BEAM EXCHANGE

Rethinking systemic change:
economic evolution and institutions

Discussion paper

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1. Introduction

The primary aim of this research project was to find a conceptually sound definition of systemic change. To do so, it was essential to gain a better understanding of how economies change. The central part of the research work, therefore, was an extended literature review on three bodies of knowledge: evolutionary economics, new institutional economics and complexity theory. There is a growing interest in these bodies of knowledge, combined often called New Economic Thinking, and how they affect economic development. Hence, while rethinking systemic change, this work also contributes to answering the broader question of how market systems approaches can contribute to inclusive economic development. The answer, in short, is to **shift the focus away from improving transactions at the micro level towards enabling actors to continuously shape an institutional landscape that supports inclusive economic evolution**.

During the research, several interactions with market systems development practitioners were organised. The aim was to share preliminary insights and integrate their perspectives and experiences on economic change. This interaction proved valuable to validate research objectives and the relevance of preliminary findings. More discussion and engagement with practitioners is needed to translate the findings into good practice for programme implementation.

In a nutshell, our main insights are threefold. Firstly, economies are evolving systems, building on the mechanisms of variety creation, selection and amplification. Secondly, both, current economic performance, including aspects like the inclusiveness of growth, and economic evolution, are shaped by the ability of a society to explore different options for institutional arrangements and adjust them over time. Thirdly, this process of evolution is complex. While some aspects can be designed and managed, others need to be explored through a process of learning and adjustment.

Based on these insights, the concept of systemic change needs to be rethought. But first and foremost, it is not systemic change per se that market systems approaches are looking for. Systems continuously change also without external interventions. **Rather than seeking to 'make' change happen, the aim of market systems approaches ought to be to enhance the evolutionary process in an economy and create access for all levels of the society to contribute to and shape this process.**

Economic change should be driven by an endogenous motivation to explore what is possible. Preferences on how resources and power should be allocated need to emerge through local social and political processes shaped by formal and informal institutions. Normative ideals brought in by actors from the outside can play a role, but relying on them to push an economy into some better future state does not work. Evolution does not make big jumps but is incremental. Engaging in an evolutionary process always starts from an understanding of where the society is now and how it got here, not from where it ought to be in the future. The challenge is that in many developing contexts, the abilities to come up with ideas and drive a change process are limited.

This discussion paper briefly presents the key messages from the literature review and seven principles drawing from this literature. The principles can be used by market development practitioners, including technical advisers in donor organisations, programme designers and team leaders, to shape programmes and become more in line with how change happens in the economy. A list of selected references is presented at the end. A technical paper that is published separately contains a much more detailed discussion of the findings and the principles and an extensive list of references.

2. Economic change as evolutionary process

Evolution is a general-purpose and highly powerful recipe for finding innovative solutions to complex problems. In the economy, the purpose of this process is to cater to human needs and preferences and create wealth. The evolutionary process of creating variety, selecting fit designs and amplifying them is continuously repeated at different levels within an economy.

Through competition, markets provide incentives to try new things and create variety. They are a selection mechanism to determine the most fit ideas. Good ideas are amplified by shifting resources from unfit to fit designs. This process repeats both within and between all kinds of organisations, wherever alternative ideas and options compete for acceptance.

In contrast to biological evaluation, the fitness function that determines what is selected as fit in an economy is thereby an emergent property of the society. It is not something that is given by a neutral environment, nor is it mandated by some sort of central power. It is shaped by the collection of beliefs, perceptions, culture, history, available knowledge and formal and informal institutional arrangements in a society. Elements of it are intentionally influenced in political and social processes, in which political power plays an important role. For instance, a political process can lead to policies that favour more environmentally friendly businesses, making them fitter in the economy.

The economy evolves through a co-evolution of physical and social technologies as well as business plans. While variety is created in all three of these domains, business plans are what is eventually put to the test of selection in markets in the real world.

Physical technologies are methods and processes for transforming matter, energy and information from one state into another in pursuit of a goal or goals; they enable people to create products and services that are worth trading. A physical technology is not only the physical object itself, but both the design for the thing and the instructions and techniques to make and use it.

Social technologies are methods, designs and arrangements for organising people in pursuit of a goal or goals; they smooth the way for cooperation and trading of products and services. For example, the ability to organise people into hierarchies, such as companies or other organisations, is a social technology. As part of social technologies, formal and informal institutions in a society play a central role in enabling and shaping human interaction and economic evolution.

