THE SMILE OF THE NURSE: QUALITY FOR THE UNPREDICTABLE WORLD

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Abstract

This research aims to design and test a new model to support quality improvement in face-to-face, front office services. In this paper we present the first phase of the project, the development of the model. We also describe how it will be tested for applicability and efficacy. Drawing on complexity and leadership theories an existing model is adapted to fit the particularities of face-to-face service environments. In the next steps of this research, the created methodology shall be tested empirically.

Current quality management methods focus on manufacturing and on analysing cause – effect type problems. However, this is not suited for front office service industries. The Cynefin model explains why this is the case and the complex problem quadrant of that model offers a potential solution for expanding the reach of quality management. By adding steps to the Probe-Sense-Respond approach proposed in the Cynefin model, we developed a new methodology for excellence in face-to-face services.

Offering an approach to improve quality within the unpredictable world of face-to-face services, our research expands the application area of quality management to a previously underserved, but extremely important, part of business. To the best of our knowledge, this approach offers novel insights in service quality management.

Keywords
Quality management; Cynefin model; face-to-face services; front office workers; complexity theory.

1. Introduction

In his book "Total Quality Control", published in 1951, Val Feigenbaum laid the foundations for Total Quality Management (TQM). This is now exactly 70 years ago but despite the fact that the Japanese have shown the big advantages of TQM, the philosophy and methodology is clearly not yet applied in every sector and every organization. In fact, even in organizations applying TQM, not all departments are truly involved and affected so in practice it is far from total (ASQ, 2016).

Historically TQM efforts have started within industry and focused on product quality. As an example, the automotive sector has been one of the main drivers in developing and applying TQM methods. As a result, most of the methods and tools within TQM are focused on Root Cause Analysis (RCA) and Variation Reduction. Various approaches have been defined, from a basic Plan – Do - Check – Act (PDCA) cycle to the more sophisticated Six Sigma Define – Measure – Analyse – Improve – Control (DMAIC) project improvement structure.

Unfortunately, services have been left out of the quality movement for a long time. When they, eventually, entered the picture, a lot of the effort went to standardization, read: rules and procedures. This was not always very much liked within the large domain of services and specifically in the non commercial areas like education and healthcare. Recently, with the increased popularity of Lean and Six Sigma, there is a more intense use of quality methodologies. However, most attention goes to improving processes through an RCA approach aimed at reducing errors and variation in repeatable processes. Some healthcare examples are drug distribution and waiting time analysis, and many other examples from different service sectors can be found in the extant literature.

Service is a term covering a large and diverse area of activities. However, in almost any service organization there are two distinct domains that can be seen: the so-called front-end activities or frontline service or front office (containing face-to-face contact between service provider and customer) on the one hand and back-end service (office type activities where repeatable processes are being performed) on the other. The latter is the area where TQM is most active.

In this line of thought, this research focuses on quality improvement for front end service processes, where variability is a given, as we are dealing with people and each next customer is different from the previous one. Our classical RCA methodologies are not adapted to this situation. So to improve the quality of human interaction processes, we need to look outside of the classical quality management world. We propose to adapt the Cynefin model drawing on leadership and decision theories in order to develop a new approach to excellence for front end service quality.

The paper is structured as follows. First, extant literature on service quality and Cynefin is reviewed. In the next section the literature findings are discussed. Next, Cynefin model is adapted to fit for use in service quality management, particularly in terms of face-to-face service provision. In the following section the empirical testing of the proposed modified model is investigated leading to conclusions and future research lines.

2. Literature Review

A systematic literature review approach is adopted to ensure a clear and wide view of the topic. To conduct a systematic literature review, "*clearly formulated research questions may guide* the researcher through the identification, selection and evaluation of studies pertinent to the topic under research. This is followed by the analysis, synthesis and reporting of evidence from the review to facilitate elucidative conclusions on the state of knowledge" (Sawyerr and Harrison, 2020). Service quality literature is reviewed in line with the following research question:

Research Question: How has Cynefin been used in service quality management?

