice*. Duffy is a Lean Six Sigma Master Black Belt, ASQ Fellow, and Distinguished Service Medalist. She can be reached at grace68311@gmail.com.

Table 1: How well is our country managed?

	Questions	Known	Unknown
1	How many AOPS are there in your country?		
2	How much of government tax revenues, grants, and fees go to the AOPS (directly and indirectly)?		
3	Do you know the KPIs and results of each AOPS in the country?		
4	Do you have proof that every AOPS applies continuous improvement?		
5	Do you know how each AOPS aligns its KPIs to their strategic plan?		
6	Does each AOPS create partnerships with other AOPSs to achieve better and more synergistic results?		
7	To what extent are the AOPS results easily and broadly communicated to everyone in the society?		
8	Is there clear evidence that the achieved results are sustainable for all AOPS?		
9	Can you expect that these excellent results will continue to be excellent 50 years from now?		
10	Are the results equitable in providing welfare and well-being?		
11	Can your country be considered as a benchmark for other countries?		
	Total:		

counties, cities, fire departments, and police stations. The second category includes public service organizations, such as public schools and universities, not-for-profit organizations, public-private partnerships, and government contractors (such as defense and social service suppliers). The latter category consists of organizations that depend on taxpayer funding for at least 50% of their budget through direct payments or grants. When we speak of the public sector in this article, we are referring to both categories.

Public service organizations can be classified based on criteria such as task, ownership structure, legal status, degree of autonomy, financing and budget structure, distribution of financial surpluses, or “publicness.” When the organization is more than 50% dependent on tax or social services funding, we call it a public sector organization. Therefore, we refer to these entities as all organizations of the public sector (AOPS).

This article introduces a nonprescriptive yet efficient model in which the public and private sector play complementary roles in supporting the needs of society. This article introduces, based on

author research, the first comprehensive model for the management of a country.

Is Your Country or Region Well Managed?

It is important to establish a basis for how well integrated the public sector services are in the country or region studied. The authors believe that any country, whether a democracy or a dictatorship, should be sustainable.

If you have at least seven positive answers to the questions in **Table 1**, you probably live in a prosperous country with satisfied citizens. With three to seven items positive, there is much work to do to implement a successful approach for managing your country. If you have fewer than three positive answers, your country is far from being a model country with excellent and sustainable results.

How Many AOPS Are There in Your Country?

The United Kingdom supports more than 100,000 organizations in its public sector. A small country such as Belgium (11 million inhabitants) supports 26,500 organizations in the public sector. Because of the composition of the United States, it is difficult to ascertain a total number of organizations more than 50% dependent on tax or social services funding. A recent search identified an approximate number of 1.5 million non-profits, some subset of which may receive more than 50% of their funding from taxes and social services funding. These large numbers, plus those organizations directly controlled by federal, state, and local governments, prompt questions: To what extent do the activities of these many organizations overlap (federal, state/province, county, city/village)? Do they all add real value to society? Even when we have such an abundant number of organizations, are all key activities of a country fulfilled? Are the objectives, targets, and results achieved available to everyone? Do these organizations contribute effectively to the solution of actual societal problems?

Proof of Need

The AOPS spends money on thousands of initiatives yearly. We can ask dozens of questions about the effectiveness of their contributions. Here is a limited list of possible questions:

- How are strategic plans verified to deliver planned results? Are strategic plans in place?
- To what extent does society grasp the logic of planned spending? If we would list all U.S. government spending, line by line, we would have tens of thousands of issues. Are all these expenses necessary? How effective are they in providing community services and well-being?
- To what extent are we adequately and correctly informed about the fragmentation of expenditures? Is there overlap among these expenditures? For example, how many and which AOPS are working (directly and indirectly) on reducing poverty? Although several AOPSs are pursuing programs to reduce poverty, we still have the same (and even higher) percentage of the population that are considered poor.
- How useful are all the expenses? Expenses are rarely audited at a zero-based budget to verify that they are still needed. The strategic usefulness of the expense is seldom reviewed.
- To what extent can tax money be spent more efficiently? We can spend a dollar only once. It is useful to think about the strategic return on expenses before making budgetary choices.
- How much money is spent on administrative overhead versus direct services to meet the need/solve the problem?
- How do governments handle unexpected expenses, such as natural disasters, failures of public infrastructure, and resulting damage such as pandemics?
- Is risk management used by governments in their strategic planning?

Answers to these questions can be very enlightening. After all, there has never been so much money spent by governments in absolute and relative terms. And yet pressure groups complain that it is not enough. Does this not encourage reflection? Are we doing well? Can we be more effective?

Today, data are available through hundreds of databases, but are we well informed? Do we know how to find the information we need? In 2019, the richest 1% of Americans collected more than one fifth of all income in the United States (20.9%) and paid a slightly higher share of the overall federal, state, and local taxes (24.1%). Meanwhile, the poorest fifth of Americans received only a small fraction of the nation's income (2.8%) and, as a result, paid a small fraction of the total federal, state, and local taxes (2%). Although this information is found with a quick internet search, not all citizens are skilled at navigating the internet for this type of data.

It is important not only to do things right, be efficient, and apply cost management, but also to work in the right direction. Optimizing the wrong things is senseless. Therefore, the following questions must also receive solid and substantiated answers:

1. Are we creating the right jobs in the country?
2. Do we provide the right training opportunities and in sufficient numbers? Are the right people aware of the opportunities and able to obtain training?

3. Is each AOPS focused on its core tasks, or are they working past the scope of their mission?
4. Has overlap been eliminated between two or more AOPSs that do the same or similar work?
5. Do we spend tax revenues economically?
6. Will we be able to pay future debts? It is not just about paying existing national debt but also the costs of an aging population (pensions and medical costs of the baby boomers, for example), infrastructure updates, and measures around climate change.

The first point, however, is particularly important and is hardly addressed in politics, the media, the AOPS, or academic discourse. If we have enough of the right jobs with the right support structure, economic growth will be large enough (more than 2% economic growth per year) to pay the costs of the other five points listed previously. To continue to pay all state and federal expenditures, it is necessary that there are many jobs (companies) that pay high wages (high-tech companies, automotive, chemicals, pharmaceuticals)—and thereby create high economic added value. The average wage in those occupations is at least three times higher than the minimum wage. But employment has evolved in the opposite direction over the last 20 years. Some observations:

- More government jobs are being created in agencies, states, counties, cities and municipalities, non-profit organizations, and the health sector. Many of these are contractors, since there are usually limits on the number of civil servants. Contractors are not counted the way civil servants are, so numbers are not readily available.
- Before the COVID-19 pandemic, more service positions such as cleaning, garden maintenance, hotels, bars, and restaurants were available; all are jobs that pay one to one-and-a-half times the minimum wage.
- The cost of a college education has increased beyond the ability of many seeking to enter highly skilled career paths.
- New technology has contributed to the loss of high-paying trade jobs and cheaper training costs.
- Until recently, many large factories were closed or relocated to other countries (such as automotive, pharmaceutical, medical devices, and steel). These factory jobs paid three

times and more than the minimum wage. Many higher-paying, hourly jobs have been lost over the last 30 years or have transferred to countries with lower paid workers.