Business plans or business strategies are developed by enterprises and other organisations that are competing for resources, acceptance and buy-in in the economy. Business plans play the critical role of melding physical and social technologies together under a strategy and then operationally expressing the resulting design in the real world. From an evolutionary perspective, the purpose of business plans is to discover what is profitable, efficient or even possible in a given economic context.

Amplification of selected business models occurs as selected models are rewarded with more resources and are widely copied by others. For the evolutionary process to work, it is essential that entrepreneurs and a wide range of social actors have an interest and incentive to discover and learn individually and collectively what is possible. Besides fuelling the evolutionary process, the variety that is created through this process of self-discovery also creates resilience. This is an important insight for both local development actors as well as market development programmes. In general, local and international development practitioners are eager to find efficient and carefully designed solutions to pervasive problems. It is more challenging, though more systemic, to engage in a continuous process of self-discovery that may be ambiguous and harder to manage.

3. Institutions provide structure to human interaction

Humans have an inherent tendency to reduce uncertainty by structuring their environment. Uncertainty is reduced by creating behavioural constraints, for example rules and norms, that allow people to expect a certain behaviour from others. Over time, these constraints accumulate and an elaborate structure of informal and formal institutions emerges. Institutions constitute 'the rules of the game' both on a level of personal interactions but also on the level of interactions among organisations, firms, and the government.

Common institutional arrangements include constitutions, laws and rules that govern politics, government, finance, and society more broadly; written rules and agreements that govern contractual relations and corporate governance; and unwritten codes of conduct, norms of behaviour, and beliefs.

At the same time as reducing uncertainties for actors, the institutional structure determines how the economic environment is shaped. For example, institutional structures could incentivise specific ways of how companies are organised or how they reward their workforce. Institutions also reduce transaction costs and create positive externalities, for example through the coordination of available knowledge in a society, which allows the specialisation of production. The institutional structure effectively determines whether an economy is performing well or not and how adaptive it is to future challenges.

One such institution is the market. Markets are places where multiple exchanges happen in parallel with multiple buyers and multiple sellers and a degree of competition. Markets are regulated and shaped by laws and regulations as well as local customs and norms.
Simple forms of markets can exist without formal institutions, where trust in personal transactions is mainly secured through social relations. More formal institutions, however, also allow people who do not know each other, to transact independent of social status, proximity or other informal enforcement mechanisms. This impersonal exchange depends on a range of institutions that protect the rights of suppliers and buyers. Societies that have these institutions missing are limited in the sophistication of transactions that can take place.

Some of the institutions enabling more sophisticated impersonal transactions in markets can be classified as 'market supporting', such as contract enforcement laws. There are, however, many others that may not be directly related to markets, yet are critical. For instance, basic education enables people to read and write and thus enter contractual relationships.

Institutions continuously evolve based on how actors who are able to gain influence make sense of their perceived reality. Institutional change is shaped by how these actors evaluate institutional performance and the subsequent intention to adapt the institutions to optimise economic outcomes. It is consequently an inherently local process – it is much more difficult to impose institutional change from the outside. Societies can borrow selected principles, but the effectiveness of such borrowing is often limited due to aspects like differences in culture.

Hence, the culture in a society plays a critical role in determining both the effectiveness of market-based forms of exchange and the potential for economic development in general. A society's disposition to change, shaped by its history and culture, strongly influences what is possible. The ability to trust other players to keep their promises, for example, is one of the key factors associated with well-functioning markets. Trust can be achieved either through a social network of relationships, or through institutions that exist to enforce promises (or contracts), such as a functioning legal system.

4. Complexity and social change

Complexity and dynamics in complex systems build an important link between the evolution of the economy and institutional change. They provide a powerful way of describing evolutionary dynamics and dynamics of emergent institutional structures. They also offer a means to describe dynamics in beliefs, attitudes and perceptions of actors that shape these institutions. The science and practice of complexity suggest important ways of engaging in and shaping the dynamics of complex systems.

Two different types of order can be observed in natural systems. Directed order describes system where the relationship between an action and its effects repeat and, thus, can be known in advance by analysing the system or bringing in relevant expertise. The functionality of the system equals the functionality of the parts. In this space, solutions can be designed. These systems are called *ordered* or *complicated* systems. For example, the construction of an airplane is a complicated task.