Novel bibliometric tools (Moral-Munoz et al., 2019) have been used, i.e. VosViewer and SciMAT, in order to facilitate the extraction of review findings and visualize them in a comprehensive manner.

2.1 Quality management in services

Services constitute a broad research topic that is mainly addressed by operations and marketing scholars. In other words, service can be considered either as a process or as a product or both. The service package includes the information, the facilities, and the experience. In the framework of quality management standards, service has been considered as a product, following similar principles and complying with identical requirements as tangible products. In today's economy, what seems to have prevailed is 'servitization', i.e. the coupling of an (intangible) service component to almost each (tangible) manufactured product.

Service-dominant logic (SDL) is a term coined by the IBM Almaden Research Center in San Jose, California to reflect a whole new field of study covering a broad spectrum of service pertinent scientific, management, and engineering disciplines (Bordoloi et al., 2019). SDL improves predictability in risk-sharing relationships that are particularly present in service provision-production mechanisms. Risk is now a key aspect in quality management. The uncertainty-laden service process craves for innovative risk mitigating solutions.

According to Miles (2005), the level of innovation and R&D investment among service firms is lower, on average, than among manufacturing firms (Llach et al., 2011). In a similar vein, a recent European Commission report states that 32.17% of manufacturing companies and 25.91% of service companies have introduced process innovations (Hollanders & Kanerva, 2009; Llach et al., 2011).

2.2 Variation and complexity of services

Service quality is evaluated in terms of its five key determinants: tangibles, reliability, responsiveness, assurance, and empathy (Parasuraman et al., 1988). What is usually measured is the gap between customers' expectations and real-life experience (Parasuraman et al., 1985;

1988). Service marketing researchers have delved into the value-in-use of service, defined as "the feeling of being better or worse off than before the customer used the service" (Grönroos, 2011). Seven dimensions of value-in-use have been identified: solution, attitude, convenience, expertise, speed of service, flexibility, and monetary costs (Medberg and Grönroos, 2020).

While in theory the "value-in-use" of service is well understood as a dynamic and process-based experience, there is a long road ahead for practitioners and empirical researchers to study service process and outcomes, both in the short- and the long-term, whether positive or negative (Medberg and Grönroos, 2020). Service scholars have advanced service-dominant logic beyond the simple exchange between the provider and the recipient to an ecosystem of actors performing multiple roles. In this context, service actors are dynamic resource integrators and complex enablers within a wide institutional and social context (Koskela-Huotari and Siltaloppi, 2020; Virlée et al., 2020).

2.3 Cynefin and service quality management

Cynefin is by definition an ecosystem model. The name of the model comes from the Welsh for 'habitat'. Snowden (2002) adds connotations of acquaintance, familiarity and acclimatization. A novel conceptualization of service quality management from an ecosystem point of view draws on service dominant logic and identifies four dimensions of total quality management and five key value co-creation macro areas of a service ecosystem (Polese et al., 2019).

This research draws on extant literature to firstly find out whether and to what extent Cynefin has been used in theory and in practice to address the many challenges faced when managing quality in services. Using the VosViewer software literature references are mapped in the form of a network having keywords as nodes (Van Eck & Waltman, 2010). As shown in Fig. 1, Cynefin is primarily related with decision making and secondary with complex/adaptive systems and risk management. The human aspect is also highlighted as a critical node in the map.

