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# The Stumbling Stone method

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## Abstract

The Stumbling Stone method is a practical way of establishing a learning organisation. Mobilising employees bridges the gap between the legitimate system and the shadow system of the company. The method takes into account the view of the organisation as a complex adaptive system and provides means to link the legitimate system and the shadow system of the organisation thus tapping into the creativity resource of the employees.

## The background

In early 1990 Odense Steelshipyard contacted Kio A/S to discuss production quality. The background was that the Japanese competitors were ahead of Odense Steelshipyard with regard to productivity. Japanese shipyards had decided to improve productivity by 6 per cent per year in the years to come. Odense Steelshipyard then decided to increase by 8 per cent per year.

A close co-operation developed between Kio A/S and the quality department of Odense Steelshipyard during the following three years. The concept was developed by a team consisting of key persons in the quality department of Odense Steelshipyard and consultants from Kio A/S. The methods were partly inspired by Japanese methods, which the shipyard people had come to know about from visits to Japan, and partly by Danish methods of organisational development.

The initial work gave birth to a pilot project in the production department at Odense Steelshipyard, and during the next three years the project was implemented throughout the shipyard.

Since the implementation at Odense Steelshipyard the Stumbling Stone project has been implemented at Højgaard & Schultz General Contractors, at the Danish Railways, AO Johansen Distributors of Plumbing, Heating and Sanitary Products, at Mærsk Container Industry, at the Danisco Sugar Factories in Denmark, and in several other companies.

Our experience shows:

- that there is a lot of slack in most organisations, even the best managed;
- that people in general are very positive and enthusiastic as to minimising the slack and getting things done;
- that most people are very creative and want to use their creativity in solving the problems of the company; and
- that the results of the projects are proportional to the management quality: the more adequate management skills and attitudes, the better the result.

As mentioned the Stumbling Stone concept was born in Denmark in the light of a Scandinavian cultural background.

The best way to explain the Danish cultural background is by using Hofstede's parameters (Hofstede, 1991):

- *Power distance*: the degree to which employees with little power accept that power is unequally distributed.

- *Uncertainty avoidance*: the degree to which the organisation members feel threatened by unknown situations.

A high degree of uncertainty avoidance will often lead to a high degree of stress and to establishing rigorous rules, procedures and highly-structured situations.

Compared with most other measured countries Denmark is rated very low on power distance and also very low on uncertainty avoidance. Basically we are a soccer team: no one will automatically obey somebody, and we do not understand rules!

In comparison all countries with a Roman Catholic background are rated high on both power distance and need of structure.

Additionally Denmark scores high on feminine values (we go for life quality rather than competition), and we are moderately collective as opposed to being focused on individual success – much more collective than Americans, although less than many Far Eastern countries.

The point I wish to make clear is that even though the Stumbling Stone method works in Denmark, it may not be effective in every country.

## The principles

During the development stage at the shipyard our considerations resulted in the following major points:

### (1) *The principle of subjectivity*

Many quality projects encourage employees to give their suggestions for better product quality and rational procedures. Conversely we ask participants to contribute by telling us what they experience as hindrances to doing their job as well as they would prefer.

Our tacit presupposition is that everyone prefers to do a good job. Nobody is happy with working year after year only to produce poor quality. Everyone wants to be proud.

We also assume that reality is what people feel and experience. At least the reality that matters in organisations, when people work together. This is in accordance with the principle behind Kurt Lewin's force field analysis, not to mention quantum physics:

In quantum logic, it is impossible to expect any plan or idea to be real to employees if they do not have the opportunity to personally interact with it. Reality emerges from our

process of observation, from decisions we the observers make about what we will see. It does not exist independent of those activities. Therefore, we cannot talk people into reality because there truly is no reality to describe if they haven't been there. People can only become aware of the reality of the plan by interacting with it, by creating different possibilities through their personal processes of observation (Wheatley, 1992).

Most quality projects measure results by improved product quality. We do not. We see a result when the employee, who has experienced a hindrance, does not experience it any more. So throughout the process subjectivity constitutes the truth.

### (2) *The principle of simplicity*

It is our experience after more than 25 years in the consultancy business that many promising concepts have suffered from red tape. Too much paper and too much project structure (steering committees, task forces, project plans, etc.).

This will sometimes lead to muddled areas of responsibility, arguments with the line organisation and confused employees. So the leading question of our product development has been: "can this be obtained in a simpler way?"

Some important results are:

- no theoretical body or mandarin;
- no alternative organisation (or at least only a very very slim one);
- no copies, registers, control measures;
- lean procedures.