The taxes and Social Security contributions on high wages are, in absolute value, many times more than those on lower wages. This fact does not discount the necessity for a wide range of jobs in the public sector and in the private economy. Higher wages are generally required to compensate for the majority of AOPS positions in the country; lower wages provide those with less education or fewer skills meaningful work and an income. Federal government civil service jobs are mostly professional positions now, not the clerical jobs of the 1940s and 1950s.

Actual Challenges

Today, our society faces a series of challenges, including:

- Successfully integrating migrants into our society, in terms of reception, training, employment, and integration into social life
- Keeping social services affordable (costs for the aged, pensions, and health insurance)
- Finding solutions for current mobility problems, in both rural and urban environments
- Streamlining the bureaucracy that has continued to grow year after year, not only in regulations, but also a multiplication of the number of public organizations and a fragmentation of tasks performed by different AOPS
- Reducing government debt back to normal proportions
- Achieving economic growth (necessary to reduce debt and to safeguard social services)
- Preventing growing social and financial inequality
- Providing internet access for all
- Minimizing the negative impact of industrial activities on health (tobacco, alcohol, sugar)
- Building bridges between polarized groups
- Giving everyone in the country the opportunity to find reliable data in a user-friendly way that eliminates fake news

- Further developing the current prosperity and well-being so the next generation has greater opportunity through continued scientific and technological research

All AOPS are accountable for the management of the aforementioned challenges. They must manage these efficiently (doing things right) and effectively (doing the right things). Such challenges include stimulation by and partnership with the private sector.

Presupposition

Organizations in a country can be roughly divided into two groups: AOPS and non-AOPS. The latter comprises all privately owned companies (small and large, multinationals, the self-employed, and specialized professions).

An AOPS has two core tasks:

- Create a favorable framework so the society can develop to the maximum. In concrete terms, this means public safety and order, a well-adapted infrastructure, scientific research, education, a properly functioning judiciary, tax authorities, well-functioning customs and inspection services.
- Redistribute wealth and develop the well-being of its population. Creating opportunity and improving education/job training will serve to balance wealth more effectively. Also, research stimulates new jobs and products.

Assumptions

The SAC model is based on the following assumptions:

1. Private business creates added economic value.
2. Businesses cannot survive without satisfied customers.
3. Government and AOPS have a duty to create a favorable climate, a foundation, and a context for doing business.
4. Government and AOPS do not have an entrepreneurial business model.
5. Well-being comes after and because of prosperity, not the other way around.

6. Prosperity and well-being are managed via management of key performance indicators (KPIs).
7. Leaders of all AOPS behave responsibly, and each contributes to success (accountability).
8. Leaders of all AOPS show their results publicly and convey how they contribute to success.
9. The SAC model is a systemic approach. The result is influenced by systemic forces.
10. Applying the Pareto principle, 80% of the end results can be achieved with 20% of the resources (people and money).
11. Identifying and managing the right indicators of success is not always obvious; feedback from third parties is necessary.
12. One weak link in the success of the economic and social system can have major consequences on the outcome for the society at large.

In all types of organizations, everything starts with the application of the accountability of the executive suite and senior officials in everyday practice. Only in this way is it possible to use public money in an economical, structured, and sustainable way and also obtain necessary savings. It is important to make the responsibilities clear, measurable, and transparent.

Society and Active Citizenship Model (SAC Model)

In this section, we will describe the SAC model and related KPIs.

Description of the SAC Model

Traditional management models (such as the Malcolm Baldrige Award, European Foundation for Quality Management (EFQM), Common Assessment Framework, and ISO 9000) help leaders manage their organizations. However, there is no management model yet for the management of a country or region, except for financial and political management (state economics). Based on our extensive experience with the Baldrige and EFQM models and the management of dashboards and indicators, we can now describe a management model for a whole society.

The model consists of a cycle of 10 links:

Link 1. Foundation and context

Link 2. Initiative

Link 3. Investments

Link 4. Staff recruitment and talent development

Link 5. Production and services

Link 6. Profit

Link 7. Taxes and Social Security

Link 8. Distribution of prosperity

Link 9. Increased well-being

Link 10. Lessons learned, fed into next planning cycle

Note that the order of the links is important (**Figure 1**). Each link must be well developed to sustain an effective country management. Each link is influenced by stimulating and inhibiting factors. Each link is as strong as the management of all underlying entities.

The SAC model starts with creating and maintaining a foundation (link 1) through which private entrepreneurship becomes possible. This first link is managed mainly by the AOPS. It includes subjects such as infrastructure maintenance, inspection, and control activities. Entrepreneurs take initiative (link 2), set up companies, make investments (link 3), recruit staff (link 4), manage operations (link 5), and make a profit (link 6). They contribute to the development of the country by paying taxes and employing its citizens who also pay taxes. The tax money is managed by the government (link 7). This further develops the foundation for living, working, and leisure (link 8).

Many AOPSs are responsible for the development of the well-being of the people (culture, education, healthcare). Each AOPS, when it employs a self-assessment method such as the Malcolm Baldrige National Quality Award (MBNQA) or the Excellence Model of the EFQM, analyzes areas like human and gender equity, resilience, sustainability, safety, public health, ecological issues, integration of certain groups within society, and stake-

holder satisfaction (link 9). Organizations from the well-being sector (culture, education, healthcare) are now able to improve the well-being of the population in a systematic and structured way.

Links 1, 7, 8, and 9 are managed largely by the AOPS. Links 2, 3, 4, 5, and 6 are executed mainly by privately owned companies. Link 10 applies to all.

The nonprescriptive nature of the SAC model is one of its strengths, in contrast with standards such as ISO 9001 and ISO 14001, which have a mandatory character. However, within the SAC model the responsible managers are accountable and must behave responsibly.

Key Performance Indicators

A direct or indirect hierarchical structure of the AOPS exists within most countries. The leaders of each individual AOPS within that structure develop their own vision, strategy, and operational plans. They ensure these are aligned with the higher-level organization. In turn, the KPIs of each organization are aligned with the vision, strategy, and operational plans and mission of the higher-level organization. Each indicator is managed by a functional owner. This is done in a structured, standardized, and systematic way. Each indicator contributes positively to the realization of its organization's higher goals (vision and strategy), and these in turn contribute to the realization of even higher goals. In this way a tree of indicators is created that follows the organization chart.