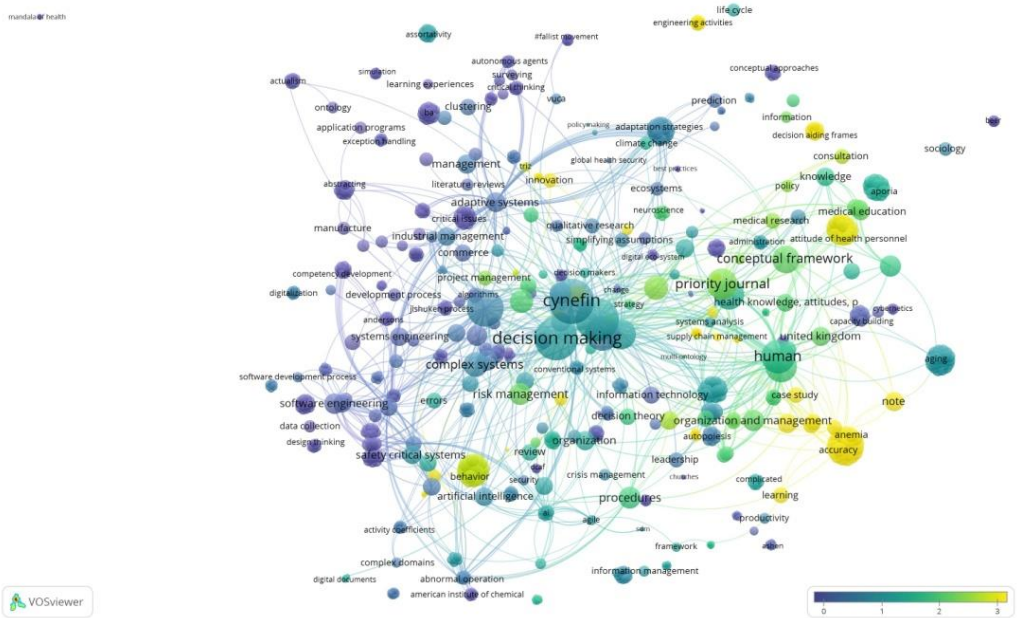

Figure 1. VOSviewer mapping of Cynefin – Service quality references

Scopus keyword search has been used to identify the publications that address topics pertinent to Cynefin. Overall, 133 publications met the criteria. SciMAT software has been used to group the keywords and depict the clusters in the form of strategic maps (Cobo et al., 2012). Keywords are grouped in the form of networks. Methods/tools, complexity, digital, human and knowledge/information are the most significant keyword groups, as shown in Fig. 2.

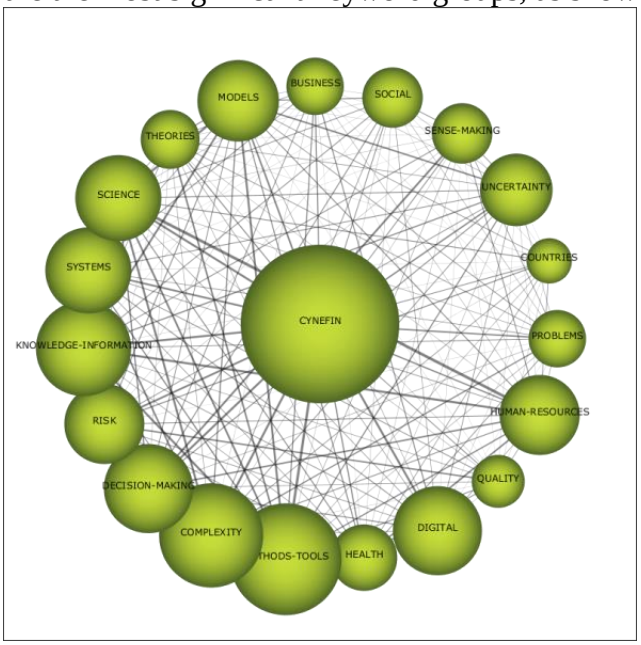

Figure 2. SciMAT Cynefin network

Scopus keyword search has been used to identify the publications that correlate service quality management with Cynefin. Overall, 21 publications met the criteria. Among the SciMat outputs of the processed data are the so-called 'strategic' maps. A map of the kind, enables the relative density of publications sorted in clusters (see Fig. 3). As indicated by the strategic map, in the extant body of knowledge, Cynefin addresses issues mostly relevant to management, economy and society.

