Gaining Systemic Insight

By Shawn Cunningham and Marcus Jenal

Our growing awareness of the complexity in the economy and its relevance for economic development can have paralysing effects on our work. Recent advances in monitoring and evaluation show that traditional approaches have not been effective in terms of achieving substantial large scale change. Still, the basic paradigm behind our approaches has not changed. In this paper, we are introducing an approach that we use in our work in economic development. The approach is called the Systemic Insight Approach and is based on the principles and ideas around intervening in complex systems. It embraces the new paradigm of complex adaptive systems.

To explain the Systemic Insight Approach, we use the metaphor of a spiral. The spiral is helpful to illustrate the progression of project planning, implementation, and monitoring. An initiative emanates from a central point, getting progressively farther away as it revolves around the point (Figure 1). Translated into the dynamics in a project, this means that understanding of the situation increases. A spiral also signals iteration, with planning (or response) going more and more into details as the dynamics of the system are revealed and better understood.

Figure 1: The Spiral

The spiral can be seen as several, iterative loops where each loop builds on the learning and experience of the previous one, with the ultimate aim to make sense of the situation by the involved stakeholders and with that the effectiveness of the project interventions. While the growing radius of the loops signifies growing knowledge and understanding, the duration of the loops is not necessarily growing. Quite on the contrary, the time to go around one loop can considerably differ for each iteration.

We would like to de-emphasise the sequence in the spiral and want to emphasize the logic proposed by the spiral. The sequence we propose is merely a way to explain our logic, as language in itself is built in a sequential way. In systems, however, many things happen at the same time and, thus, our work needs to adapt and happen in sequential, parallel, or iterative ways. Activities in a complex system cannot follow a predetermined sequence but need to answer to the dynamics of the context. Flexibility is needed to adapt every phase to the realities in and around the project.

Keeping this need for flexibility in mind, the Systemic Insight Approach proposes five phases: hypothesis, analysis, sensemaking, strategy, and intervention. Additionally, learning and adjusting are integrating elements throughout all phases. We chose the word "phase" to highlight that these different points in the spiral signify a change of focus, perhaps a change of intensity or perhaps a different mode of working, in contrast to a sequence of distinct steps.

We are writing this paper from the perspective of a facilitator that engages with actors to change a system.

Hypothesis

The intention of this phase is twofold:

- **Capture assumptions formed in the past:** At the outset of our exploration it is necessary to record the past assumptions of influential actors in the system that have lead up to preceding initiatives and that are the reason for our current involvement. This also includes assumptions that informed past and current key strategies of these influential actors in the system. These assumptions made in the past strongly influence the boundaries of our exploration.
- **Re-formulate hypotheses based on expectations and new information:** Throughout our work with the system it is necessary to understand and capture the various expectations of actors, the new information found, and the drivers of behaviour as hypotheses rather than facts. It is critical to ensure that new information is not treated as facts until verified. This also assists the team to identify contradicting information.

Hypothesis formulation is an important phase as it sensitises the team conducting the diagnosis, the supporting organisations and possibly key influencers to their own bias and perspective. This includes not only the perspective of what drives the behaviour of the system, but also of the team's own preferences in terms of how data and findings should be interpreted.

The formulation of the hypothesis is the basis for the team to formulate research questions intended to verify or validating the hypotheses. We have found that initially, diagnostic teams formulate hypotheses that are generalised or sweeping statements, for example *"there are no small enterprises benefiting from the foreign tourists visiting this region".* In the case of this hypothesis the first small enterprise found to be benefitting from the tourists requires that the team adjusts the hypothesis.

How to help a team formulate a hypothesis? Questions to be asked can include:

- What is our understanding of the current situation?
- What is our motivation to understand the system and to intervene?
- What is the kind of change we want to see in the system?
- What are the values that filter how we interpret what we see?
- Where do we expect that change can happen easily, where do we expect resistance?
- Who are the early adopters or pioneers that will respond first, and who is most likely resisting what we find and propose?
- What could be possible mechanisms to instigate change?
- What are the boundaries within which we expect the project to be able to initiate change? What is its sphere of influence?
- How can we measure the change we expect? How will we know if our interventions have been successful?

At first, the team that is involved in the change initiative can answer these questions. Later, these questions can be answered from various perspectives of other stakeholders. Giving an insight into their motivation and their receptiveness to change. Understanding the different perspectives of predominant stakeholders is crucial in developing appropriate strategies for change.