Ideally, each AOPS has its own organization chart. Each function in this chart has a leader, and this person is accountable for at least two KPIs. Progress is published monthly against these two KPIs on the organization's website. In the United States, they are also subject to executive and legislative actions. Besides a vertical alignment of objectives, there is also a horizontal alignment—partnerships between an AOPS and other organizations. For example, the responses to COVID-19: partnerships among departments of health, teams of doctors and nurses, hospitals, institutions, and universities working on public health (epidemiologists), call centers (contact tracing), police, cities, and municipalities during the response within a country or region.

In the context of managing a country or region, many thousands of indicators must be dealt with. KPIs must have three essential characteristics to effectively achieve sustainable results. As measures are rolled up the tree of indicators, managers of these

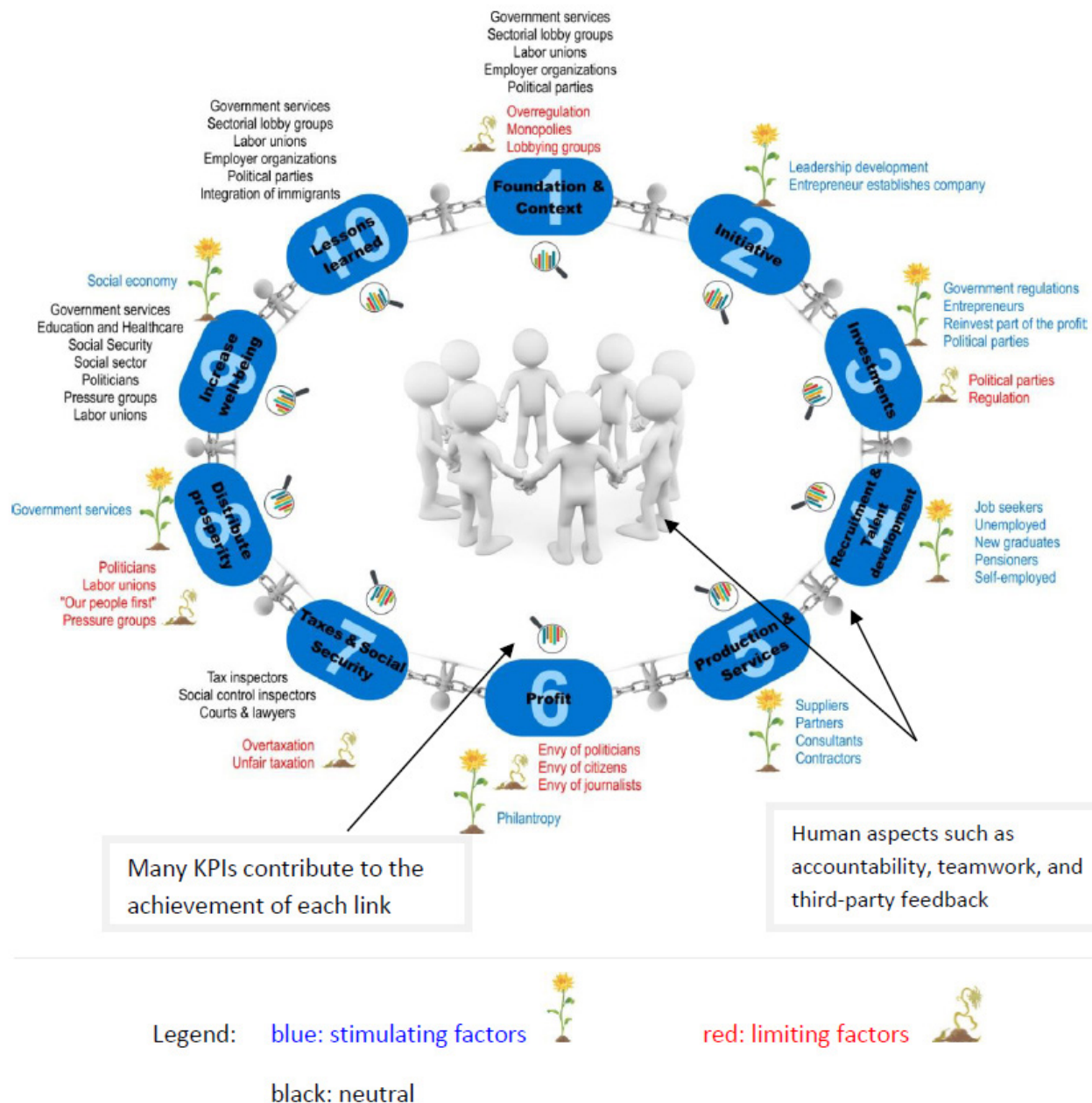


Figure 1: Schematic and short representation of the SAC model: a cycle of 10 links

indicators must remain accountable and provide accurate and transparent data.

Accountability: Three conditions must be fulfilled simultaneously: 1) each leader has two KPIs per core activity that are published on the department website monthly; 2) the leader takes feedback from third parties seriously; and 3) it shows the results of at least five years of continuous improvement in operational performance. This is how sustainability is achieved.

Accurate information: Information must be validated through the KPI description on the organization's website. The layout of the KPI is structured and standardized. One parameter is the accuracy and detail of the measurement method, the sampling method used, and the interpretation of the results.

Transparency: The KPI owner describes the AOPS objectives in detail on the website after each strategic planning cycle. Each month the KPI owner publishes the results of operations in the form of KPIs understandable to stakeholders and to third parties accessing the site. Finally, the manager personally interprets the facts and lessons learned, including decisions and action plans to improve performance in the coming month. The website must encourage stakeholder input. KPIs must be handled in an accountable way, not as a punishment (unless there is mismanagement). Otherwise, managers are reluctant to use them or may manipulate the numbers.

The owners' indicators consider the feedback from their immediate environment, as well as that from external or third parties when the measurement guides external activities, which leads to better management of the indicators guiding positive management practices. When these indicators are published on the organizational owner's website, anyone who accesses the website can provide feedback on the effectiveness of the organization. Such an ability to monitor and provide real-time feedback is reflected in the name of the model: Society and Active Citizenship model.

Note that the 10 links are a continuous cycle, not a single thread (see Figure 1 again). As those responsible for each link activity publish their results based on the tree of indicators, the active citizenship portion of the model is realized. In Florida within the United States, for example, this active citizenship portion takes several forms: citizen and third-party participation in city and county commission meetings, direct website feedback, letters to the responsible department or the news media. Analysis of this

feedback triggers the move from link 10, Lessons Learned, back to link 1, Foundation and Context.

Since the SAC model consists of a chain with 10 links, the chain is only as strong as the weakest link. Each party contributes equally to the whole. **Figure 2** shows the sequence of the 10 links, as well as the stimulating (blue color) and inhibiting factors (red color).

