SysPrac26

Presentation Talks

Embedding Systems Thinking at Innovate UK Business Connect: Industrial Strategy, Technology and Innovation Ecosystems

Justin Beirold · *Presentation talk*

Innovate UK Business Connect (IUKBC) supports businesses across the UK to navigate the innovation landscape, connecting them with opportunities, expertise, and partners. In 2025, the UK government published its modern Industrial Strategy, identifying eight growth-driving sectors (IS-8) and their constituent frontier industries. But how do these sectors relate to one another? And how can a public innovation agency use systems thinking to better serve businesses operating both within and across sectoral boundaries? This practitioner-focused presentation shares ongoing work to apply systems thinking within IUKBC. It covers three interconnected areas. First, I reflect on systems thinking as a lens for understanding UK technology and innovation. What does it mean to take a systems view when your remit spans everything from agritech to quantum computing, life sciences to defence? Second, I present an evidence-based systems map of IS-8, built using network mapping software and derived from government policy documents. The map visualises cross-sector enablers that augment capabilities, supply critical inputs, and provide infrastructure across multiple industries. It reveals the value of viewing the Industrial Strategy as an interconnected system rather than eight silos. Third, I share my perspective on the practical challenges of embedding systems thinking within IUKBC and the businesses we work with daily. How do you make systems thinking useful for colleagues who need to advise businesses today? How do you balance methodological rigour with practical accessibility for stakeholders in the private and public sector?

Governance of Complex Projects

Mike Bourne · *Presentation talk*

Good governance is key to establishing a successful project. Large projects operate in complex environments and complexity is important. It must be managed through the use of appropriate tools, known as problem structuring methods (PSMs). A tool that is particularly applicable to organisational evaluation is the viable system model (VSM) and its application to governance informs this paper. It is proposed for this paper that broadly two types of project exist: (1) 'fixed target', where most of the requirement for the project will remain constant throughout the life of the project; and (2) 'moving target', where large areas of the requirement will change as the project develops. The governance and assurance system will be very different for these projects because they are fundamentally different entities. So, the governance system for a 'fixed target' model should be linear and static. Complex projects are neither linear nor static and any attempt to run them in this manner is likely to result in poor progress of the project. The metrics by which progress, and success, are judged should also be different for the two types of project. It is important that the governance system has a carefully developed model of the dynamic relationships that affect the project and its environment to ensure that the project is being controlled appropriately. Recommendations about how the two types of projects should be organised, reviewed and governed will be discussed. This is based on the work conducted with Prof Martin Parr supported by the APM.

Changing the System from Within: Practitioner Reflections on Building a Systems Thinking Ecosystem in a Local Government Setting

Bridie Collins · *Presentation talk*

Changing the System from Within: Practitioner Reflections on Building a Systems Thinking Ecosystem in a Local Government Setting Overview and methods: What was the catalyst of this mission (i.e. my previous experiences of leading system change programmes funded by Central Government, and what they lacked). What the apprenticeship has taught me about leading change in a system (including a high level VSM to outline the 'as is' structural tensions within the organisation). Working towards creating a system thinking ecosystem (SSM(p) to show the planning and where I hope we'll reach). Where are we now (Donella Meadows points of leverage and a smattering of system laws, to support my reflections on what's been accomplished, or not, so far).

Applying Systems Thinking to Support People Living with Cancer: A Team Approach at Macmillan (proposed, working title)

Pauline Craig and team (Macmillan) · *Presentation talk*

I am part of a fairly new team within Macmillan who are bringing systems thinking to our work with external systems. Two of us within the team are doing the systems thinking apprenticeship, and we have a variety of systems thinking skills and experience within the team. We would be happy to do a workshop sharing the approach we have pulled together, our principles and ambition as a team, how we are applying it externally and what we have learnt. Just to give you an idea of the space we are working in this is our current ambition: Our ambition is to create impact for people living with cancer (especially those most in need) by working with stakeholders and communities. We will focus on complex challenges within local and neighbourhood-based systems that surround a person living with cancer. Using systems thinking from the outset, we aim to shift underlying conditions, perspectives, and relationships so that long-term change becomes possible and can be sustained beyond our direct involvement.

Exploring Systems Thinking in Supply Chain Management

Meriel Davies · *Presentation talk*

Supply chains are becoming increasingly complex, facing pressures from disruption, sustainability, Net Zero, changing regulation, resource constraints and evolving stakeholder expectations. Yet many supply-chain challenges are still approached through relatively linear models of cause, effect and optimisation. This interactive workshop will explore where systems thinking can add value to contemporary supply-chain management. Participants will be introduced briefly to examples of systems approaches being applied to supply-chain challenges before experiencing a practical, SSM-informed inquiry themselves. Working with a supply chain or supply-chain challenge they know, participants will develop a rich picture to explore relationships, competing purposes, constraints, uncertainties and different stakeholder perspectives. They will then use elements of CATWOE, root definition and the 3Es to consider the purpose of the system and identify areas where intervention might make a meaningful difference. The session will conclude with a collective exploration of where systems thinking may have the greatest future potential within supply-chain management, and at what system boundaries or levels. The workshop is intended both for experienced systems practitioners and for those with an interest in supply chains. Participants will leave with practical experience of applying SSM, while contributing to an emerging community of inquiry around systems thinking in supply-chain management.

Adapting How We Practice in a Constantly Changing Working Environment — Lessons Identified from the Defence Research and Operational Military Environment (draft, subject to refinement)

Melissa Dawson · *Presentation talk (or discussion session)*

ADAPTING HOW WE PRACTICE IN A CONSTANTLY CHANGING WORKING ENVIRONMENT – LESSONS IDENTIFIED FROM THE DEFENCE RESEARCH AND OPERATIONAL MILITARY ENVIRONMENT (DRAFT abstract, subject to refinement) Working in a busy, constantly changing workplace and with an organisational structure that has very different drivers to academia and industrial / commercial ventures, what lessons can be shared that helps us to consider and be more effective at applying Systems Thinking skills anywhere? By comparing working in a busy high-level operational military headquarters to the office-based science and technology research way-of-working, I aim to share some of the lessons I identified in both these environments and some of the lessons I learned or have developed mitigations for. Not everything is successful and quite often the academic or 'correct' application of ST methods or methodologies are not possible. By recognising these issues and taking a step back to find other ways of enabling influence or positive effects based on ST, sharing these learning points (both based on practice in the environment and the Practitioners influence) could be of value to our community.