Consequently the employee feels safe and at home, and he has a good overall view of the activities and his own role.

### (3) *A consistent positive view of the nature of the employees*

Ever since McGregor's "Theory Y" was born in 1960 (McGregor, 1960) this point of view has been mentioned in management literature. However, it is not so common in operational management.

One may point out, that maybe McGregor is not right. However, there is abundant evidence that under certain conditions he is (Csikszentmihalyi, 1991).

Our view of human nature has an impact on that very nature. It will probably tend to function as a self-fulfilling prophecy. Hence, before starting a Stumbling Stone project we run management seminars. Here we aim at establishing a "no blame" culture thus reducing anxiety of employees to express themselves openly.

This is probably a basic control parameter for creativity in organisations (Stacey, 1996a).

(4) *The upper class language is the employee's language*

This principle means that we are introducing a minimum of scientific noise. The very words Stumbling Stone were suggested by an employee (the “giant mouse” a welder in section B9, now retired) at Odense Steelshipyard. We might as consultants have preferred the term “items for effectivity and quality improvement” (IEQIs!).

This point may seem ridiculously unimportant, but it is not! In our experience the differences in language symbolise – maybe unconsciously – the distance between the consultant and the employee. This in turn influences the difficulties in working together towards the same goal and in communicating clearly and closely.

(5) *Process orientation (as opposed to content or result orientation)*

The procedure and the consultant are not primarily focused on the result or the actual Stumbling Stones found and crushed. Rather the interest is in clarity in communication and positive energy in the project activities.

This may be obtained in several ways:

- The role of the consultant is both that of a teacher and that of a process consultant: “helping ‘clients’ to figure out the solution for themselves facilitating their own problem solving, even if that involves withholding what may seem to the consultant an obvious solution” (Schein, 1987). “The process model starts with the assumption that the organisation actually has the knowledge how to solve its...problems but that it often does not know how to use its own resources effectively” (Schein, 1988).

A similar point is made by Campbell *et al.* (1991), writing about co-evolving systems:

In any organization composed of interacting parts, for example individuals or departments, the process of change is determined not by one individual or another but by the interactive process between individuals. The direction of change can never be completely predictable, because the process of change is determined by the way feedback from one individual is experienced by another and is, in turn, fed back to the first. This mutual feed back process creates a

“system” of its participants, and the direction in which this system may move is determined by the unique interactive process occurring among these components, at this particular time.... An important characteristic of Development Consultation is that the consultant shows a “respectful curiosity” as he seeks to understand the client’s organizational culture and behaviour. This respectful curiosity is a key to facilitating change (Campbell *et al.*, 1991).

This is in harmony with the view of Peter Senge that systemic thinking is a vital part of the process of the learning organisation. Also Campbell *et al.* (1994) explain:

ideas, policies, and programmes become meaningful and useful only when there are opportunities for interaction between those holding the ‘corporate intent’ and those with the ‘local experience’ who are responsible for their implementation”.

- Consultants signal through all their actions – their cars and their clothes – that they are helpers more than authority: mirroring, matching, listening and challenging.
- The consultant is paying meticulous attention to the participants’ viewpoints and contributions thus positively reinforcing positive involvement.

As mentioned it is the persistent and consistent integration of these elements that ensures success in Danish companies.

As can be seen the Stumbling Stone method contains elements resembling the TQM method (Hakes, 1991).

These are:

- focus on internal supplier-customer relations;
- focus on leadership establishing a “no blame” culture, open communication and teamwork;
- focus on training and involving the employees.

However, there are crucial differences. These consist mainly in what is not in the Stumbling Stone concept:

- no theoretical body or mandarin;
- no six-stage implementation planning divorced from action;
- no consultant analysis of critical business processes;
- no philosophy of “finding the root cause” instead of “firefighting”;
- no systematic measurement of progress;

- no benchmarking analysis;
- a very lean, initial diagnosis only to evaluate whether the organisation will benefit from the activity and to work out the proposal.

These points bring the Stumbling Stone method much closer to concepts derived from other disciplines like chaos theory: the assumption is that the organisation is not a complicated Newtonian machine, but rather that it is always on the brink of chaos:

Physical, chemical, biological, and computer-simulated feedback networks are all creative – able to learn in complex ways – only when they operate at the edge of system disintegration, in a kind of phase transition between a stable zone of operation and an unstable or disordered regime.... But at the edge of such disintegration we are able to contain the anxiety provoked by complex learning. Then we are able to question the fundamental assumptions we are making about our world and engage in true dialogue, beginning an exciting journey of discovery.... The creative process in human systems, therefore, is inevitably messy (Stacey, 1996).