It is not the aim of this phase to define an idealised future state of the system and develop a potential path of change that starts with a project's interventions to reach that stage. There is also no need of alignment of perspectives within the team. On the contrary, to find a diversity of views on the situation is beneficial as it potentially leads to a greater variation in the design of interventions. Hence, there is no single hypothesis, no single and neatly packed theory of change that needs to be developed during this step. This needs, however, also the understanding of the team that no perspective is the 'right' perspective and that different interpretations of the situation can be legitimate and valuable. The team needs to find a way to handle divergent perspectives in a constructive way.

As a hypothesis can only be true or false, findings during the other phases of the process will help to re-formulate the hypotheses. Hypothesis formulation, hence, is a continuous process.

Analysis

Under the set of activities that we describe as being analytical, it is important for us to state that analysis is not necessarily a step or phase, but part of an on-going sensing of what is going on in a particular system. However, in the beginning of a change initiative, we have to do some up-front analysis. We have to start focusing on the actors, follow leads, investigate opportunities and constraints, and collecting data that may reveal the dynamics in the system. We believe in an approach, where several analytical instruments are used in sequence or in parallel. However, it is important for us to recognise that we are working within a system and that all the different analytical instruments inform about a particular system from different perspectives, but can never cover the whole system. There will always be a certain information deficit that we will have to live with by remaining vigilant and adaptable in our planning and action.

In complex systems, it is essential to have an idea about interrelations between people and the influence of different perspectives. We also need to make boundary assumptions explicit as they strongly influence where we expect change to happen. Tools such as the Social Network Analysis or Causal Loop Analysis can help to recognise patterns and dynamics. Tools like the Soft Systems Methodology and can help to reflect upon perspectives.

However, many analytical instruments that are used in economic development can equally be applied here. Some popular tools include value chain analysis, sub-sector analysis, or cluster analysis. Several standalone tools such as Porter's 5 forces, Porter's Diamond, interaction analysis, transaction cost analysis or even a simple Strengths Weakness Opportunities and Threat (SWOT) analysis can be used during this phase. Software tools can help to make sense of large numbers of narratives.

Tools that focus on specific issues in market systems like innovation and competitiveness are for example the Rapid Appraisal of Local Innovation Systems (RALIS), and the Participatory Appraisal of Competitive Advantage (PACA). With the Value Chain Analysis, one can map various aspects of a product's value chain. Most value chain maps focus on transactional or contractual relations. There is, however, a danger with value chain analyses that they draw the boundary of the analytical focus too narrowly on the flow of product between the actors. The analysis needs to include interconnections with other market systems as well as with the regulatory and social systems.

The results of the analysis includes a range of data, facts and figures, results from interviews and workshops, qualitative information such as the opinions of key actors, physical evidence and even the subjective assessments and the gained tacit knowledge of the research team.

While some of the analysis yields data, other instruments already allow the team to formulate a specific hypothesis based on the results of a certain kind of analysis. However, in our experience, it is often difficult to form a picture of what exactly is going on. Therefore an additional step is required.

Sensemaking

In the preceding phase we analysed the system and its elements using a variety of different analytical instruments. It can be expected that certain analytical instruments already gave us a clearer picture of trends, behaviours and certain drivers of change. However, we found that conventional analysis does not guarantee that the results are well understood. Indeed, analytical approaches often focus on individual parts of the system and ignore the interaction of the parts and the emerging whole. Optimising the parts of the system, however, can lead to a lower performance of the whole. What is good for the system may not always be good for all the elements and vice versa. It is necessary to make a dedicated effort to make sense of the relations between elements and the system and the interactions the elements.

The facts, figures and findings gathered through analysis do not tell us enough about the hidden truths of the system and the reinforcing and balancing feedback loops that keep the system resilient.

Some of the guiding questions:

- What is really going on here?
- What are the dominant patterns that can be seen?
- What seems to be causing or reinforcing behaviour?
- What seems to be resisting change?
- Who are the people that are experimenting with new ideas, and who are the influencers that spread ideas in the system?
- Where can we see contradicting information and behaviour? How can outliers be interpreted?
- What are the assumptions in the past that shaped the current priorities and structure of the system?

In this step it is necessary to stand back from our favoured target groups, our hypothesis, preferred interventions and our own interpretation of our analysis. In fact, it may even be necessary to question our own findings.