Mind the Gap…. in Weltanschauung

Jon Elphick · *Presentation talk*

Clapham Junction station is one of the busiest railway stations in Europe, it's the busiest interchange station on the UK mainline rail network and it's a critical interchange in South London, where three major services converge. The station has changed little in the last 100 years and over the last 15-20 years passenger congestion has become a major problem. Station operators regularly have to take action to maintain passenger safety, and the issue is forecast to get worse. This paper presents a novel and innovative Systems Thinking approach to finding a solution to the station's congestion problem, based on the Soft Systems Methodology (SSM). There have been several attempts to find a solution over recent years. The SSM was chosen as there are many stakeholders involved in the problem and the primary challenge facing them was to agree "What" could be done to improve the current problematic situation. This paper explains how the SSM was successfully applied to this problematical situation, how the approach was integrated with existing railway and governance processes, and concludes that the benefits may be more far reaching than the documented success thus far.

How did it come to this? *A systems perspective on crisis incubation*

Denis Fischbacher-Smith · *Presentation talk*

The onset of crises within organisations often appears to be a rapidly emerging event. However, the root causal factors for crises are often deep-seated and incubated within organisational processes and practices. The process of incubation, initially outlined by Barry Turner, can been framed as a mechanism for the generation of vulnerabilities in processes and practices within organisations which remain dormant until triggered by a perturbation or shock event that exposes those weaknesses. The paper looks at the processes by which incubation occurs within organisations and does so through a systems lens. The paper uses the kaleidoscope metaphor advocated by Turner to frame some of the underlying processes by which the potential for failure is embedded within organisations and sets this within a wider process of crisis management. It also allows for a wider consideration of how these incubation processes can be systemic throughout a range of organisations. Using public management as an example, the paper highlights the challenges that managers face when trying to assess their own potential contributions to the crises that they may subsequently have to manage.

Qualitative Differences in Attenuators: Country office to headquarters signalling in international companies

Helena Elisabeth Gallbo · *Presentation talk*

When the law of reciprocity of connections is systemised in international organisations, the center has both a real and a perceived need to turn down the volume on feedback from the broad organisation. This talk brings up some variations of information flow controls in organisations, and their function as attenuators. When you can discuss the variations of volume controls, listening to the organisation might become slightly less scary for headquarters. A few examples of attenuator types: Standardized signal shape Limited signal frequency Layers of filtering The examples are accounted for as they were observed in these types of settings that the lecturer worked within or was a co-designer of: In a stable context (org. design): Fractal levels of continuous improvement units for store service org. in retail company Change requests in business technology operating model for internal services of an equipment producer In a temporary context(project/implementation): Process design procedure for logistics company Greenfield IT service platform implementation in retail company TBM Taxonomy implementation in security solutions company

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Seeing services as systems: what does it mean to design services wholeheartedly?

Anne Gambles · *Presentation talk*

Service design gives us methods for understanding experiences and shaping better services. Systems Thinking in Practice (STiP) offers ways of exploring complexity, relationships, organisational learning and purposeful action. Inspired by Lou Downe's School of Good Services approach, Kate Tarling's Services Taxonomy, and Mike Burrows' Wholehearted perspective on engaging with complexity and building deliberately adaptive organisations, this workshop explores what becomes possible when Service Design and STiP are brought together. Our working hypothesis is that wholehearted service design is the capability to see, learn about, steward and continually adapt services as systems, while remaining focused on the outcomes they exist to achieve. Drawing on a real inquiry from The Open University based on Soft Systems Methodology, participants will explore this hypothesis through a practical service example. Using a series of complementary lenses, we will examine what helps us understand services as designed structures, what helps us recognise them as living systems that learn and adapt over time, and what helps us determine whether they are delivering good outcomes for the people they serve. Together, we will explore the capabilities that enable organisations to develop shared understanding, navigate complexity, learn from multiple perspectives and continually improve services in response to changing needs and contexts. Can organisations become truly service-led unless they develop the capability to see, learn about, steward and adapt their services as systems? Participants will leave with new ways of seeing services, practical insights for their own contexts, and a richer understanding of what wholehearted service design might mean in practice.

Symmasthesic Agency

Louie Gardiner · *Presentation talk*

This workshop will offer a taste of this complexity-attuned, radically inclusive approach to navigating and meeting real-world dilemmas involving multiple, diverse stakeholders. The approach brings to life a way of invoking 'Symmathesic Agency' (Gardiner, 2022). It has been developed and honed over decades in real-world applications. Following this introduction: If you want to apply this to a current complex challenge you are working on, you will be eligible to access the 2-for-1 ticket price with a colleague for the 3-day Breakthrough Collaboration training, 25-27 November in Edinburgh. To find out more: https://events.humanitix.com/breakthrough-collaboration-working-together-for-mutual-benefit

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Square Pegs, Round Holes, and Rich Pictures: Following the Situation Rather than the Method

Sacha Girling · *Presentation talk*

One of the challenges I have encountered as a Level 7 Systems Thinking Practitioner apprentice was deciding where to begin. With a growing awareness of different systems approaches and a requirement to apply several of them in practice, I initially found myself looking for problematic situations and then wondering which methodology might fit. Things took a different turn when my team used Rich Picturing from Soft Systems Methodology to explore our shared experience of work. The exercise revealed a number of areas of concern that resonated across the team and provided a basis for prioritising where we might focus our attention. Beyond that initial step, there was no predefined roadmap. We shared membership of a team and a desire to improve things, but the next methodological choice was far from obvious. This session reflects on that journey and the questions it raised about how systems practitioners select and apply methods in practice. Rather than offering a formula or decision-making framework, it explores how different approaches came into view as our understanding of the situation developed. Aimed at fellow apprentices and those curious about systems thinking, the presentation invites participants to consider what happens when we stop trying to fit situations into methods and allow methods to emerge from the situation instead.