The SAC model is a task-orientated approach (KPIs, results, process management) as well as a people-oriented approach (teamwork, accountability, third-party feedback, leadership development of leaders of each AOPS). All this is done in a structured, systematic, and process-oriented way. The goal is to achieve excellent and sustainable results for the country. But more is needed.

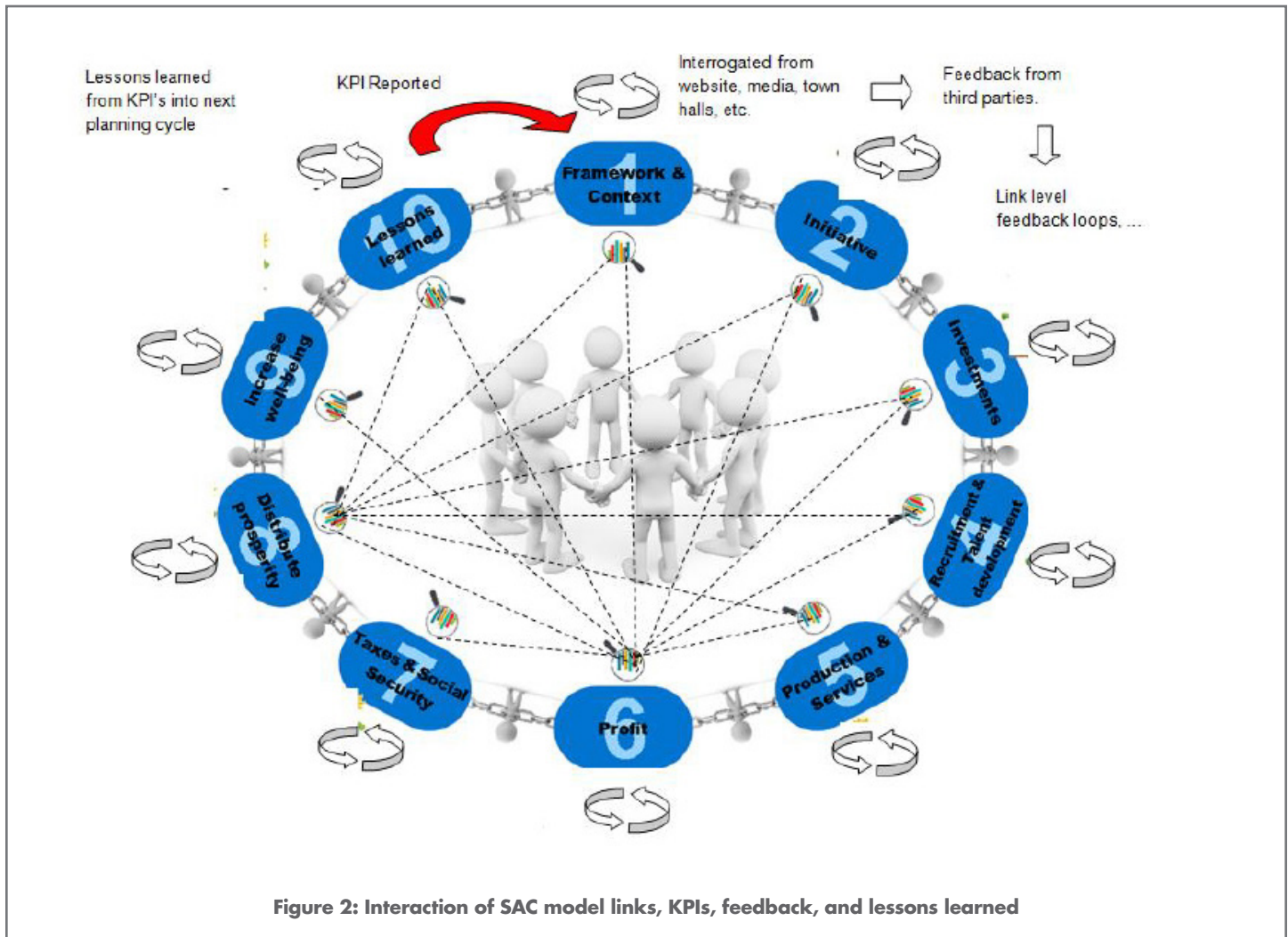
The Outcome of Employing the Model

Although the use of indicators is extensively addressed in the management of an AOPS, this does not mean that it is only about hard, cold figures. On the contrary, it is about creating a warm society where people of different ages, origin, race, beliefs, etc. can live harmoniously with each other. Human equity is important and cannot be over emphasized. However, the involvement of the citizenry and other stakeholders must not only be addressed in generalities. The steps in the 10 link SAC model must be clearly defined, measured, analyzed, and improved. The application of the model must be concrete, deliver excellent results, and be viewed positively by the different stakeholders.

Interaction Among the 10 Links

The following paragraphs briefly describe the interaction among the 10 links, critical success factors, the principles, and the SEE-tool of the SAC model, which will be described later in this article.

Each of the 10 links influences one or more other links. The model must be viewed as a symbiotic, flexible system for delivering added value to all country stakeholders and citizens. There is a logic among the 10 links of the SAC model. The sequence is important. Figure 2 illustrates interaction of the links; related KPI reporting, interrogation, and feedback from interested parties occur at all points of the cycle. Accountable functional owners at each link manage their tasks based on KPIs set by the organization. Feedback from interested parties provides both proactive, innovative ideas, and reactive corrective action. Such feedback



is used for ongoing decision-making within the link functions. The links impact each other, as illustrated by the dotted lines internal to the circle of links.

Internal lines are illustrative, not inclusive. Finally, major lessons learned and summary indicators are fed from the analysis in link 10 back to link 1 for proactive, strategic planning for the next improvement cycle. The foundation and context created by the AOPS must be clear (link 1) before policies can be written or businesses can effectively function. As the saying goes, "You must

bake the cake first (links 2 to 6), before you can serve it (link 7 to 9). Doing the reverse does not work."

Let's look at some examples of interaction among the 10 links. Consider the second wave of COVID-19 infections in the United States and Europe. In October 2020, a major second wave of COVID-19 infections appeared. Schools and colleges opened, college administrators sanctioned sports, and many churches resumed in-person worship. States did not require masks and opened restaurants and beaches. Consequently, lots of family members, including grandparents, became infected. Hospitals

were overwhelmed again. Many countries closed their society a second time (lock down). This is an illustration of link 9. The impact on the other links is tremendous. Companies stopped investing (link 3), stopped hiring people or dismissed personnel (link 4), lowered production volume (link 5), made less profit (link 6), and paid less taxes (link 7). The reaction started on one link (link 9) and caused a reaction through the whole cycle (links 3 to 8). What was the root cause of this problem? Link 1, Framework & Context. The AOPS together with the politicians failed to communicate well, enforcement of the restrictions was weak, and situation monitoring was also weak (contact tracing of the sources of coronavirus). Was link 10 well applied? Apparently not. After the first wave (March-April) it was assumed that the preventive measures were put in place to avoid a second wave.