Figure 3. SciMAT strategic map

2.4 Conclusions from the literature review

The literature review shows that in quality management, service has been considered as a product. However, aspects of service quality like “attitude” and “flexibility” are difficult to link to classical product quality management. Risk mitigation is an important aspect of quality and novel approaches are needed in the complex world of service quality. When investigating literature on Cynefin there are many aspects relating to this (decision making, complexity and risk management) but remarkably the word “quality” or “quality management” does not come up. Investigating keywords reveals 21 articles that in some way relate to the link between Cynefin and service quality and in the rest of the text we will refer to some of them in relation to our research and views. It is clear that this is still to a large extend an open field for investigation and new approaches in managing service quality.

3. Scope, Motivation and Methodology

When referring to “service quality” in this article we specifically refer to face-to-face encounters or human interactions between service provider and customer but we do not talk about the technical quality of the associated service. As an example: we talk about the quality of the human / social interaction between a hairdresser and his customer but not about the technical quality of the hairdresser. In the same way, we focus on the smile of the nurse, not on her technical ability to administer injections. That is of extreme importance but out of the scope of this article and proposed methodology. However, all such encounters are within scope so even a manufacturing company has aspects that can be related to the methodology. Think about sales but also about after sales service and complaints handling.

The motivation for the development of the methodology comes from the observation that the very large toolbox of quality management methods is not addressing the quality of face-to-face services because it is focused on RCA methods and starts from the assumption that there is a cause – effect relationship, even if today it may not yet be known. As a result we have tools that are analytic in nature trying to define models where control of the input(s) leads to desired and optimized output. However, when the “inputs” are human thoughts and emotions, they cannot be set or standardized. In fact, such efforts to put the intrinsic human behaviour into a specific, standardized framework have led to the most horrible periods of human history. In an economy and a society that is overwhelmingly dominated by services, the quality of frontline service becomes so important that it cannot be neglected by the quality management world. Therefore new methods are needed that can help to work towards excellence in human interactions between service provider and customer.

This research is being performed in four steps. The first is to find a suitable model from outside of the mainstream quality management thinking that can work as a framework to build a new quality approach upon. In a second step we look at transforming this model so that it becomes even more suitable to improve front office service quality. These two steps form the theoretical part of the research. They are also the steps within the overall process that are being described in this article. In a third step the methodology will be discussed and questioned with a group of quality managers active within services with a large impact of face-to-face encounters. This will allow us to finetune the methodology in order to set the fourth step, where we will apply it in an Action Research type investigation. This is explained in more detail in section 6 on Future Research.

4. The Cynefin Model and Links to Quality Management

David J. Snowden developed the Cynefin model while working for IBM. The name of the model is Welsh and can best be translated as “Habitat” or “Place of Belonging”. For more details we refer to the publication by Snowden and Boone (2007). One could call it a form of situational leadership starting from the actual problem situation that an organization is confronted with and where decisions on approach need to be taken. However, it should not be confused with situational leadership as developed from the life cycle theory of leadership by Hersey and Blanchard (1969). The Cynefin model is more analytical than psychological. Like many other models, it shows four different situations that are being described in separate quadrants. The quadrants are often referred to as “domains”.

Figure 4 shows the overall model, indicating the four domains and the approach to take in each quadrant to come to a solution for that specific problem type.

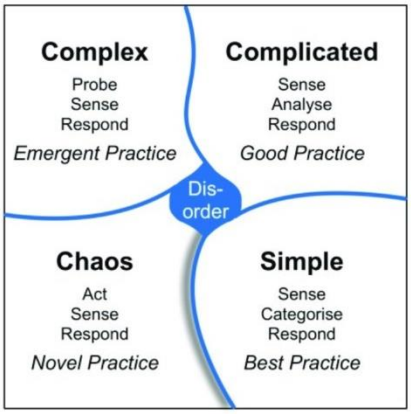

Figure 4: The Cynefin Model (Snowden and Boone, 2007)

This quadrant model deviates from other quadrant models in two ways:

- There is a fifth area and that is the Disorder area. This is the place you are when it is not yet clear what the situation really is. It is an area of decision towards an approach and it forms a link between the various quadrants.
- The model is not a classical 2 x 2 model. Typically, models of this type have two variables that can each be in two situations, hence the four resulting areas.