The deliberation of the deeper forces working in the system might necessitate additional analysis. For example, we may realise that we drew our conceptual boundaries around our system to narrow or too wide, resulting in some additional interviews or analysis. Or we may realise that it seems like a certain pattern emerged, but we cannot understand what triggered it and what the broader impact of the pattern is.

A deeper appreciation of the system helps to formulate where change may be needed, what will support and resist this change and how it can be measured. It helps us to understand whether the stated purpose of the system, or the commonly held values are authentic and whether it really drives the behaviour of the system.

Strategy

The goal of the strategy phase is to develop a coherent response to what we found and what we want to achieve. The response takes the form of a variety of purposeful interventions.

Hence, the strategy development needs to involve or the strategy needs to be acceptable to key actors. Furthermore, we need to differentiate between our own intervention strategy and the strategies of others like the government, institutions, or firms we interact with. The intention of our strategy is to give the organisations that we are working with a sense of direction. The Systemic Insight Approach recognises that we cannot predict the future in a complex adaptive system. It, hence, concentrates on changing the evolutionary path of the system through managing the present. In a traditional approach to strategy, an idealised future state is developed. The gap between the current situation and the future state is then believed to be closed by implementing a detailed plan.

In our economic development initiatives, we are facing different kinds of problems that require different strategies. It is essential to break a situation into problems that are simple, complicated, or complex. There are several frameworks that help us decide what type of problems we are facing. Simple problems can be quickly resolved by using best practice. For the complicated issues, detailed analysis or expert knowledge can propose feasible solutions.

The following heuristic can be helpful when facing complex situations:

- *Know the context*: be aware of the various interrelationships, perspectives, and boundaries that influence your ability to influence the system; understand some of the dynamics allowing you to anticipate where change is probable and where it is not.
- *Act in the context*: do not prescribe solutions from top-down or from outside the system; the best adapted and most sustainable solutions evolve in the context.
- *Facilitate change*: tread lightly, be the guide of a dynamic process, in which the stakeholders in the system work together to learn and come up with locally adapted solutions.
- *Learn and adapt*: be flexible and continuously adapt your strategy and action to new learning; build a monitoring system that gives you quick feedback on the results of your interventions.

Intervention

In this phase, the purposeful interventions are developed, implemented and the effects observed. Complex situations are marked by a high degree of uncertainty about how the situation can evolve over time and what forces are predominantly shaping the system. No single actor in the system has the capacity to solve the problem. Coordinated action is needed. There are different ways to intervene in complex situations. We propose three types of intervention:

- *Incremental*: Incremental interventions start a process to change behaviour of actors in the system. In order to do that, we use resources we have control over and we implement activities that are visible or easy to communicate. The activities should start soon. These interventions are also called quick wins.
- *Catalytic*: Catalytically interventions change the constraints in the system and, thus, potentially have large-scale impact. These types of interventions need bigger budgets and take longer time. They require a project structure and management.
- *Experimental*: experimental interventions lay the basis for an evolutionary intervention design. Experiments can lead to a better understanding of what works and inform the selection and adaptation of successful interventions. In that way, intervention strategies can evolve over time based on adaptation and selection in

the real world. This approach can also help to test various diverging hypotheses within the team or the larger group of stakeholders. Experiments need to be designed in a way so they can fail safely, i.e. without risking the health of the whole project. Hence, they need to be small, but still large enough to have a meaningful effect.

In situations where it is not feasible to achieve change, a *graceful exit* is advisable. If we see that we cannot change anything in the strategy of the organisations we work with, we should exit gracefully in order to avoid complete failure of our initiative.

The intervention phase looks different in different iterations of the growing path around the spiral. It will most likely start with the implementation of the solutions for simple and complicated problems. After that, the small experimental pilot interventions for the problems in the complex domain can be implemented. Incremental interventions can also be started very early on in the process. When knowledge and understanding is growing, interventions can become more substantial and more targeted towards achieving large scale change in the wider system. This is when catalytic interventions can be implemented. The advice here is that you should never implement at large scale what you do not fully understand.

Successful interventions in complex systems are often very simple. As facilitators, our need to understand the complexity behind a system should result in simpler interventions. Interventions should be so simple that stakeholders can describe them in a few sentences. A clearly formulated and simple intervention should be prioritised over a complicated intervention that requires the coordination and alignment of a wide range of stakeholders. Furthermore, instead of trying to fix all problems it is advisable to focus on strengthening interaction and clarifying purpose in the system, rather than trying to improve or change the elements or the actors.