Reporting of a CSH Project

Roelien Goede · *Presentation talk*

Reporting of a CSH project Duration: 20-30 minutes. Target participants: Apprentices and Practitioners using CSH in organisational settings. The aim of this talk is to present examples of how to report on CSH studies in a way that does justice to its core ideas. The aim of CSH is to engage with different perspectives to increase understanding of the complexity of the problem situation in context of the purpose of the system, in order to facilitate sustainable improvement. Reporting on such a CSH requires a good understanding of research principles and a strategy for presenting the project's process. Giving justice to minority and majority voices is central to CSH as a methodology. This talk will demonstrate how to report on a complete CSH project. Bio: Professor Roelien Goede is the Director of the Unit of Data Science and Computing at North-West University, South Africa, and a past president of the International Society of Systems Sciences. She is an independent assessor for the L7 ST apprenticeship in the UK. She has served as a systems specialist on various projects and presents masterclasses internationally on Critical Systems Heuristics and Research Methodology. She is the section editor for Critical Systems Thinking of the SRBS. She holds a PhD in IT from the University of Pretoria, South Africa, and has supervised 23 postgraduate students.

Network Analysis and Boundary Critique

Simon Gough · *Presentation talk*

We're exploring how graph databases and network analysis can be used to explore the boundary of a system of interest with specific reference to one of our current projects that aims to bring together organisations working on regenerative initiatives in Plymouth. At present we are looking to expand this project to other areas and as a data company we're keen to understand what additional tools and support we could give to potential hosts so that they might accelerate their efforts. This rapid, interactive session would comprise a brief introduction to graph databases and our project before opening up for participants to help us explore the topic more thoroughly. We would hope that attendees would identify new opportunities to apply data modelling techniques in boundary critique. Growing with Nature - a collaboration between Food Plymouth, The Data Place, Plymouth City Council and Plymouth Octopus Project - aims to bring together community gardeners, orchard maintainers, rewilding projects, community arts organisations, and local allotment associations to regenerate the green spaces in the city, in the process forming a strong voice to advocate for the city's natural landscapes. There are currently over

200 projects signed up to a prototype directory. An early map of these can be found at https://growingwithnature.info.

What happens when a Governance Review becomes an inquiry into how an institution learns, decides, adapts and legitimises itself? *Applying Systems Thinking in Practice to the Governance Review of a UK Chartered University*

Dave Hall · *Presentation talk*

The Open University's recent Governance Review began as a constitutional reform exercise focused on reviewing the University's Charter, Statutes, Ordinances and committee structures. Like many governance reviews in Higher Education, it was expected to address structures, roles, powers and accountabilities. However, as the review unfolded, questions about governance quickly became an examination of the University itself. It led to broader questions on how the University works in practice - about management, organisational culture, expertise, legitimacy, institutional purpose and organisational learning. Drawing on Systems Thinking in Practice (STiP) and Critical Systems Heuristics (CSH), the review team explored 'governance and management' not as separate domains but as interconnected dimensions of a wider institutional system. CSH provided a framework for examining four sources of influence: motivation, control, knowledge and legitimacy, helping to surface assumptions that might otherwise have remained implicit. The inquiry exposed not merely differing opinions but differing worldviews concerning purpose, authority, representation, expertise and legitimacy. It also highlighted the value of treating both the University and the Governance Review itself as systems of inquiry operating at different recursive levels. This presentation reflects on the contribution of STiP and CSH within a complex and politically sensitive governance context. We explore where these approaches added value, where their contribution was less clear, and how they helped create conversational spaces in which constitutional, managerial, academic, STiP and experiential perspectives could be brought into dialogue. We end with lessons for STiP practitioners engaged in governance, organisational learning and institutional change.

Ten complexity governance principles

Timo J. Hämäläinen · *Presentation talk*

Private and public sector organizations are struggling with the increasing complexity and uncertainty of their environment. Traditional reductionist analysis and planning, efficiency-maximizing strategies, and hierarchical and siloed organizations do not work well in the highly interconnected and turbulent environment. This presentation is based on an ongoing book project which argues that the current Polycrisis is caused by a general governance crisis of the post-IIWW institutions and organizations. The presentation proposes a new governance approach to complex and fundamentally uncertain environments based on ten complexity governance principles: 1. Define the system, its boundaries and purpose to reduce situational complexity 2. Analyze the nature of the context and organize accordingly (Snowden's Cynefin, Spender's four types of uncertainty, and Lawrence & Lorsch's contingency approach) 3. Understand cultural and contextual constraints and opportunities of the system 4. Develop requisite cognitive and structural variety (Stafford Beer & Boisot & McKelvey's Ashby Space analysis) 5. Re-balance the Efficiency – Diversity tradeoff (towards adaptivity and resilience) 6. Act like an Austrian entrepreneur (orchestrate appropriate resource and knowledge combinations to the situation) 7. Keep up a requisite tempo of learning, decision making and acting (Boyd's OODA loop) 8. Decentralize decision making and coordinate lightly (with shared purpose, values, situational awareness and simple rules) 9. Encourage resource fluidity (reduce rigidities, share resources, create temporary structures) 10. Continuously learn and update your frames and structures with the changing environment (transformative learning and innovation processes)

Editing the system, not the document: applying systems thinking to annual report production in large public organisations

Virginia de La Hamayde · *Presentation talk*

Annual reports are usually treated as technical communication products needing good drafting, editing and compliance management. This talk argues they are better understood as complex adaptive systems, in which the final document emerges from the interaction of multiple actors, competing objectives, governance structures, feedback mechanisms and evolving data flows. Drawing on reflective practice from leading annual reporting in a large public sector organisation, the speaker shows how systems thinking reframes problems usually seen as editorial — inconsistent tone, duplicated content, weak risk narratives, late revisions, stakeholder disagreement — as systemic dynamics rather than writing or project-management failures. Concepts applied include feedback loops, delayed feedback, local versus global optimisation, system boundaries, emergence and archetypes such as 'Shifting the Burden': for example, how programme teams optimise for local representation while central editors seek organisational coherence, and how assurance cycles generate delayed feedback that drives rework. The central argument is that editors act as system stewards, not just communicators — balancing stakeholder needs, maintaining narrative coherence, and strengthening information flows, making editing a strategic systems intervention rather than a purely linguistic task. The talk closes with practical principles for applying systems thinking to reporting processes, relevant to any multi-author, high-accountability reporting environment.