A second example of the SAC model is portrayed in Figure 2: A chemical company produces agricultural sprays (link 5, production and services). When it neglects the safety and environmental conditions, it can harm people living in the surrounding area. These peoples' health is at risk (link 9, increases well-being).

These two illustrations are examples of negative impact. There is also positive impact. The same chemical company implements a major investment (link 3, investments) and hires new collaborators (link 4, recruitment and talent development). The prosperity of the company's people and the local community is increased (link 6, profit, and 8, distribute prosperity).

Characteristics of Sustainable, Effective, and Efficient Country Governance

In *Why Nations Fail: The Origins of Power, Prosperity and Poverty*, authors Daron Acemoglu and James A. Robinson investigated many countries around the world, some going back 2,000 years. They isolated 11 critical success factors (CSFs) for sustainable development (50 years or more) of a country or region. They discovered that inclusive institutions, those that seek to serve their citizens rather than amass wealth at the top, have certain factors in common. The absence of one or more of these factors means that a country will not develop in a sustainable way.

These 11 CSFs are:

1. Legal certainty (including separation of powers)
2. Property rights (land and house ownership, money, savings, and shared ownership)
3. Democracy, pluralism, and freedom of political expression
4. Education
5. Innovation and creative destruction
6. Globalization and free trade (including free market and individual freedom of choice)
7. Inclusive political institutions (versus extractive institutions)
8. Integrity versus fraud and/or corruption
9. Infrastructure (roads, railways, ports and airports, education, telecom, energy supply, water supply, sewage, water treatment)
10. Accountability of the leaders
11. Human rights and freedom of expression

These 11 factors are the fundamental pillars on which the foundation of society rests. Imagine a house being built in a swamp. You must first sink 11 pillars deep in the ground so the house will stand solidly. It is not enough to choose a few factors and wait to develop others later. All 11 CSFs must be actively developed and put into practice. This article adds an additional factor to the list: remuneration policy. How the entity, individual, or teams are rewarded for their contribution.

Remuneration policy is CSF number 12. All 12 are taken into consideration in the development of the SAC model. Discussing these characteristics in detail is beyond the scope of this article; however, each characteristic must be considered when establishing a basis for running a country. A follow-up article will present a detailed discussion of these 12 CSFs.

In the case of extractive political institutions, the leaders ensure that they serve themselves well, maintain the current structures,

retain all power, and prevent regular citizens from gaining power or influence. They “extract” and channel the wealth of the citizens, natural resources, and the possessions of people and the country toward themselves as much as possible. They strive for status quo and ensure that the distribution of the wealth (of the country) flows mainly to them.

In contrast, in inclusive institutions, the 12 CSFs described previously are fully met: citizens can develop, take initiative, and create prosperity, divide prosperity, express their opinions, and push through political changes. Citizens see both their prosperity and their well-being increase.

Principles

The SAC model is also based on the following principles (**Table 2**)

The list in Table 2 is based on the authors’ 40 years of experience in applying management methods in organizations. This is not an unrealistic scenario. Singapore has proven that it is feasible.

SEE-tool

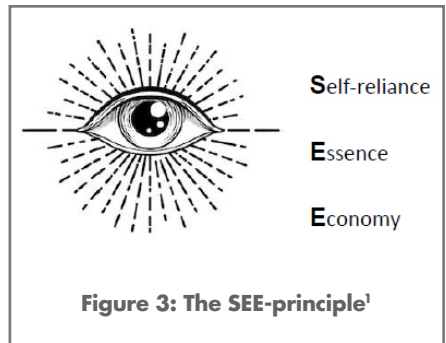
Thanks to civil servant and citizen interaction, not only does the AOPS improve (better results) but so does society as a whole. This interaction is more effective when the self-reliance–essence–economy (SEE) principle is applied (**Figure 3**). The SEE-tool is a fast, iterative exercise to maintain the effectiveness of a decision or activity. Every leader of the AOPS systematically applies these simple principles, reflected in the following three questions:

1. To what extent is the decision contributing to the increased self-reliance of the citizens and companies? Therefore, only rarely will subsidies be given to citizens or companies.
2. To what extent is the activity and its corresponding KPIs essential to and within the scope of the AOPS?
3. To what extent are all activities executed economically? Is the procedure or process too complex?

If the answer to any of the three questions is negative, the leader should redesign or delete that activity. The SEE-principle is employed much like the plan-do-check-act (PDCA) cycle for sustainability or continuous improvement of a process, activity, task, or decision.

Table 2: Principles on which the SAC model is based

1. The general interest precedes the interests of individuals and/or groups.
2. Long-term decisions are decisive.
3. AOPS and businesses create real added value.
4. Citizens are encouraged and may question the issues and investigate them critically.
5. Priority is given to initiatives that positively contribute to improving the country’s balance of trade and balance of payments (this is one of the foundations of a country’s prosperity).
6. Investment in the country continues even if the circumstances are not favorable (e.g., recession).
7. There is encouragement of the use of citizens’ self-reliance.
8. Constant consideration of what the significance is of the activities and goals.
9. Use the resources provided economically.
10. “The world is our village,” that is, the world market is the starting point where companies can (survive) in a competitive way. Do not rely on a protected market or position but look at and consider the most efficient competitor in the world.
11. Every manager is accountable for the efficient execution of his/her core tasks, being both task- and people-oriented, both process-oriented and results-oriented.



Let us illustrate this for one AOPS. Complete the following table.

Table 3: Step-by-step plan for the application of SEE-tool:

	Step	Finding
1	List of core activities. The number of core activities =	
2	There is at least one KPI for each core activity. The number of KPIs =	
3	List of strategic objectives. The number of objectives =	
4	There is at least one KPI for each strategic objective. The number of KPIs =	
5	Calculation. (Number of core activities + number of strategic objectives)/number of members of management team. Is this number greater than 5?	
6	Calculation. Average number of hours per week that a member of the management team works actively with his KPIs. Number of hours/week/member management team =	
7	Apply the SEE-principle to several core activities. How many core activities should you cut?	
8	Apply the SEE-principle to several strategic goals. How many strategic goals should you cut?	

Steps 1–4 involve entering data. Below is some discussion about the completion of Table 3:

Step 5: If the average number of KPIs per member of the management team is much larger than five, ask whether all the tasks are core to the organization.

Step 6: Is the number of hours/week/members of the management team less than 8? If so, is the manager busy with other tasks that are not core or strategic goals?