Learning & Adjusting

Learning & Adjusting is not a phase, but a continuous mode of operation. Learning provides the insights that lead the initiative from one phase to another. Learning and continuous adjustments happen in every phase. In the hypothesis phase, the different stakeholders can learn about different perspectives in the system and assumptions that are made explicit by their peers. In the analysis phase, learning can be based on the findings of the different analyses. In the sensemaking phase, learning happens through making sense of all the different data we have gathered and experiences we have gained. In the strategy phase, learning helps to evolve the planning and intervention strategy. As complex systems cannot be understood by analysing them but only when interacting with them, the intervention phase is the most important phase to learn about how the system works. Short learning loops need to lead to immediate adjustment in every phase and it will also guide what phase should get how much attention in any given moment. Learning is the glue that brings all the phases and generated knowledge together (red lines in Figure 2).

At any point in time, we need to ask the question who is adapting and who is learning. Very often development programmes are focused on their own adaptation and learning and the chosen indicators often measure programmatic activities and not the vitality of the system. Ideally, also the system actors need to be able to learn and adapt and with that increase the resilience of the system.

In order for learning to happen, particularly in the intervention phase, an effective monitoring framework needs to be in place.

For interventions targeting simple or complicated problems, an outcome based monitoring system can be used to show that the interventions actually worked in the predicted way. For the complex domain, monitoring phases of change are crucial to be able to assess the patterns emerging as a reaction to the purposeful interventions. The earlier these patterns can be identified, the earlier the project can react and adjust. This means discard interventions that did not work or led to negative reactions, adapt interventions that show promising results in order to strengthen them, and reinforce interventions that lead to the intended change.
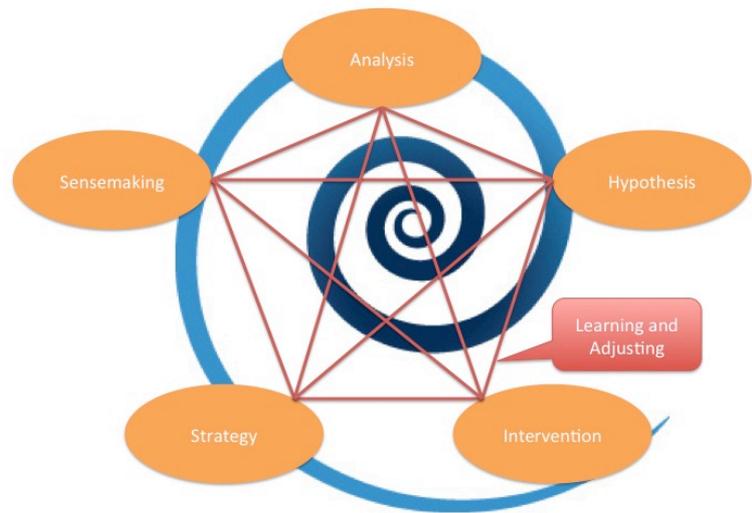

Figure 2: The five phases are connected in the spiral, but also through learning (red lines), guiding what phase should get how much attention in any given moment.

To assess an experiment's success, we need to define areas where change is expected and develop tools of how this change can be measured. In each area, indicators of change can be defined. Additional to the indicators, tools to capture observation such as changes in behaviours of the actors can be employed. In particular changes in attitude can be assessed through narrative approaches.

In order to remain agile, the results of monitoring have to lead through quick feedback loops to learning and adjusting. It is imperative that a culture of collaborative learning is established within the involved actors. Observations, experiences, ideas, etc. need to be shared freely.

Additional comments

The intervention team needs to figure out how to value different perspectives. There are at all times our own view as facilitators, the view of counterparts or the organisation that we work with, and the view of key influencers in the system. Even in cases where there is an expressed shared perspective and common values, there will be important differences in priorities, interpretation and actual behaviour of the different actors.

The Systemic Insight approach also requires creativity in responding to the context. The facilitator must be creative in drawing heterogeneous stakeholders into the diagnosis and the strategy. Not all stakeholders will understand or appreciate the necessity to draw in dissenting views and contrary ideas, as stakeholders often value conformity and coordination more than the need for experimentation and alternative approaches.

We understand that our proposed approach will be at odds with standardised project cycle management methodologies applied by donors and development organisations and needs to be adapted accordingly, ideally without losing its agility.