Apprentices without masters: Building systems thinking practice capability through collective inquiry in NHS England

Virginia de La Hamayde, Jessica Britton, Mel Harris & Tash Koerner · *Presentation talk*

Idea: When systems thinking expertise was largely absent from our organisation, as a group of apprentices from different parts of the organisation, we created our own learning environment system. Together, we built a community of practice that translated theory into action, developed practitioner identity and began embedding systems thinking across NHS England. Our central argument is simple: developing systems thinking practitioners is not just about teaching methods—it's about building the relationships, spaces and shared experiences that allow new ways of thinking to take root. It's about building momentum and a movement. Workshop/masterclass session proposal: The interactive session would explore how systems thinking capability can grow when experienced practitioners are scarce in the workplace. Drawing on the experience of NHS England systems thinking apprentices, it will show how a peer-led community of practice helped translate theory into practice, build practitioner identity and support the early embedding of systems thinking across the organisation. Participants will reflect on their own contexts, identify the conditions that enable peer learning to become a mechanism for capability-building, and consider how to move from individual development to building a wider movement for systems practice.

From a Search for Intrinsic Value to Persistent Systems: The Deductive Development of TEQR

Edward Hilton · *Presentation talk*

This presentation describes the deductive development of TEQR (Time–Energy–Quality–Risk), a structured framework for interrogating proposed change in persistent systems. Rather than beginning as an attempt to develop a systems methodology, the work originated from an unrelated question in economics: Does intrinsic value exist, and if so, how might it be defined? Following this line of inquiry unexpectedly led to four recurring concepts—Time, Energy, Quality and Risk—which appeared consistently across diverse domains. The presentation introduces the ontology underlying TEQR, including persistent systems, entities, populations, Quality–Risk Points (QRP) and Quality–Risk Envelopes (QRE), before demonstrating how the framework structures

questioning around proposed change. Three worked examples, drawn from ecology and engineering, illustrate how the same questioning framework can be applied consistently across very different persistent systems to expose assumptions, identify evidence gaps, reveal important interactions and highlight potential risks before discipline-specific analysis begins. The presentation does not claim to provide definitive answers or replace existing systems methodologies. Instead, it offers TEQR as an evolving conceptual framework intended to support structured interrogation of change and stimulate discussion amongst systems practitioners.

Designing for the Conditions of Perception: What Embodied Experience Reveals About Systems Practice Under Pressure

Olivia Horgan · *Presentation talk*

Systems practice asks practitioners to work with complexity, hold multiple perspectives, question boundaries and remain open to learning. But what happens when the the conditions we work in (overwhelmed public sector organisations) constrain our capacity to do this? This presentation draws on an autoethnographic study of systemic change work in a pressurised NHS mental health organisation. Using Somatic Inquiry for Systems Thinkers (SISTer; developed by Rachel Lilley at the BLI), practice was examined through embodied sensation, affect, prior experience, interpretation and alternative meanings. Predictive processing and the theory of constructed emotion provided a framework for exploring how perception itself was being formed. The findings suggest that under conditions of stress, uncertainty and reduced relational support, particular interpretations became compelling while disconfirming information and alternative perspectives became harder to perceive. Conversely, changes in affect, pacing, relational cues and structure appeared to widen the perceptual field and increase the capacity to hold multiple interpretations. The presentation will argue that systemic practice is embodied. If systems practice seeks to expand boundaries and enable multiple perspectives, practitioners must also attend to the conditions through which those perspectives become perceptible. This suggests a shift towards designing for the conditions of perception as part of systemic intervention and reflective practice.

42 – Addressing societal level policy problems with systems Principles

Patrick Hoverstadt, Ed Straw · *Presentation talk*

42 is SCiO's new think tank initiative that looks at societal level problems using Systems Principles. Patrick & Ed argue that it represents a very different approach to traditional think tanks, not merely in the use of systems principles directly, but also in the speed with which it can be deployed and its political neutrality. Ed will discuss this with reference to his long experience running Demos – one of the UK's best known and influential think tanks. We argue that this has the potential to alter the nature of the system community's relationship with policy makers.

Realising the learning Organisation – A thirty-year Odyssey along the hype cycle

Louis Klein · *Presentation talk*

A "Being in Systems" session exploring the evolution of the learning organisation, linked to his new book, Realize It. The session could connect soft systems today's thinking, the Viable System Model and Luhmann's social systems theory with emphasis on systemic pragmatism, lived experience and learning ecosystems.

What Happens When Nothing Happens? A Metabolic Perspective on Organizational Change

Dr Janne J. Korhonen · *Presentation talk*

Organizations devote substantial effort to change. Yet despite this effort, many remain virtually the same. Vast resources are poured into numerous initiatives, yet it often seems as if the organization is standing still whilst running. Why does so much motion beget so little change? Drawing on systems thinking, organizational theory, productivity analysis, and biology, this session puts forward the notion that much organizational activity is metabolic rather than transformational. Just as living organisms devote much of their effort to maintaining and reproducing themselves, organizations expend substantial energy sustaining their viability. Living systems must also continuously determine what to incorporate, amplify, stabilize, transform, and expel. Organizations similarly devote substantial effort to distinguishing between signals that warrant adaptive response and noise that does not. Illustrating the thesis with case examples, the session introduces a parsimonious model of organizational metabolism and adaptation. The model distinguishes between the irreducible functions through which organizational viability is produced and the distributed socio-technical systems through which those functions become integrated, coordinated, and developed. Much as organs and connective tissues play different but complementary roles within living systems, both forms appear necessary for organizational adaptation. The session explains how organizations simultaneously change and remain the same, adapt to signals, and develop new capabilities whilst preserving their viability.

From Linear Transformation to 4D System Looping

Joan Lurie · *Presentation talk*

Organisations continue to invest heavily in project-based linear transformation programs largely based on mechanistic and psychological, rather than systemic change assumptions. These are clearly not a fit for the complex adaptive challenges we face; we need a new set of practices for organisational systems to be recalibrating themselves in continuous adaption. So why are leaders still relying so heavily on Transformation Programs? Leaders tend to solve the problems they think they have or the ones they know how to solve. Role theory would say that individuals don't take up roles, often because they don't know how. This may be compounded by consultants offering the same solutions in a reinforcing loop. It may be that many of the systems practices and methods on offer are still mechanistic and complicated, and perhaps inaccessible, cumbersome and difficult to apply - often more a fit for complicated challenges rather than complex adaptive ones. Over the last 30 years through experimentation and research in practice, I've developed the 4D Adaptive System Loop™. It is a framework, set of principles, practices and rituals which draws on complex systems thinking, second-order cybernetics and ecological principles. It provides a more organic scaffold which organisations can apply with more ease to observe and shift the patterns they have come to be in without simplifying or reducing the complexity. It offers the enabling constraints for deliberate adaption and the containment for self-organisation. In this talk I describe how 4D Adaptive System Looping works, how it's been applied in a few case studies and what it offers for leaders and practitioners for navigating the current context.