Emergent order is different. Emergence is a process of the people in a system self-organising in a decentralised way into a qualitatively novel state of interrelation to attain new capabilities. The functionality of the whole is more than the sum of the functionality of the parts. For example, people self-organise into communities because together they can achieve more than all individuals on their own. Under emergent order, causality is not predictable because the structure of these systems is not fixed. It is continuously created by the interactions of the actors. The structure changes with the behaviour of the actors in the system. The behavioural choices, in turn, depend on the structure. Systems with emergent order are called *complex*. In evolutionary economics, economies are seen to be complex systems.

In a complex system, dynamics are shaped by attractors and boundaries. In a community, attractors can be described as ‘the way things are done around here’. The participation in a social group that shares a set of common metaphors and practices makes people more likely to adopt these and over time it will be difficult for individuals to escape the attractor. For instance, the driving style in different countries can be an expression of social attractors. It can be physically dangerous not to adhere to the rules and norms that shape that attractor. Attractors determine a system’s disposition for change by making some behaviours more probable than others. Recognising dominant attractors, catalysing latent attractors and nudging systems to shift energy from the currently dominant ones to more favourable latent attractors are options for development practitioners to shape economic development.

While attractors make a certain behaviour more likely than another one, boundaries constrain behaviour by defining what types of behaviour are not possible or not allowed. Boundaries describe barriers in a system that govern behaviour. Many institutions, such as the rule of law for example, constitute boundaries. Also, more tacit institutions like social norms can create strong and impenetrable boundaries. As with attractors, development practitioners should be aware of boundaries and can attempt to shift them or impose new boundaries if needed. This can, however, be quite risky because if boundaries are not in line with underlying norms and beliefs unintended consequences are inevitable.

5. Implications for market development practice

The process of economic change is inherently uncertain and strongly contextual. For many issues, there are no clear solutions. They can only be explored, supporting local stakeholders to try new ideas and to see what works. What works in one context does not work the same way in another, so imitating ideas from elsewhere without a deep sense of the local institutions and context is unlikely to work as intended.

The following seven principles are intended to inspire practitioners when designing, managing, advising or evaluating market systems development programmes.

Principle 1: Shift from changing allocation to enabling evolution

Instead of trying to fix selected under-performing market functions, market systems programmes should adopt an evolutionary approach to promoting inclusive economic change. The problems of allocation cannot be solved by fixing selected 'market functions'. Picking, for example, the problem of limited investment in R&D and setting up a short-term fund to finance innovation does not change the incentive structure that led to an underinvestment in R&D in the first place. It does not increase the system actors' ability to identify the problematic pattern and develop options to overcome it.

Current allocation choices are a direct result of the institutional structure in an economy. These structures determine, for example, the incentives for the private sector to engage or not engage with certain groups. The institutional structure has evolved over long periods of time and the various elements of the structure are closely interrelated and interlinked. Institutional change is a complex process. This process requires relevant local actors and their networks to actively lead a process of exploration of what is possible to shape the evolution of their economy. Development programmes can support local actors in this process and shape the evolutionary path of the system.

Principle 2: Shift from market failure to market fitness

Markets should be used as enablers of a decentralised search and discovery processes to find ideas and solutions that work. Market development actors can support this process by making markets more effective as mechanisms for evolution to work. The health of a market from an evolutionary perspective can be measured by how it creates variety and how it selects appropriate designs. An element of this is for example the performance of new companies that enter the market. Questions to ask are whether they are more productive than incumbents or whether they increase the variety of economic activities.

Another aspect is the process through which companies generate and select ideas internally. That means that practitioners should not only look at what firms are currently trading in, but how they select, adapt and develop their options internally. Understanding how institutions, formal and informal, and structural factors affect the willingness of entrepreneurs to enter new markets, invest in and expand their enterprises and networks gives an indication of what can be done to promote self-discovery and innovation.

Beyond creating variety, markets are important selection mechanisms. Development practitioners also need to understand whose preferences and influence shape what is being selected and who profits from that. This might mean for example that stronger political economy and governance elements are needed in market systems development.

Principle 3: Strengthen variety by embracing diversity

Variety not only enables the evolutionary process by providing ideas to choose from but it also creates resilience. Building up a repertoire of ideas, modules and concepts that can be tried in different combinations makes it possible for actors to design novel responses to unexpected situations.