Steps 7 and 8: Applying the SEE-principle to all core activities and strategic goals. For each KPI (core activity and strategic goal), ask the following three questions:

1. Does this activity increase the self-reliance of the citizens and/or companies?
2. Is this part of the essence (core task) of the organization?
3. Can the activity be carried out better, differently, and more economically?

Pareto + SEE-principle

The Pareto principle is the 80/20 rule, which surmises that with 20% of your time or 20% of your resources, you can achieve 80% of the planned results. Leaders of an organization know that they must focus on *essential* tasks. They do not need to control everything; they must monitor only 20% of all tasks. Only 20% of the activities are key!

In addition, you can apply the Pareto principle a second time. If a leader of an AOPS applies the SEE-principle on every core activity, he/she will discover that only a small number of core activities are left that he/she must *monitor*. Having done so, the leader becomes very efficient in his/her leadership approach. However, some organizational managers try to control everything, which is impossible.

Structural Reforms: What to Do?

We live in a time in which much *data and information* are available. This is the case with public sector organizations but:

- Much information is available (internally and via websites), but it is not always accessible.
- Sometimes information is missing or cannot be found (try to find the number of people employed in all organizations of the public sector in your country in one document or one webpage).
- A lot of information is fragmented (it takes a lot of work to find the things you need); the information is spread over many places (government organizations) and sources (databases).
- No relationship is made between core measurements and their impact on society in relation to other functional core measures (e.g., the state of Oregon recently passed a law to legalize small amounts of cocaine for personal use, while the state prohibits use of plastic straws to protect wildlife and reduce litter. Core measures of maintaining a productive society and population are subverted, while focusing on an ecological goal of reducing litter).
- Many statistics are produced but hardly any indicators are used by AOPS.

- The data in the many databases are not always reliable, complete, or precise.
- Many input and process indicators are available but hardly any output and outcome indicators.
- The question then arises: Can the country or region be managed differently and better? If so, how? The answer is yes, if the following criteria are applied:
- Every AOPS proves added value for each activity.
- Each AOPS website clearly shows which savings have been achieved in the past year due to productivity improvements.
- The AOPS demonstrates how it economically manages its budget.
- It demonstrates how it contributes to a positive trade balance and a positive balance of payments for the country.
- It contributes to the realization of long-term objectives (10 years and beyond).
- It contributes to the increase of self-reliance of businesses and citizens.
- It eliminates non-added value activities (e.g., by simplifying the regulations, focusing on less fragmentation, shortening lead times such as permits).
- AOPS investigates how it can improve the response speed toward its customers.
- It supports the general interest.

A “yes” answer is possible only if all managers of the AOPS can demonstrate with which indicators they work and which results they obtain systematically and structurally. In the context of accountability, and transparency of organization management, all managers publish their indicators and results on their organization, department, or service website monthly.

Advantages

The SAC model allows the following elements to be accomplished:

1. The accountability of all managers of the AOPS

2. The transparency of the use of public money
3. The correct use of resources that leads to desired and planned results
4. The active participation of the citizen in the policy pursued due to constructive feedback
5. The formation of a counterweight to anti-politics and focuses on the needs of society, not just the elite
6. The maintenance of at least as much prosperity and well-being for future generations as we experience today
7. The promotion of a positive environment in which to live, work, and relax in this country or region

It is not often that these elements are all well developed within a country, region, or community. Probably only a minority of readers will agree that all seven criteria are consistently met within their country. But a country can produce sustainable results if the seven elements in the list are fulfilled.

Conclusion

The SAC model is a first, not the last, step toward a sustainable society. The model is completely new and therefore needs further study. Combined with the exploding power of emerging technologies, the SAC model can achieve revolutionary improvements in the management of a country. The SAC model provides a roadmap for successful management evolution.

The model can be applied in every country or region where governments are founded on serving their citizens, and this article gives only a basic introduction to the model. The elements of the SAC model will be described in more depth in subsequent articles. We are grateful for the constructive feedback received from Christena C. Shepherd and Janice Stout of the ASQ Government Division.

Book Review | Daniel Zrymiak

Review of *Demand Driven Performance: Using Smart Metrics*

Debra Smith and Chad Smith | McGraw Hill Education | 2014 | 301 pages

I was very pleased and impressed with *Demand Driven Performance: Using Smart Metrics* by Debra Smith and Chad Smith. The breadth of content and usable points are so plentiful that this review does not do justice to the practical examples and methods within this book. At best, I can condense this into a high-level summary with the overall encouragement to acquire and review this reference tool, which would appeal to those who follow the works and teachings of Dr. Eli Goldratt and the concepts of constraints management.

The initial points expressed are that supply chain systems are complex and nonlinear. Conventional costing and reporting are based on a linear system rule set, creating disharmony and misalignment. One remedy described is manufacturing resource planning (MRP), which integrates operational and financial planning in units:

- Simulation capabilities can answer what-if questions.
- MRP links business planning, production planning, master production scheduling,

material requirements planning, capacity requirements planning, and execution support systems.

- MRP evolves into enterprise resource planning (ERP), which includes customer interactions.

The authors consider operating circumstances across multiple areas, including supply chain, product offerings, customer expectations, forecasting, and inventories. Promoting the speed of flow and controlling variability are emphasized as priorities. According to their first law of manufacturing: All benefits are directly related to the speed of flow of information and materials (i.e., service, revenue, inventories, expenses, and cash). Variability is presented as something that operates systemically and affects steps and processes in unpredictable ways (i.e., bullwhip effect of extreme changes generated from small demand shifts).

The four distinct sources of variability (demand, supply, operational, management) are described, along with remedies: thoughtware, demand-driven practices, and smart metrics.



About the Reviewer

Daniel Zrymiak is an engagement manager at Ultronauts, based in Surrey, British Columbia. He has more than two decades of international experience in quality and project management, primarily in information technology, operational excellence, and consulting. Zrymiak is an ASQ Fellow and has been awarded ASQ's Feigenbaum and Crosby Medals and a Testimonial Award. He is a Quality Press author and reviewer, and committee chair for the ASQ Edwards Medal. Zrymiak remains active with the Quality Management Division as a member leader and vice-chair of governance and excellence. He can be reached at: Dzrymiak.asq@gmail.com.

Thoughtware is a term the authors use to combine thinking and communication within organizations. It is the outcome from having formal training to think systemically, common problem-solving language and framework, connections linking entities together, and visibility to see relevant connections among departments, resources, and people. This is effectively applied by encouraging team members to think and offer solutions outside of their area and by identifying how and where variability accumulates and amplifies to affect total system flow.