Getting into the Mess

Simon MacCormac and John Rogers · *Presentation talk*

Systems thinking can be learned from the safety of an ivory tower, where methods appear orderly and problems remain bounded. Practice begins when we leave the tower and enter the mess: contested situations shaped by uncertainty, organisational constraints and clashing worldviews. This talk explores the experience of new systems practitioners as they cross that boundary. We will consider how they can overcome capability, confidence and

organisational barriers while practising effectively – and as safely as possible – within environments that are inherently unpredictable. We will also examine the tension between apprenticeship and practice. Apprentices must learn methods fully, apply them with analytical rigour and produce evidence that satisfies assessment requirements. In real situations, experienced practitioners adapt, combine or abbreviate methods because they understand what must be preserved and where shortcuts can responsibly be taken. Early practitioners can therefore find themselves caught between proving formal application, satisfying managers and responding honestly to the situation before them. Drawing on our work with apprentices and emerging practitioners, we will explore how people can "play the game" without becoming trapped by it – and how entering the mess can help them develop the judgment, confidence and perspective needed to change the systems around them.

Applying Soft Systems Methodology to Review Adult Skills Funding: Lessons from a First-Time Practitioner

Christine McNeal · *Presentation talk*

In this presentation, I will share my experience of using Soft Systems Methodology (SSM) to review adult skills funding with colleagues from the Department for Work and Pensions (DWP) and the Department for Education (DfE). This was the first time I had used SSM in a real project, having only tried it before in a practice session with my supportive team. I will talk about what it was like to apply the method in a complex policy area, where different people had different views about the issues, priorities and possible solutions. I will explain how I used SSM to better understand the system, bring together different perspectives and identify opportunities for improvement. The presentation will cover the challenges I faced, how I worked through them, and the outcomes that came from the review. I will reflect honestly on what went well, what I would do differently, and what I learned from the experience. As a Systems Thinking Practitioner apprentice, this is an opportunity to share my experience of applying SSM in the real world with my fellow apprentices. Most importantly, I will share what this project taught me about systems thinking and about myself.

Variety Calculus: Cybernetic Methodology

Gordon Niven · *Presentation talk*

This presentation reports a novel systems thinking methodology based on cybernetics called the Variety Calculus. It is applicable to most aspects of operations, such as situational understanding, strategy development, planning, and organisation design and regulation. It seeks to calibrate systems to the nature of the task and circumstances and to thus maximise agency whether the situation is simple or complex. One of the key challenges faced by contemporary organisations is that the dominant paradigm based on objective information and analysis, hierarchical structures, and centralised control leave decision-makers ill-equipped to deal with complex and unpredictable situations. There is increasing recognition of an alternative paradigm that emphasises decentralisation, networked structures, and constant responsive adaptation rather than fixed processes. However, implementation remains a significant challenge. The cybernetic basis for our work is Ashby's Law of Requisite Variety. This states that effective agency is dependent on a system's ability to provide sufficient options to match the situation's potential for diverse states and outcomes. The Variety Calculus exploits this to create the required balance of characteristics to configure each aspect of a system to the simplicity or complexity of its situation. This largely involves a balance between cohesion, control and uniformity on one hand, and adaptation, freedoms, and diversity on the other. It thus combines both paradigms in a single framework and lexicon. We will describe the theoretical basis of the Variety Calculus and the range of practical techniques it offers.

Patterns of systemic relationships in change programmes

Anca Popa · *Presentation talk*

Programmes are mechanisms used by organisations to meet their strategic objectives in uncertain and complex environments. The programme team operates as a Middle between the Top (investing organisation) and the Bottom (change target). Therefore, the tensions affecting the Middle and their ways of seeing themselves and others as people in contexts have a significant impact on achieving the desired outcomes and building long-term agility into the target operating model. This session will propose using two systems thinking methodologies to assist Programme Managers in making sense of the systemic relationships and processes they operate and co-create with their stakeholders, and how to influence these relationships in empowering ways. First, the session will explore the stakeholder landscape programmes operate in, and the various positions (Tops, Middles and Bottoms) the programme teams are finding themselves in when relating across boundaries. Secondly, the session will then explore the unique contributions programmes could make to the Total System Empowerment (Oshry, 2007) by reframing their condition and seeking to engage with others as convenors (Wenger et al., 2014). Finally, the session will conclude with suggestions for future landscape assessments and interventions. References: Oshry, B. (2007). Seeing Systems: Unlocking the Mysteries of Organizational Life (2nd ed.). Berrett-Koehler Publishers. Wenger-Trayner, E., Fenton-O'Creevy, M., Hutchinson, S., Kubiak, C., & Wenger-Trayner, B. (Eds.). (2014). Learning in Landscapes of Practice: Boundaries, identity, and knowledgeability in practice-based learning (1st ed.). Routledge.

Internalized Liabilities (obvious but invisible)

Kai-Uwe Radde · *Presentation talk*

“Internalized Liabilities” aim to close an important gap between Finance / Finance Functions and Systemic Views - that so far, I haven't seen someone addressing it, generalizing an approach on "Technical Debt" in Software Development. The presentation introduces and explores the concept of internalized liabilities within organizations— obligations that are “obvious but not visible,” as they are not reflected on traditional balance sheets but have significant impact on future efforts and management attention. The approach proposes a minimal structure for categorizing and managing these hidden liabilities, comprising Strategic Debt, Organizational Debt, Process Debt, Data (Quality) Debt, Functional Debt, and Technical Debt. Organizations must determine internal “health” levels or ranges for each component. Each debt component is defined by the changes needed to achieve or maintain a healthy state that have not yet been implemented. I emphasize the importance of a systemic view, as addressing one type of debt will affect others and systemic views are directly built in, into the approach: Strategic Debt is about measures needed to maintain a healthy strategic position, leveraging concepts like “Patterns of Strategy” and the Viable System Model is used to assess Organizational Debt. Moreover, the Viable System Model ensures completeness of the approach. And this way, most importantly, it provides a joint vocabulary and language to organizations, translating systemic views into economic views and vice versa. If time allows: I assessed and challenged the approach via the “anthro-complexity” lenses of Cynefin with interesting results.

