

SySc 510STB - Systems Thinking for Business
Instructor: Dr. Rich Jolly (rdjolly@pdx.edu)
Spring 2013 - 4 credits

Understand and solve complex business problems which are ambiguous under standard business analysis methods.

	<p>In the early 2000's a smallish computer company called Apple made an audacious proposal to the powerhouses of the music industry. How could Steve Job's iTunes possibly come to fruition in this environment?</p>
	<p>In 1983 Osborne Computer Corp. was a growing force in the young computer industry. What happened after they announced a new model with groundbreaking features? Bankruptcy!</p>
	<p>In the mid 1970's Betamax and VHS shared the home video recorder market. Betamax was superior to VHS in virtually every technical feature, was first to market and was backed by the most successful consumer electronics company. How did VHS grow to monopolize the market?</p>

Learning Objectives:

Develop systems thinking knowledge and skills which allow the student to explain unexpected result, anticipate resistance of potential decisions or identify subtle leverage points which could lead to innovative solutions. These are specifically:

- Gain first hand, high level, working knowledge of system modeling and simulation tools (dynamic, discrete and agent based) such as Vensim, Netlogo or Arena. The goal is not to make the student proficient in building these models but to have an understanding of their capabilities through some simple simulation projects.
- Develop qualitative systems thinking including: system archetypes; leverage points; game theory; ecosystems; networks and more

Using the provided framework (checklist) the student will be able to make an assessment of these factors and design system monitors, countermeasures or modify processes to mitigate effects.

Systems science focuses on the study of interactions - be these structural dynamic interactions (delays and feedback), diversity (variety in a system) or relationships. These effects, which are often assumed to be negligible in other models in order to gain tractability, are its focus. As such, the techniques are applicable to wickedly complex (and often high impact) problems which may be difficult to address with standard methods. System science models non-linear emergent effects which can be central to a system's pathologies.

This intensely practical class is specifically designed to complement and expand your MBA classes. It is recommended for any type of MBA specialty. There are no prerequisites.

About the instructor: Dr. Jolly earned his PhD in Systems Science/Business Administration and MBA from PSU. Dr. Jolly also has many years of real world experience as a senior manager at Intel.