

MANAGEMENT OF COMPLEXITY AND RISK BY SYSTEMS SCIENCE (1 or 2 Days)

A marine storage terminal, a refinery or chemical plant is a complex living system. Interaction with all stakeholders is a challenge. Complying to an ever growing number of rules, regulations and guidelines needs a control system which is manageable. We created a new management learning program that focuses on this concept: 'information reduces uncertainty' by using systems science. This is a unique approach developed after much research to understand how complex systems behave and generate risk.

Management when focusing on effectivity using technical, economic or operational skills only, does not suffice anymore due to the enormous complexity of responsibilities and uncertainty which is the inability to know everything fully. Uncertainty is a fundamental property of complex systems primarily due to, a large number of elements, high interconnectivity, interdependence, nonlinear interactions and coevolution. Feedback loops during a system's development make the space of possible future states to the system grow at an exponential rate. Within complex environments, our traditional analytical methods for modelling the future – that depends on probability and statistics – break down. In response you need to invest more in understanding these broader trends. TTT teaches terminals how to respond and function within a wider range of possible states in order to maintain stability and prosperity.

HSE, knowledge, insight, awareness, skill, control, efficiency, time, to name just a few, are the necessary foundations for tank terminal management and marine operations. It all comes down to be able to control and steer the terminal's complexity through information feedback.

This highly interactive and practical course will assist bulk liquid marine storage terminals in achieving a competitive advantage by having an effective and well-managed operation. This will ensure your operational processes and workforce perform up to the highest standards and expectations.

WORKSHOP

The workshop "Risk Management 2.0" will empower attendees to recognise and to address both the intended and the unintended consequences of decision making, thus reducing complexity and risk.

Systems Theory and Cybernetics together form Complexity Theory. These emergent sciences provide you with the best tools to identify and to manage your risks and therefore to ascertain business continuity. Regulators and governments demand more compliance to an

ever-growing number of rules. They are deemed necessary to protect life and the environment.

Fact is that regulations, rules or compliance enforcement impair an organisation's functioning. The success and sustainability of businesses or other organisations are not only determined by financial or economic performance, but also by a good reputation. Rules and regulations become guidelines. Interrelatedness and interdependence of these issues can be understood by complexity theory and systems thinking.

Key elements of the workshop

This workshop introduces Complexity Theory as a way of being comprehensive while managing complexity by thinking in relationships. It covers the following topics:

- Systems Theory
- Psychological and Physical Effects
- How to create a 'Happy Workplace' to reduce stress and avoid 'burn-outs'
- Cybernetics
- Practical Exercises:
 - a. Designing sustainable, viable organisations
 - b. Application of Systemic Risk Management

Met opmerkingen [FS1]: For me, the two sentences are not connected, i.e. they contain two different messages:
1) Regulatory overhead impairs functioning/efficiency
2) Reputation is important
→ I think the first message should be enhanced, and the messages should be separated, and then both of them should be connected to Systems Science (or better: Systems Thinking), as in the first section above

Why You Should Attend?

By attending this two day comprehensive, highly interactive and practical course, you will be able to control and manage organisational risks.

Learning Objectives

Master operational best practices in value awareness and learn how to balance the forces in your system of enterprise. When one thinks in systems and relationships, one can easily understand, determine and manage risks to the organisation, the environment and oneself.

Met opmerkingen [FS2]: and manage?

Who Should Attend?

- Chief Executive Officers (CEO's)
- Operations Managers
- Compliance Officers
- Risk Managers
- Government Regulators
- Health, Safety and Environment Managers
- Representatives of NGOs concerned with sustainability issues
- Share- and Stakeholders
- Professionals and Students
- Members of any organisation interested in risk management

COURSE OUTLINE for the two-day version of the Programme (You may choose to attend the first day only)

DAY ONE Morning Programme

Session 1 Long-term Vision

- Sustainability: The art of remaining relevant
- Systems Theory and Complexity: An introduction
- Understanding autopoiesis and its relationships
- Seeing your organisation as a living system
- Determining risk

Session 2 Human Factors

- Human characters: Genetic, learned or acquired? Impact of culture?
- The Island Theory: If one would be living alone on a deserted island, how would one survive?
- The Law of Unintended Consequences
- Psychology: Cognitive Biases
- Understanding, dealing with and reducing stress

DAY ONE Afternoon Programme

Session 3 Systems Science

- Cybernetics: Using Feedback Loops, Understanding Linear and Non-Linear Causality, Interference Patterns, Attenuators and Amplifiers
- The Law of Requisite Variety (Ross Ashby)
- The Ethical Regulator Theorem (Mick Ashby)
- Building and maintaining a Viable System Model (VSM) – (Stafford Beer) within boundaries of functionality or the limits of reality (Realimiteit).

- Path Dependency - Positive and Negative Interdependence
- Dealing with Externalities – true cost of doing business

Session 4. Decision Making

- The brain versus the heart
- Psychology, 'Soft Skills' and Human Factors
- Neocortex versus the limbic system
- Neuroscience, mirror neurons, epigenetics, neuroplasticity and noetic effects

Day TWO Morning Programme

Session 5 Practical Exercise: Design of a Viable System

With the tools and information you have learned during the first day, you will now be able to design a viable organisation. It is essential for an organisation to create value over time, therefore benefiting employees, customers, suppliers, business partners, local communities, legislators, regulators, and policy makers. The result is long term longevity and continuity, because the complex system has become maximal steerable and controllable.

Day TWO Afternoon Programme

Session 6 Practical Exercise: Application of Systemic Risk Management

The participants will formulate a future operation and risk management policy based on systems theory, ethics and cybernetics.

End of training

Awarding attendance certificates

Course Instructor



Arend van Campen MA, Creazene Institute, Switzerland

After more than 30 years working in the Energy Industry, Arend earned a Master's degree in Business Ethics & Social Responsibility. He started TankTerminalTraining and teaches that a safe and profitable business can thrive only when people act sustainably. He set up 'CREAZENE', a research institute focusing on a sustainable future, the protection of human and non-human life, the preservation of social cohesion and the protection of the environment. Currently he integrates 'Systems Science' in his workshops as a scientific tool to enhance overall business performance and risk management.

He publishes research findings on his blog: www.arendvancampen.blogspot.com

Please go to www.creazene.org for more information about research towards sustainability.