From viability to measurability – Designing governance structures in highly complex and regulated organisational contexts

Carola Ritzinger-Roll · *Presentation talk*

Purpose Medium-sized manufacturing companies serving multiple industries face increasing organisational complexity, dynamic market conditions, and expanding regulatory requirements. Ensuring organisational viability requires management systems that balance adaptability, operational performance, and regulatory compliance. This research investigates whether governance structures based on Stafford Beer’s Viable System Model (VSM)

can improve organisational steering and reduce complexity through measurable cybernetic performance indicators. Methods The research forms part of an ongoing doctoral project using a longitudinal mixed-methods case study in a German mechanical and plant engineering company operating in highly regulated sectors. The methodological approach combines semi-structured expert interviews with the longitudinal analysis of organisational and operational key performance indicators before, during, and after implementing VSM-based governance structures. Additional qualitative investigations within a comparison organisation provide contextual validation. Findings The project develops a cybernetic KPI system that translates key principles of organisational cybernetics, including recursive governance and variety management, into measurable organisational variables. The framework assesses changes in organisational complexity, coordination capability, decision quality, adaptability, and governance effectiveness. Initial observations indicate that this approach enables a structured evaluation of organisational development beyond traditional financial and operational performance indicators. Implications The study contributes to organisational cybernetics by proposing an empirical framework linking the theoretical foundations of the Viable System Model with quantitative organisational evaluation. By translating viability into measurable indicators, it seeks to strengthen the empirical basis of VSM applications and provide organisations with a practical instrument for evidence-based governance in complex, highly regulated environments.

Practice in the real world

Gavin Roberts · *Presentation talk*

Practice in the real world - a collection of useful tenets, tips and mistakes toward getting your work adopted. We all know what it's like learning and practising a new skill. You learn to drive, then you go out for real, and that's when you learn to drive. Systems Practice is doubly difficult as, unlike driving a car, there is no right or wrong approach. There are no clear rules for how you orientate and engage with people, how you manifest your practice skills and how you calibrate to the environment or problem situation. With practice, it's questions of; is this more or less useful? More or less effective? This uncertainty can be destabilising and disabling. It's all good having the tool/method/latest gear - but if you've no ideal about how to bridge that into the real world then you'll not make a dent in it. We note craft and intervention skills etc, but focus less on the actual 'inbetween' act of doing this live, with other humans in the real world. This session presents a collection of tenets, tips and mistakes that will be useful to your practice. Compiled from direct experience, conversations and reading, it promises to offer useful devices for those just starting out, and musings for the more experienced to reflect on. The main goal of this session is to make practice easier by sharing: -> Ways of orientating to the environment and those you are working with, -> Ways of sense-checking your practice and direction, -> Ways of calibrating to the 'sweet spot' of acceptability, -> A whole bunch of mistakes and mis-steps that hopefully you'll then avoid. Let's together enhance this compendium to enable systems practice to become the norm and not the exception.

VSM - starting with a blank piece of paper

Dr Lesley Rowan · *Presentation talk*

Case study: how a blank sheet of paper and 53 minutes working with the Viable System Model (VSM) kept Shepton Mallet Community Bookshop open for ten more years. Shepton Mallet Community Bookshop is a volunteer-run social enterprise in a small Somerset market town, selling donated books and reinvesting the surplus into community initiatives — £44,000 in its first four years. When Sheena, the volunteer leading the enterprise, told the speaker (a friend and VSM practitioner) that she thought she would have to close the bookshop because too much had changed and she wasn't sure she could keep leading it, the speaker suggested a coffee and a drawing pad. Together they built a VSM diagnostic model, working through where Sheena's expertise could focus and where extra resources could support operational and metasystem roles — a process that took 53 minutes. Two weeks later, Sheena announced the bookshop would stay open for five years; she has since revised that to fifteen,

'because I am enjoying it so much more.' A recent review of the 2024 model shows how ongoing VSM-structured reflection has underpinned both her personal and the organisation's transformation. (Session originally prepared for the Hull 2026 conference; content has since been updated.)

Reducing Complexity or Relocating It? Applying VSM to NHS England's Transition into DHSC

Max Shen · *Presentation talk*

This presentation applies the Viable System Model (VSM) to NHS England's transition into the Department of Health and Social Care, focusing on whether NHS England's core capability to provide national leadership can be transferred, retained or redesigned without weakening delivery. Rather than analysing the NHS as a whole, the paper defines the system-in-focus as NHS England's functions during the merger: allocation of resources, commissioning, oversight, performance management, transformation and improvement. The analysis maps NHS England's operational capabilities across regional delivery, national priority programmes, commissioning and specialist services. It then considers how coordination, control, assurance, strategic intelligence and identity are maintained during transition. A central finding is the tension between autonomy and cohesion. Too much autonomy can create silo working, inconsistent communication and reduced trust; excessive control can lead to more reporting, reduced delivery capacity and further mistrust. Using concepts including recursion, attenuation, amplification and Ashby's Law of Requisite Variety, the paper argues that the merger is a form of variety attenuation. However, structural simplification does not remove the underlying complexity of NHS delivery. If specialist expertise, regional intelligence and informal relationships are lost, bureaucracy and complexity may be relocated to less-resourced parts of the wider system. Pathology transformation is used as a recursive example to illustrate how national, regional, ICB, network and provider capabilities must remain connected. The presentation concludes that the transition should be managed as a transfer of viable capabilities, not merely a movement of functions, posts or accountability. This offers practical design questions for the transition ahead.