Too little variety means lower innovation and hence lower resilience. This can for example be seen if all the companies do the same and nobody innovates. In contrast, too much variety undermines the formation of stable structures. This happens when many new things are being tried but ideas are abandoned too early so no designs or products can be established and exploited. To assess whether an economy has a sound level of variety, it is necessary to consider industry and technology life cycles. Also, in any given system there are limits to the range of variety that can be supported. For example, the viability of different business models is often constrained by technological factors, such as indivisibilities or the minimum scale required to make a technology feasible.

Development practitioners must, however, be sensitive to recognise and uncover past attempts to change. They need to ask what has already been attempted, learned, or achieved; or what should be avoided and what may be worth repeating in a slightly adapted way.

Principle 4: Create and maintain situational awareness

It is critical for actors engaged in economic development to be aware of what is happening around them. This awareness is central in a process of continuous exploration, learning and adaptation. **Being situationally aware means to construct and maintain a cognitive map that allows one to integrate diverse inputs and observations into a current understanding of the situation and to adapt strategy and interventions accordingly.**

Maintaining situational awareness cannot be done by a team or a single organisation; links into a diverse network within and between organisations are needed. Situational awareness creates a unique combination of knowledge about ‘how did we get here’, ‘what is going on now’ and ‘what are opportunities for change going forward’. Situational awareness requires that people who have different views must still be able to work together.

The challenge is that often actors become conditioned to a dominant way of doing things and hesitant to try new ways. They then often narrow the sources of information they access to the ones that confirm the current situation. Hence, this means that the ability of private or public organisations to generate intelligence or to strengthen situational awareness might need to be built. For example, in many cases local business and government leaders choose to ignore evidence that contradicts their own narrative of what is going on. Making these leaders aware of the situation can lead to the realisation that they have more options than they thought they had. The idea is to help key local organisations to become better at tracking change, spotting patterns, and mobilising their partners and society at large towards dialogue, solution exploration and change. It is not sufficient if a development programme itself understands what is going on and is managed adaptively.

Principle 5: Manage the complicated and explore the complex

Complicated and complex situations need to be approached differently. **Complicated situations can be managed**. Traditional output-oriented project management techniques work well. Progress can be accurately measured against pre-defined deliverables and milestones. This works well for example when constructing a bridge. **Complex situations need to be explored**

because outcomes are not predictable. For instance, how an economy reacts to a new regulation cannot be predicted in advance, often there are unintended consequences. Incentive schemes, for example, might lead to perverse behaviours to exploit the incentive. The only way to make sense of how a complex system works is to continuously interact with it, to learn based on feedback received, and adapt one's strategy. Different avenues can be explored through a portfolio of safe-to-fail experiments. The aim of these portfolios is to create variety and options for local actors that were not available before, they did not think of or assume possible.

Change in complex systems is not linear but determined by temporarily stable regimes formed by attractors and boundaries. These regimes are often codified in dominant narratives, for example in the way companies describe marginalised communities. While change can appear gradual, it is important to understand when a regime shifts to a new attractor in order to understand whether systemic change has happened. In the example, the change could be indicated by a shift of the dominant narrative towards the poor being described as an important market segment.

Monitoring in these situations needs to focus on detecting signals of change stimulated by safe-to-fail experiments. This entails the ability to detect weak signals of change that are often captured through observations or hunches by people who know the system well. This can again include for example shifts in dominant narratives captured by a programme.

Principle 6: Strengthen organisations that encourage and support self-discovery

In well-functioning economies, so called meso organisations support or shape all kinds of economic transactions. Central to the effectiveness of these organisations is their ability to detect patterns at the level of enterprises and consumers, interpret them and respond accordingly. This requires an on-going process of learning and adjustment within these organisations. It is important for these organisations to also understand economic evolution. They can strengthen evolution by encouraging and supporting a process of self-discovery among the various stakeholders.

For local stakeholders to be able to engage in, repeat and adapt such a process of self-discovery, the agenda must be set locally, even if it is imperfect from the point of view of development programmes. This creates local knowledge and experience that can be recorded and made accessible even to non-participants and adapted into local ways of knowing by a range of organisations and enterprises. An example could be a provincial government agency that is interested in promoting more agri-food processing to increase on-farm labour and value addition. Instead of a development programme designing the right business model, the agency engages with a wide network of stakeholders to explore different possibilities around agri-food processing.

Development programmes can map meso organisations that shape or could shape the performance patterns of enterprises. They can ask who plays a role in equipping or shaping future generations of enterprises and leaders and how these organisations can be strengthened.