The Cynefin model actually reads from bottom right to top right to top left to bottom left in a series of situations of increased complexity for decision making. One could say however that the difference between right and left half is the difference between predictable and unpredictable and that has major consequences when linking quality management to it.

There is a whole list of areas where the Cynefin model has been introduced to support decision making. Just some examples: supply chain management (Naim et al, 2021; Alexander et al, 2014; Sawyer et al, 2020), software development (Lepmets et al, 2014; Lepmets et al.2017; Chan et al, 2014), safety and human error (Lukic et al, 2010; French et al, 2011), education and healthcare (Kruger, 2017; Gous, 2019; Fulop et al, 2013) but also in social studies on HIV/ AIDS (Burman et al, 2016), interaction between public and local government (Hasan et al, 2020) and even shifts in media business models (Risku et al, 2016). What we are adding

here is the projection of quality management methods onto the Cynefin model. This can help us understand the nature and specifics of front office service quality and give guidance for improvement activities.

When we follow the model, starting bottom right, we start at the “Simple” domain. This is the area where solutions (best practices) have been found and have been standardized in instructions or in Standard Operating Procedures (SOP) after initial problem solving. These could have come from a Lean study or from any other improvement and standardizing methodology. We know the problem and we know the solution but for some reason we did not stick to the prescribed best practice. In a truly quality minded organization we should rarely - if ever - encounter this situation. It shows a lack of discipline in always following the known best practice by everyone. Note: it is not because it should not happen that it does not happen in reality! If this is the area we are in, we should simply restore discipline and investigate why we deviated. In quality management terminology this is the area of standards, procedures and instructions.

The “Complicated” quadrant is different because we do not yet know the relation between cause(s) and effect. We need to analyse the problem and this is the area typically covered by classical quality management improvement methods, whether it is PDCA or the more complex Six Sigma: in the end we want to know the relationship between inputs and outputs and in that way control the situation and get rid of the problem. In many cases this influences both the position of a process and its variation. In the Cynefin model the key to the resolution of this problem area is analysis, which of course is also at the core of all RCA methods. The reason why we have no control today is because we don’t know the input / output relation but we are confident that such a relation exists (is knowable) and that we can find it. This problem situation belongs to the predictable world.

When we move to the top left quadrant we enter a totally different world, the world of “Complex” problems. This is the unpredictable world where there is no stable, analytical relation between input and output so the problem is not that we do not know the relation, the problem is that there is no fixed relation and that it is fundamentally unknowable. Within quality management Lloyd S. Nelson (Nashua Corporation) said that the most important figures that one needs for management are unknown and unknowable (Deming, 1986), but he was referring to things like employee satisfaction, motivation, customer happiness and so on. So it was a general statement not directed at a specific problem situation.

But this is exactly the situation you are in when dealing with face-to-face service processes. That is why, within the motivation of this research, this quadrant is of the utmost importance. Our current quality methods simply do not cover this area. The complexity of human interactions goes beyond the capabilities of analysing. We need a different approach to tackle this and the Cynefin model offers us a potential solution.

Before discussing ways to tackle complex problems, we want to point out some slightly different interpretations of complex problems. Van Breemen et al. (2018) identified some cause-effect relationships in the complex domain having insufficient actionable insight over them. They emphasized probing the cause from the different perspectives of the involved stakeholders and eventually readjusting habits or device new ones for people responses. Along a similar line of thought, Fulop et al. (2013) defined “retrospective coherence” to reflect that only when an event has already occurred, a possible cause-effect relationship can be detected.