System Asset or Organisation Dataset? Ethical Service User Engagement in Systems Practice

Claire Tanton · *Presentation talk*

Systems Thinking Practitioners in the Public Sector are increasingly expected to engage people with lived experience in understanding and improving systems. Yet an important question is often overlooked: when people engage in workshops, focus groups and systems mapping activities, do they feel like a valued system asset or an organisational dataset? Drawing on my experience leading participation and engagement work with children, young people and families within local government, this interactive session explores the practical realities of ethical participation in systems practice. Participants will reflect on the tensions that can arise between personal values, professional ethics and organisational priorities, and consider how these shape the way we engage service users. Using Donella Meadows' Places to Intervene in a System as a practical reflective framework, the session will explore the relationship between participation, power and influence. Exploring where service users are genuinely able to influence systems, from improving services and shaping information flows through to influencing priorities, and organisational thinking. The workshop will also explore the concept of Minimum Viable Engagement versus Maximum Visible Tokenism, exploring how organisational demands, timescales and governance requirements can unintentionally result in participation becoming data extraction rather than meaningful influence. Through discussion and activities, participants will develop approaches to challenge and constructively 'push back' when organisational constraints risk undermining ethical participation. Participants will leave with practical questions, reflective tools and approaches for designing engagement that is transparent, proportionate and ethically aligned with levels of influence available, helping ensure lived experience contributes to systems change.

The Second Law of Technodynamics

Ivo Velitchkov · *Presentation talk*

Socio-technical systems work within the tension between autonomy and cohesion. Every mechanism of cohesion has an autonomy cost, and some also bring autonomy gains. Cohesion is dynamic and exhibits recurring regularities. One such regularity is concentration. A handful of platforms hold the world's attention, three cloud providers its infrastructure, and one company its chipmaking. Similar patterns recur throughout history. Attempts at alternative forms of governance repeatedly drift in the same direction. This talk examines technodynamics through the autonomy-cohesion lens. It reveals two phenomena. The first is the clustering of cohesion regimes according to how they affect the autonomy of participants. This reveals how different cohesion mechanisms produce different kinds of autonomy and how systems move through the autonomy space. Where dependence runs through a node that cannot readily be replaced, autonomy is held on lease, at a rent paid in money, compliance, or conformity. The second is the tendency for coordination control, in the absence of counter-action, to concentrate. Like the layer of cohesion on which it operates, this concentration is driven by several interacting forces and technologies. Counter-actions can, at least temporarily, restore the replaceability that autonomy requires. But they can also reinforce the very drivers they are intended to counter. In the absence of counter-action, concentration does not simply persist forever. It consumes the slack that absorbs shocks, gets fragile and eventually collapses. Historically, it was collapse that dispersed concentrated control rather than reform.

Beyond Sustainability: Why Regenerative Governance is a Developmental Challenge

Jan De Visch · *Presentation talk*

Many organizations have embraced sustainability frameworks, circular economy principles, ESG reporting and stakeholder engagement. Yet despite these advances, leaders often experience a persistent gap between improved sustainability performance and the organization's ability to continually adapt, innovate and regenerate. This presentation argues that the missing ingredient is developmental rather than technical. Drawing on systems thinking, Stafford Beer's Viable System Model, developmental theory, Critical Systems Heuristics and practical work with organizations, the session introduces a developmental perspective on regenerative governance. Rather than viewing governance primarily as the allocation of authority or the management of compliance, governance is reframed as the continuous regulation of three developmental tensions inherent in every living system: autonomy and cohesion, stability and diversity, and differentiation and integration. The presentation introduces four governance archetypes—Mission Stewardship, Commons Stewardship, Reciprocity Governance and Ecosystem Development Governance—and shows how each protects a different source of ecosystem vitality. Finally, it presents the concept of the Performance Tree, a practical approach that helps leaders move beyond measuring isolated KPIs toward governing the developmental relationships that generate long-term value. The presentation combines conceptual insights with practical examples from healthcare, platform organizations, regenerative business models and ecosystem collaboration, offering systems practitioners a new way of connecting organizational design, governance and regeneration.

Implementing the Self-Managing Enterprise with Agentic AI

Kim Warren · *Presentation talk*

The March 2026 STSP conference included a presentation "Agentic AI and the Self-Managing Enterprise" which explained that we - and AI agents - control a system by decisions that try to close a gap between some current state of the system and a target for that state. It went on to explain that, for AI agents to do that successfully across the enterprise, each needs to take account of the impacts of other agents' decisions. This presentation goes on to explain how that collaboration among AI agents needs to work. First, any local policy (e.g. for the number of staff we need to hire) must be moderated by 'guardrails' that prevent other unacceptable outcomes (e.g. too

high staff cost). Secondly, the system needs a supervisory control level that mediates between policies that interact (e.g. do we hire more staff, or slow the growth that those staff are supporting?) The presentation will demonstrate how this is implemented with a live case.

Systems in Symmetry: Symmetry in Systems - Critical Value Balance Theory

Tim Whitcher · *Presentation talk*

Systems Engineering is a well understood process in complex systems delivery and Systems Integration is a well-practiced discipline but an insightful understanding of how to test a systems viability and determine its stability is an immature field. This is largely because systems are complex, variable and nuanced to their context which appears to preclude the establishment of a common (simple) insight on which to base understanding. In this paper, we examine the criticality of system stability, explore why symmetry is the lens through which systems should be viewed and propose a method by which practitioners can establish the stability of their system regardless of context.

Systems, purpose and the pursuit of shared meaning

Steve Whitla · *Presentation talk*

Words and diagrams are the staple products of systems investigations, but how do we know what these words and diagrams mean to the people we share them with, especially people who weren't part of the discovery process that generated them? This session will explore some of the reasons we might assume we have shared meaning when we don't, some simple principles for growing shared meaning when it isn't there, and an exploration of what these principles imply for systems practice in general, illustrated with content from a range of different projects. The session will also examine the relationship between shared meaning and the broader concept of "purpose", and what this might mean for the way we relate to other "systems-oriented" colleagues, disciplines and communities.

How might understanding tempo help systemic action in government-community interactions?

Esmee Wilcox · *Presentation talk*

Many organisations suffer from reinforcing loops of images, ideas and habits of ever-compressed time horizons which can undermine value-generating activities such as other-regarding care work, cyclical work, and collective imagineering of alternatives. Systems thinking and futures thinking both lend themselves to critical examination of linear and short-term organisational assumptions that constrain evolution of governing ideas and practices to be fit for new social and environmental purposes and realities. Changing timeframes and directional orientations of time affect what actions are taken, by when and by whom towards sustainable futures. We also need to understand how our concepts of time and their relationships with collective action intersect with complex social and environmental policy at and across spatial and institutional levels. This session will open exploration of how change is happening in government-community interactions around climate change, to look for ways to open up collective assumptions about what change work matters, and how and why it matters. Making use of key concepts in understanding social dynamics and temporalities in systems work (from Barbara Adam, Chris Groves, Kerri Facer and Helen Pallet), this 'working in the open' session will make a case for systems practice that helps organisations to attend to multiple assumptions and lived experiences of timeframes, time-directions, and time-valuations for new collaborations in climate action. This will be useful for practitioners and praxis people working across complex issues in multiple stakeholder locations and through organisational boundaries.