Principle 7: Continuously link top down and bottom up development

Many meso level organisations evolve from a combination of both bottom up demand and strategic processes from the top down. Top down is when new ideas are introduced in an autocratic or controlled way, immaterial of which level of a hierarchy, organisation or society it originates from. Bottom up is about participation, about democracy and about collectively choosing between alternatives. There are instances where top down makes sense, such as for adopting international standards for food safety. In other cases, an imperfect local solution agreed to by many stakeholders can be more powerful than a mandated one that people do not adhere to.

Top down institutions and organisations should be shaped by bottom up requirements that may be unique for each region or industry. Development practitioners need to understand how top down and bottom up can be connected and better integrated. Development cooperation can play a critical role here in giving voice to marginalised actors and stakeholders who seldom get to shape the services and regulatory processes of public organisations. The search for solutions should thereby happen at the lowest possible level in a society as this allows them to emerge so they respond to specific contexts.

6. Conclusions

To tap into the evolutionary dynamics of economic change, development actors need to work with local actors to encourage self-discovery. By helping reduce the risks of trying new ideas, more variety can be introduced – not just in terms of products or commercial services, but also in terms of institutional responses to under-performance. The capacity of market actors to come together and go through a process of exploration, learning and generation of local solutions can be enhanced by market development programmes. The process is more likely to work if it builds on local institutional arrangements and organisational support and seeks to be participatory and transparent.

What does this mean for the concept of systemic change? Currently, systemic change is often defined as an innovation that is brought to scale in a sustainable way. Inherent in this definition and particularly the concept of scale is the idea of a solution to a problem that can be scaled, and that can be traced back to its origins for reporting purposes. This logic is firmly embedded in current definitions of systemic change and frameworks that are used to conceptualise systemic change. From an evolutionary point of view, crucial aspects are absent from this conception of systemic change and its frameworks. For example, the ability to explore more options, the diversity of things being tried, the ability of actors to come together to make sense of a situation and to find contextualised solutions based on local knowledge. This tendency to focus on fixing problems often results in variety being reduced while 'ideal' solutions are promoted. Little attention is given to how interventions influence the evolutionary process. Equally, little attention is given to who is in power and what these people's interests are to direct institutional change.

Based on what we have learned during this study, we want to conclude this discussion paper with a re-framed conceptual understanding of systemic change in market systems development:

Systemic change in a market system is characterised by improvements in the quality, value, or extent of economic opportunities for people, achieved while the institutional landscape remains adaptable to future challenges. It is fundamentally an evolutionary process: involving variation, selection and amplification of solutions to complex problems.

Systemic change is most likely to be achieved when influential actors or networks of actors become aware of how change happens, and their role in realising the evolutionary potential of the economy.These influential actors need to develop the capability to engage in, collectively discover and continuously shape their institutional landscape - a process that is most effective when it is done in a transparent and participatory way. Generally all levels of society need access to these processes if people living in poverty are to be included in its benefits.

By implication, it is not sufficient for a development programme from outside the system to improve market access for a particular target group of beneficiaries, like micro / small enterprise, marginalised women or people living in poverty. Rather, the aim should be for the relevant actors in the system to become able to recognise that some groups are left out or that some negative patterns are repeating and react to that.

Selected references

The technical paper published in parallel to this discussion paper contains an extended list of references. For readers interested to explore this topic further, we propose the following literature.

BEINHOCKER, E.D. 2006. The Origin of Wealth: Evolution, Complexity, and the Radical Remaking of Economics. Boston, Mass.: Harvard Business School Press.

Beinhocker provides a great synthesis of evolutionary economics and how it differs from neoclassical theories. He covers the process of economic change in detail, and makes a convincing case as to why economies are complex adaptive systems.

SHIRLEY, M.M. 2008. Institutions and Development. Cheltenham, UK; Northampton, MA: Edward Elgar.

Shirley first explores the current understanding of New Institutional Economics on how institutions are working to create economic performance and then applies this understanding to international development practice.

NORTH, D.C. 2005. Understanding the Process of Economic Change. Princeton, N.J.: Princeton University Press.

In this book, North synthesises and integrates several decades of research and writing on the topic of how economies change, and the central role of institutions in this change process.

SNOWDEN, D.J. & BOONE, M.E. 2007. A Leader's Framework for Decision Making. *Harvard Business Review,* November 2007 Pp. 69-76.

In this highly cited HBR article, the authors make a clear distinction between complex and complicated issues, and outline an approach that leaders can use to improve decision making and strategy.