However, because this is the domain of human interactions there may be an explanation afterwards and patterns can appear and experiments and experience can help to "see" these patterns but the cause – effect relationships are in no way comparable with what can be observed in the complicated domain. It means that the problem stays in the complex domain because of its nature and will never become totally predictable and will always contain an element of risk. It is therefore not strange to see that several articles related to Cynefin mention risk and risk reduction (Naim et al, 2021; Lukic et al, 2010; Lepmets et al, 2017).

Burman et al. (2016) move problems from the 'complex' to the 'complicated' area and even to the 'simple' one, after training and in depth study. However, this can only happen if the original appointing of domains was incorrect. The unpredictability of human interactions and people's responses make front office service de facto a complex environment to deal with, as defined in the Cynefin framework.

The last domain in Cynefin is the domain of chaos where immediate decisions and actions need to be taken and the subsequent consequences need to be evaluated. In this research chaos situations are not dealt with.

5. Improving Front End Service Quality

It is one thing to position a situation within the Cynefin complex domain, it is another to improve that situation. Often the actions to take are described in a rather general fashion. Lepmets et al. (2014) argue that "the complex domain presents the biggest challenge for process models" being "characterized by synergy of people, open-mindedness and innovativeness in problem solving, and goal internalization in decision-making, which process models do not cover" and goes on stressing that existing agile and process management methodologies are not suited to the complex Cynefin domain. Not only does this illustrate how difficult the complex domain is, but it also points out one of our motivations (see section 3) to apply Cynefin thinking to quality improvement of front office services. French et al. (2011) emphasize that managers are often asked to take decisions in the complex area by relying more on judgement and putting in place management processes to deal with behaviours more subtly than by "policing" against non compliance. This recognizes the inherent difficulty in dealing with complex problems but it does not indicate how this dealing with behaviours could work.

5.1. The Cynefin Approach to Complex Problems

As can be seen in figure 4, Snowden defines an approach for each quadrant. In the complex domain the approach is Probe – Sense – Respond (PSR). In section 4 we explained that in the complex area there is no cause – effect relationship and every case is a new case. In a frontline service situation, every next customer is a new customer with no relation to the previous one. So the first thing you need to do is to try and find out what this new customer is like. That is what is meant by "Probe". In different environments this can mean different things – like trying out a new product on a very small scale – but in front end service it will consist of listening and asking questions.

In section 4 we referred to the link with risk and risk management and this can be found back in the often used terminology of fail-safe experiments for describing the "probe" phase of the complex approach (see e.g. Lepmets et al., 2014). In other words we want to experiment on a small scale, knowing it may go wrong and making sure that if it goes wrong consequences are

not dramatical. On the other hand we need to get information out of the experiment so there is an inherent need for some risk taking.

The objective of probing is to be able to make sense of what the customer is thinking and feeling. So the logical next step is "Sense"; once you understand what is happening and what the customer problem really is, you can "Respond" in the proper way. One of the biggest mistakes made in these situations is to think you know what is going on without probing first. You then respond to what you think is meant – you assume - and the only result is that you upset the customer even more. Another major error made in direct interaction with customers is to think that you need to treat people the way you would want to be treated. Although this is accepted as a universal truth, it is fundamentally arrogant and clearly wrong. To be successful you need to treat a customer the way that customer wants to be treated. But to do that you have to understand that customer as quickly as possible through intelligent probing. This in itself shows the value of referring to the complex domain of the Cynefin model as guidance for improving front office service processes.

One additional note to be made here is that all of this needs to happen within certain boundaries. So we are not talking about giving in to everything a customer needs or wants. If a product is defective but out of warranty, the potential repair work will have to be paid. If an injection is necessary for a medical treatment, the patient may not like it but the injection will need to be given. These boundaries are just one element that makes the job of a front end service provider so difficult.

Because of the unpredictability of a complex situation, even when applying the PSR approach carefully, things may still go wrong. In fact, things will go wrong as this is an area where there cannot be a guarantee for success. However, within quality we obviously want to avoid mistakes as much as possible and take actions so that failures are minimized. This is again in line with fail-safe thinking as indicated earlier. To achieve that, we add two steps to the PSR approach to come to a quality approach to face-to-face service improvement.