Closing the Loop: The Participatory and Cybernetic Founding of SCiO USA

Benjamin Wood · *Presentation talk*

This presentation responds to the challenge first posed by Margaret Mead in her 1968 Cybernetics of Cybernetics address to the American Society for Cybernetics: Can a systems community apply its own theories to its founding, governance and development? The formation of the SCiO USA chapter provides an opportunity to revisit Mead's challenge in practice. This presentation describes an ongoing participatory process through which prospective members are defining the chapter's purpose, values, identity and governance using ideas drawn from critical systems thinking, pragmatism and second-order cybernetics. The central problem is how a community can achieve sufficient constitutional closure to maintain a recognisable identity without becoming closed to challenge, self-correction and adaptation. The emerging design therefore treats organisational identity not as a completed constitution but as a recursive, participatory process. The SCiO USA case is presented not as a completed model, but as an experiment in recursive institution-building: an attempt by a systems community to become capable of reflecting, challenging and transforming itself while maintaining its identity. The conference presentation provides an opportunity to invite the wider SCiO community to participate in shaping and critiquing the chapter's continued formation. If successful, the practices developed within SCiO USA may be adapted by other chapters and systems and cybernetics communities seeking greater participation, learning and institutional resilience. In this sense, SCiO USA becomes a living laboratory in which a systems community attempts to practice its own theories while contributing to the continued development of systems practice.

The application of Deep Uncertainty approaches for strategy design in possible dynamic, high dimensional futures

Mark Workman · *Presentation talk*

The world is growing less predictable and more complex. The ability to design long term strategy is increasingly challenging. In recent years, this challenge has led to poor preparedness and handling of crises across finance regarding the impact of complex derivatives and inflationary forecasting; health regarding Covid-19 pandemic preparedness; energy forecasts for economic competitiveness and net zero planning, trade for supply chain planning, and geo-politics as to the status quo regarding the rules based global order evident since 2024. It is only growing as the recent geopolitical events from the blockage of the Straits of Hormuz and its concomitant geo-economic implications have testified. Within this backdrop, this presentation argues that a paradigm shift is needed in the way that analytical communities across academia, consultancy and multi-lateral organisations think about unknown and unknowable futures. Specifically, it asserts that the analytical community should augment its legacy decision support tools with 'deep uncertainty' approaches, in order to: (i) enable it to shift from static-state strategy stress testing to dynamic stress testing; (ii) enhance cross-stakeholder transparency and understanding of risk through novel visualisations; and (iii) integrate more diverse insights in the red teaming of strategy performance in possible futures. The presentation will provide examples of the novel application of deep uncertainty approaches to: net zero technology portfolio design; technology learning curve analysis; and firm level investment analysis.

Posters (3)

Moving from theory to practice - adapting the Viable System Model in a complex public sector context

Kalyani Gupta · *Poster*

The Viable System Model (VSM) is often presented as a framework for organisational diagnosis and design, yet there can be challenges to translate theory into practice. This poster shares a systemic inquiry conducted within a complex public sector organisation, as part of the systems thinking apprenticeship. The inquiry focussed on using VSM as a learning device to better understand and diagnose a complex problem situation. Equality Impact Assessment (EIA) practice provided an anchor for the inquiry and allowed the exploration of how organisational structures, communication flows, decision-making and roles and responsibilities were impacting EIA practice. The inquiry combined elements of the Self-Transformation Methodology (STM) and Viability Planning (VIPLAN), using rich picture, organisational identity analysis, recursion mapping and stakeholder interviews, to root the inquiry in evidence. The methodological choices were shaped by the organisational context, stakeholder capacity, and the need to incorporate multiple diverse perspectives. The poster will reflect on how VSM was used as a flexible framework for inquiry and learning, helping move from symptoms to a deeper understanding of the organisational conditions that sustained them. It will share practical experience on adapting VSM in messy real-world contexts, with an emphasis on application, adaptation and learning rather than methodological purity.

Poster - PhD student, Iolo Jones

Iolo Gruffudd Jones · *Poster*

I wish to present a poster to the ScyPrac organisers to be displayed during the conference. The poster will include the following textboxes: background of my work, aim, research questions, expected methodology and expected outcomes. For further context, here is a very brief summary of the project: "The aim of this research is to address the complex problem of language revitalisation by drawing on the intellectual framework of 'systems thinking'. Never before has a 'systems thinking' approach been applied to cast light upon the challenges of language revitalisation. By drawing upon 'systems thinking', this research project has the potential to reconceptualise the field of LPP, and strengthen our understanding of how to successfully revitalise minority and/or minoritised languages. Furthermore, it will broaden the horizons of 'systems thinking' by providing insights into the application of 'systems thinking' within a whole new field." Feel free to read more here: https://www.iaith.cymru/uploads/general-uploads/Doethuriaeth_Iolo_Jones_-_SAES.pdf

Because I Said So: The Rationalisation of National Policy, Strategic Implementation and Unintended Consequence

James Dennis · *Poster*

Poster Title: 'Because I said so: The rationalisation of National policy, strategic implementation and unintended consequence'. Description: a look at the impact of top-down policy change on healthcare service transformation within the NHS and the potential role of Critical Systems Heuristics in mitigating its unintended consequences on strategic risk during implementation. Background: I am a Level 7 Systems Thinking apprentice working full-time as a national director of transformation at NHS England. My professional background spans clinical, operational and strategic leadership within healthcare across the NHS and UK independent sectors. My background also includes academic and professional certifications in Project, programme, portfolio management and risk, resilience and crisis management. Therefore, I incorporate these pragmatic paradigms related to change implementation and strategic intent. Systems thinking, therefore, provides a unique lens and toolkit with which to rationalise these

often competing objectives. I am also open to presenting or being involved in a workshop around the same topic and how my own progressive learning of systems thinking as an apprentice has changed my approach.