Return on investment (ROI) is profiled as a tangible metric affected by multiple measures and improvements. Organizations can improve ROI when operations are adjusted to decrease inventory, improve quality, increase sales, decrease cost, and improve service. The authors display a progressive pyramid, incrementally showing the organizational output from the goal toward the strategic and tactical objectives and prerequisites. Based on these, actions can be defined. Potential conflicts from these actions are reflected in what the authors termed a conflict cloud or web of conflict. Conflicts occur when the fulfillment of one action (i.e., minimize shipping costs) inhibits or obstructs concurrent actions (i.e., minimize lead times). Waste is redefined as an unresolved conflict and is self-destructive in nature.

The next section—about becoming demand driven—describes shifting mindset from “push and promote” to “position and pull.” The identification, placement, and protection of decoupling points and control points are described and defined.

- Decoupling point: location where inventory is placed to create independence between processes or entities.
- Control point (a.k.a. drums, pacesetters): Places to transfer and amplify control through the system. These are often placed between decoupling points to control the lead-time zones, or at points of scarce capacity, entry and exit points (gates), common points of convergence, or areas of notorious process instability.

Flow diagrams show the general relationships between resources and direction of flow material. These are stabilized by demand-driven buffers (i.e., stock, time, capacity), which absorb the expected process variation (i.e., temporary surges) at the different control points.

Smarter metrics are described as a way to shrink lead times and make due dates more firm. The metrics and measures connect the flow of materials and information directly to ROI. The authors describe how to synchronize demand and supply signals and to quantify results by showing the net change in revenue and cost of ROI equations. The metrics are based on the following definitions:

- Visibility: Relevant information for decision-making
- Variation: Differences between planned events and actual outcomes
- Flow: Rate at which a system converts material to product required by a customer
- Cash velocity: Rate of net cash generation (sales dollar – truly variable costs) – (throughput dollars – operating expense dollars)
- Net profit/Investment: Equation for ROI

Smart metrics help to align priorities across the organization; enable focusing on the flow through the system; help to identify what is blocking it; and allow actions to be taken to remove it. The authors also identify their measures for flow-centric operations. These include return on investment, return on net assets, and due date performance (e.g., on time delivery). The authors repeat the flawed approaches of current accounting and promote a focus on synchronizing and aligning all resource priorities to the market demand pull signal and on the velocity of system flow to maximize ROI. Based on the principles of nonlinearity, extreme sensitivity, and disproportionate cause and effect (i.e., butterfly effects, bullwhip effects), the industrial practices require a demand-driven approach.

The authors reference the effectiveness of strategic buffers and the five core functions to manage and measure flow:

- Recover things from variation and protect flow at decoupling and control points
- Provide a visible feedback loop on the state of the system
- Provide signal, signal alignment, and signal strength
- Highlight emerging problems proactively, supporting Pareto analysis for emerging patterns

- Capture patterns of the system leading to better planning and scheduling

Feedback loops are defined as ways to provide the current state of the system's critical points and to capture trend patterns of system anomalies over time. Such data provide information on observed performance gaps to support visibility, variation, flow, velocity, and ROI.

The use of non-financial metrics (i.e., reliability, stability, speed/velocity) and financial metrics (i.e., system improvement and waste opportunity, operating expense, strategic contribution) are instrumental in confirming the controls from the methodology.

Examples of additional product metrics include flow index, minimum order quantity, and average daily usage.

These smart metrics are captured and applied to support recovery and preventive actions. Demand-driven systems align with lean and constraints management in that the system pulls demand and directs work between control points. The authors reinforce these concepts with multiple case studies, along with a summarized "cheat sheet" to enable rapid application. The executable schedule should focus on system flow and the market lead-time strategy. The use of control points also promotes the practices of specific troubleshooting and rapid corrective action upon notification of alerts.

World Quality Month Word Search... Can You Find Quality in What You Do?

Disclaimer: This is a homemade word search, apologies in advance for errors not yet found. Good luck!

Author Id Marhevko

D	E	F	E	C	T	S	S	I	G	M	A	J	M	C	C	S	E	M
E	W	Q	A	N	D	O	N	S	L	E	B	U	O	R	R	T	A	E
S	E	T	U	E	W	S	T	A	N	D	A	R	D	W	O	R	K	A
I	I	O	R	A	I	A	G	T	F	L	D	A	E	H	S	A	N	S
G	B	Z	S	U	L	Q	U	I	A	A	L	N	S	Y	B	T	O	U
N	U	T	T	D	I	I	T	S	Y	M	C	O	N	F	Y	I	W	R
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O	L	B	T	T	I	T	H	Y	T	H	E	Q	S	V	N	Y	E	M
R	E	L	I	A	B	I	L	I	T	Y	U	A	L	E	S	C	D	E
S	P	E	C	I	F	I	C	A	T	I	O	N	S	T	P	O	G	N
I	R	S	A	I	S	H	I	K	A	W	A	E	I	I	E	N	E	T
X	E	D	L	E	A	N	K	T	N	Y	C	T	M	M	C	T	A	S
S	V	I	P	N	A	C	G	I	E	N	M	E	F	E	T	R	L	Y
I	E	S	R	N	E	T	N	E	A	C	C	E	S	S	I	O	D	S
G	N	T	O	H	I	I	V	I	R	T	E	A	M	S	O	L	I	T
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R	E	U	S	O	W	A	S	T	E	R	O	S	P	O	D	N	B	N
U	A	T	C	D	E	M	I	N	G	C	N	T	D	R	P	S	H	A
D	C	I	O	A	K	E	A	S	P	D	I	I	E	N	O	Q	S	L
E	T	O	N	F	P	F	K	Q	E	R	E	N	N	R	E	O	I	Y
C	I	N	T	A	C	S	P	O	I	S	S	O	N	G	A	R	F	S
O	O	S	R	E	I	A	C	U	S	T	O	M	E	R	S	P	T	I
R	N	C	O	R	R	E	C	T	I	V	E	A	C	T	I	O	N	S
P	S	!!!	L	T	H	E	S	H	I	P	P	I	N	G	D	O	O	R

Cross off all of the letters for each word

The remaining 82 letters will spell out a message

The !!! Is intentional (and part of the message)

ACCESS

AIAG

ANDONS

APQP CORE TOOLS

AUDIT

CHECK

COMPLIANCE

CONTROL PLANS

COPQ

CORRECTIVE ACTIONS

CROSBY

CUSTOMERS

DATA

DEFECTS

DEMING

DESIGN FOR SIX SIGMA

DISTRIBUTIONS

DRIFT

ERROR PROOF

FACTS

FISHBONE

IATF

INSPECTION

ISHIKAWA

JURAN

KNOWLEDGE

LEAN

LEARNING

MEASUREMENT SYSTEM ANALYSIS

MODES

MUDA

NEED

PARETO

POISSON

PREVENTIVE ACTION

PROCEDURE

QUALITY

RELIABILITY

RISKS

SATISFY

SCRAP

SHAININ

SIGMA

SPECIFICATIONS

STANDARD WORK

STATISTICAL PROCESS CONTROL ("STI" Not in the word)

STRATIFY

TEAMS

THE SHIPPING DOOR

TRENDS

WASTE

WEIBULL

WHY FIVE TIMES

Z TABLES

Quality Management Journal Previews

Volume 28, Issue 4, Executive Briefs

S. Thomas Foster Jr., Brigham Young University

Following is an overview of the current edition. We have four interesting articles. I am grateful to these researchers for submitting articles to the *Quality Management Journal*. If you are thinking of submitting to the journal, you should know that our editorial board is excellent, and articles are handled in an expeditious manner.