5.2. The Quality Way to Front End Service Quality Improvement

When applying the Cynefin model to face-to-face services with the intent to improve the quality of service, we propose to adapt the approach for complex situations to suit our needs better. By adding two steps to the PSR method we increase our chances of success at the first encounter and prevent errors in future dealings with the same customer.

Before starting the probing, we add an observation step. Observing a customer carefully at the first encounter is of extreme importance. The way he looks (expression, walk, clothes, etc.) can tell us something about the person and the state he or she is in. We need to learn to see and interpret human behaviour. This step can help us to reduce errors in probing.

Equally important at the end of the first interaction is to add a step of remembering. Customers may be different but they tend to be rather stable in time, both in behaviour and preferences. Remembering this and showing that you remember will delight a customer at a next interaction occasion. But in order to remember you of course need to care enough to make the effort. It is worthwhile because it will make future interactions much more enjoyable for both parties.

As a result of adding these steps, we now get the following model approach: Observe – Probe – Sense – Respond – Remember (OPSRR). The task of a service organization is now to have this approach applied and embedded within the frontline service providers.

5.3. Implementing the Observe-Probe-Sense-Respond-Remember Methodology

At this point in time the OPSRR method is a theoretical model based on the approach to be taken in the complex quadrant of the Cynefin model. In section 6 we will propose future research aiming at implementing and proving the validity and value of the theory. Here we want to shortly describe how an organization could set steps to implement this with their face-to-face service personnel.

To introduce a new method you obviously need to explain that method to the people that will have to implement it. However, for this methodology to be useful a workshop type approach will be much more valuable than classroom training. Especially the first steps: observe and probe, are extremely important to increase the level of service. But together with the boundaries they are very specific for any service organization and the experience of the service providers is of the highest value.

In a group session successful approaches, how to avoid failures, things gone well, things gone wrong, etc. can be exchanged. Ideally specific mental scenarios can be developed, taking into account the applicable boundaries and leading to a maximum chance of positive interactions. This is not standardizing, because that is impossible given the situation, but providing guidelines and pathways to follow.

Hasan et al. (2020) used a workshop approach to link community involvement with local governments as a way to link the ordered world of government with the unordered voices of local citizens. Lepmets et al. (2017) point out the importance of looking at experiences and failures in other systems: “We advocate that medical device researchers and practitioners collaborate in providing data to an industry wide knowledge base where actual failures could inform the safety case development for new complex medical device systems.”

Note that all interactions can add value or lead to dissatisfaction, so in a hospital this is valid for the administrator at the info desk, for the person cleaning the room, for the people bringing food to the patient, for the nurses and the doctors. All levels are involved and all contribute to the overall quality experience of the patient.

6. Future Research

At this moment the approach described is a theoretical model. The authors will evaluate the practical application and test the validity and value of it in a next research step. This will be done in two ways. First of all workshops will be organized with quality facilitators of face-to-face service industries to see how they feel about the model. This will be accompanied by a survey to turn their judgement into workable numbers.

In a next step the method will be explained and applied in a specific service industry. In that research phase we are planning to use action research as the study method. It will involve observation and reporting but also survey results from the service providers and the customers.

When doing so we are aware of the risks related to Action Research (see also Hasan et al, 2020) of influencing the results by participating in the research itself. Therefor our focus will be on observing rather than interfering.

7. Conclusions

"A little patience, a kind word, a listening ear are more valuable to my well-being than the medication that I get". This is a quote from a terminally ill patient treated in a palliative care centre. It expresses exactly how important the smile of the nurse is and what personal service can do. So far, the quality management community has been absent from this area. By adapting the Cynefin approach for complex situations, we have developed a new way to handle face-to-face service quality improvements. Future research will look at validating this model in practice.

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