Consequently it has been a vital point to give room for and have confidence in the group processes and the diagnosis and solutions created at ground level. This openness is the necessary condition for the life of self-organising systems in the organisation.

Also other scientific areas can contribute to a better understanding of how to handle learning in organisations:

The concept of dissipative structures was originally coined by the chemist Illya Prigogine:

In a dissipative structure, things in the environment that disturb the system's equilibrium play a crucial role in creating new forms of order. As the environment becomes more complex, generating new and different information, it provokes the system into a response. New information enters the system as a small fluctuation that varies from the norm. If the system pays attention to this fluctuation, the information grows in strength as it interacts with the system and is fed back on itself (a process of autocatalysis). Finally, the information grows to such a level of disturbance that the system can no longer ignore it. At this point, jarred by so much internal disturbance and far from equilibrium, the system in its current form falls apart. But this disintegration does not signal the death of the system. In most cases the system can reconfigure itself at a higher level of complexity, one better able to deal with the new environment. Dissipative structures demonstrate that disorder can be a source of order, and that growth is found in disequilibrium, not in balance. The things we fear most in organisations – fluctuations, disturbances, imbalances – need not be signs of an impending disorder that

will destroy us. Instead, fluctuations are the primary source of creativity (Stacey, 1996).

Field theory developed in the years before quantum physics is an attempt to explain action-at-a-distance. Newton introduced the first field, gravitation:

In relativity theory, gravity acts to structure space. The reason objects are drawn to earth is because space-time curves in response to matter. Rather than a force, gravity is understood as a medium, an invisible geometry of space (Wheatley, 1992).

The concept of field is adopted by biology:

Morphogenic fields are built up through the accumulated behaviors of species' members. After part of the species has learned a behavior, such as bicycle riding, others will find it easier to learn that skill. The form resides in the morphogenic field, and when individual energy combines with it, it patterns behavior without the need for laborious learning of the skill. These fields provide a quality of form that can be taken up by the energy of the receiver.

Any mature ecosystem experiences many changes and fluctuations at the level of individuals and species. But the total system remains stable, capable of developing its own rhythm of growth and lessening the impact on the system of such outside disturbances as climatic change. Small, local disturbances are not suppressed; there is no central command control that prohibits small, constant changes. The system allows for many levels of autonomy within itself, and for small fluctuations and changes. By tolerating these, it is able to preserve its global stability and integrity in the environment ... the more freedom in self-organization, the more order (Wheatley, 1992).

Also management might benefit from the field concept:

Organizational space can be filled with the invisible geometry of fields. Fields, being everywhere at once, can connect discrete and distant actions. Fields, because they can influence behavior, can cohere and organize separate events.

In many ways, we already know what powerful organizers fields can be. We have moved deeper into a field view of reality by our recent focus on culture, vision, and values as the means for managing organizations. We know that this works, even when we don't know how to do it well. Robert Haas, CEO of Levi Strauss & Co., calls this phenomenon "conceptual controls.... It's the ideas of a business that are controlling, not some manager with authority". If we think of ideas as fields, I believe we have a better metaphor for understanding why concepts control as well as they do. But it changes the nature of our attention. In a field view of organizations, clarity about values or vision is important, but it's only half the task. Creating the field through the dissemination of those

ideas is essential. The field must reach all corners of the organization, involve everyone, and be available everywhere (Wheatley, 1992).

So once again we are back on shopfloor and communication processes:

Field creation is not just a task for senior managers. Every employee has energy to contribute; in a field-filled space, there are no unimportant players. Sheldrake's morphogenic fields grow and develop form because of what is occurring at the level of the individual who is acquiring new skills and knowledge. These fields change their content and shape because of individual activity. This is similar to the insights of organizational consultant Peter Senge, who believes that an organization's vision grows as a by-product of individual visions, a by-product of ongoing conversations (Wheatley, 1992).

The Stumbling Stone method is one way to create a simple framework of vision, values, concepts, and tools that can function as a field, giving room for the employees' and teams' creativity, allowing and encouraging their unpredictability within the frames.

The Stumbling Stone method is not a "saviour" recipe. A saviour recipe reduces the anxiety of managers, and does not work in a complex non-linear world.

The Stumbling Stone method does not reduce anxiety which is creative and energizing – and uncomfortable – but it may work if it is carefully introduced and adjusted.