The strategic value of servitization: A quality management perspective

Muratcan Erkul, Subhajit Chakraborty, and Hale Kaynak

The authors present a typology of the extent of servitization for manufacturing firms in different industries that could help them improve their firm performance. They posit that contemporary manufacturing firms may benefit from implementing quality management practices while being organizationally innovative and staying focused on satisfying their customer needs.

The Impact of Risks Management in the Success of JIT Implementation: Structural Equations Modeling for Relational Analysis in the Moroccan Industry

Fatima Sebtaoui, Ahmed Adri, Said Rifai, and Kenza Sahaf

For more than 30 years, supply chain management has adopted the just-in-time (JIT) strategy. However, JIT leads to complexity and risks. The main objective of this study investigates activities related to risk management in JIT implementation and their relationship with critical success factors (CSFs). The key activities executed during JIT implementation and the benefits obtained are identified.

Lean and CSR, Contradictions and Complementarities: Toward an Effective Managerial Solution

Silverster Ivanaj, Mélanie Collet, Corinne Gendron and Alice Friser

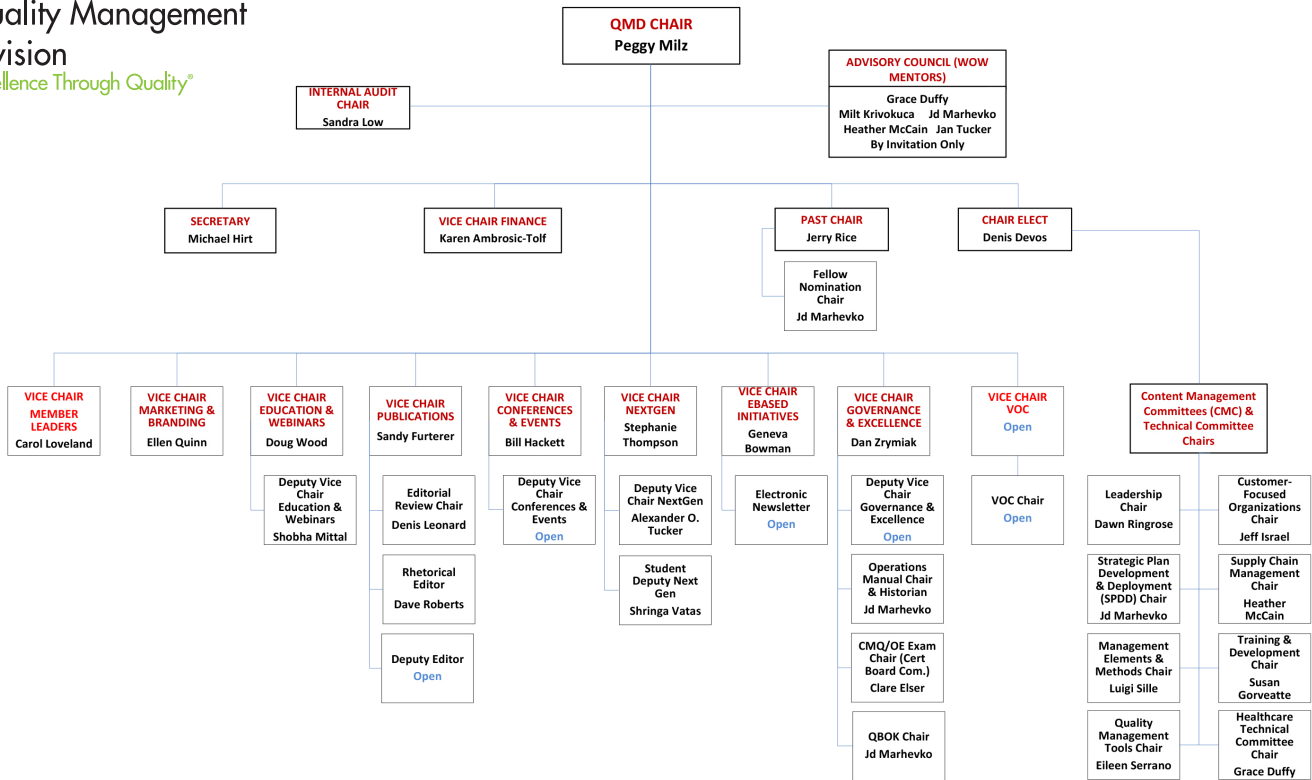
The authors suggest that lean management and corporate social responsibility (CSR) can be at odds. They employ a qualitative survey of seven companies to understand the synergies and possible contradictions between lean and CSR approaches. They find that CSR brings lean management a way to consolidate its social and environmental benefits and brings meaning that fosters employee engagement and extends the intervention scope of lean to external stakeholders.

Effect of Organizational Culture and Quality Management on Innovation among Nigerian Manufacturing Companies: The Mediating Role of Dynamic Capabilities

Kabir Musa Shuaib, Zhen He and Lisha Song

According to the authors, their article examines the mediating role of dynamic capabilities on the relationship between organizational culture, quality management, and innovation among manufacturing companies.

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Vice Chair Conferences and Events

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QBD Strategies
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Email: bill.hackett@qbdstrategies.com

Vice Chair NextGen

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Crowned Bridge
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Email: nextgenqualityconnection@gmail.com

Vice Chair Ebased Initiatives

Geneva Bowman

Quality Assurance & Regulatory Audit Manager
Phase 4 Services/MCR Labs
Phone: 361-676-0661
Email: gbowman@memberleader.asq.org

Vice Chair Governance & Excellence

Daniel Zrymiak

Ultronauts
Phone: 604-575-3269
Email: Dzrymiak.asq@gmail.com

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Address all communications regarding *The Quality Management Forum*, including article submissions, to:

Sandy Furterer, PhD, MBA, Editor
Associate Professor, Department of Engineering Management,
Systems and Technology
University of Dayton
300 College Park
Dayton, OH 45469-0236
Phone: 937-229-2475
Email: sfurterer1@udayton.edu

Address all communications regarding the QMD of ASQ to:

Jerry Rice, QMD Past Chair
Phone: 573-231-2580
Email: rice_jerry@sbcglobal.net

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