Ralph D. Stacey in his book *Strategic Management and Organisational Dynamics* (Stacey, 1996b) stresses the features of organisations as complex adaptive systems. He finds that to establish links between the legitimate system of an organisation and the shadow system – which consists of the informal organisation containing among other things political processes, uncontrolled conversations pro or contra official management, creativity etc., in short a self-organising process where people empower themselves – teams have to:

- (1) *Have freedom to operate* – meaning that normal hierarchy is suspended for most of the time.
- (2) *Discover own challenges, goals and objectives* – meaning that top management should not write terms of reference, set objectives or prod the group to reach some predetermined view.
- (3) *Have a membership drawn from a number of different functions, units and levels* – which is a common think-tank principle also claimed by Simon Majaro in *The Creative Gap* (1988).

As will be seen in the following description, the Stumbling Stone method is in accordance with the two first principles, not the third.

Nevertheless I think that the Stumbling Stone method draws well on the powerful resources of the creative shadow system of the organisation.

## The goal

The aim of the Stumbling Stone project is to involve the employee in a systematic reduction or removal of hindrances or barriers to quality and productivity in daily work.

The project will reduce the quality costs of the company: inspection, control, fault finding, correction, etc. But also the human costs: stress, irritation, frustration from doing a mediocre piece of work.

This goal implies:

- establishing new and more effective procedures in the working situation;
- the learning of creativity and innovation techniques and acquiring the increased tendency to use them individually and in teams, slowly changing the roles of the supervisors and employees, the latter taking gradually more responsibility and initiative, and the former becoming more consultative, less directive.

## The method

The project is divided into three phases:

- (1) Opening the dialogue.
- (2) Educating and launching.
- (3) Integrating and growing.

### Opening the dialogue

In this phase the corporate culture and the goals for productivity and quality are assessed. The employees and the management of the company are informed and motivated to participate in the process. The project is planned in co-operation with employees, shop stewards, and management. A number of employees are encouraged to participate in a special role in the project. This group of employees is called ambassadors or mediators.

### Educating and launching

In this phase all employees of the company, division or department are informed in detail of the project phases and their own role.

They are encouraged to:

- hunt Stumbling Stones;

- openly express their opinions;
- listen to the problems and points of view of others;
- contribute to the crushing or removal of the Stones;
- fill in Stumbling Stone cards.

After this follow three separate training days (“meetings”) for the ambassadors or mediators. At the first meeting the participants go through the principles and the steps of the method. And they identify together with their colleagues the first Stumbling Stones in their department. At the second meeting the mediators are trained in creativity techniques and problem solving. They discuss norms for the internal customer/supplier relations and look into the quality philosophy and the quality cost problems. Three to five employees are selected for the innovation team. This team always has a supervisor as a member. One innovation team is created per 50-100 employees.

At the third meeting – in the tenth week of the project – the department’s results and experiences are discussed. Difficulties encountered on the way are brought forth and discussed, and based on this the future of the project is now adjusted so that it can be integrated in procedures of the daily work.

### Integrating and growing

The innovation teams are primarily support teams. They register the Stumbling Stones, establish “crushing teams” and make sure the Stones are crushed or removed within negotiated deadlines.

The “crushing teams” are *ad hoc* groups which in practice solve the problems. Each group consists of the person who experiences a certain hindrance or barrier and his or her immediate superior. Experts on particular problem areas can be called on.

A crushing team is dissolved when the person who has experienced a hindrance literally signs that the hindrance is no longer experienced.

The solution to the problem is registered on the Stumbling Stone card and filed in case the problem or the Stone should reappear.

### Practicalities

At least 25 per cent of the company’s employees are directly involved in the training for ambassadors. The optimum is, of course, that every employee becomes an ambassador. A standard project timetable can be seen in Table I.

Table I A standard Stumbling Stone project

Week	Activity	Participants	Time
0	Introduction meeting	All employees from the department	One hour
1	First meeting	24 ambassadors	One day
2	Second meeting	Same as first meeting	One day
3	Crushing teams start up	Three to five employees from the department and a supervisor	Six hours
3-9	The crushing teams are at work	Innovation-teams meet crushing teams work	One hour per week <i>ad hoc</i>
10	Third meeting	Same as first and second meetings	One day

After week ten the department has learned the method, tried it in practice and quite a few of the employees are or have been engaged in problem finding and problem solving. The project now continues with no more formal meetings, but continuous attention from management and consultants is of course vital.

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