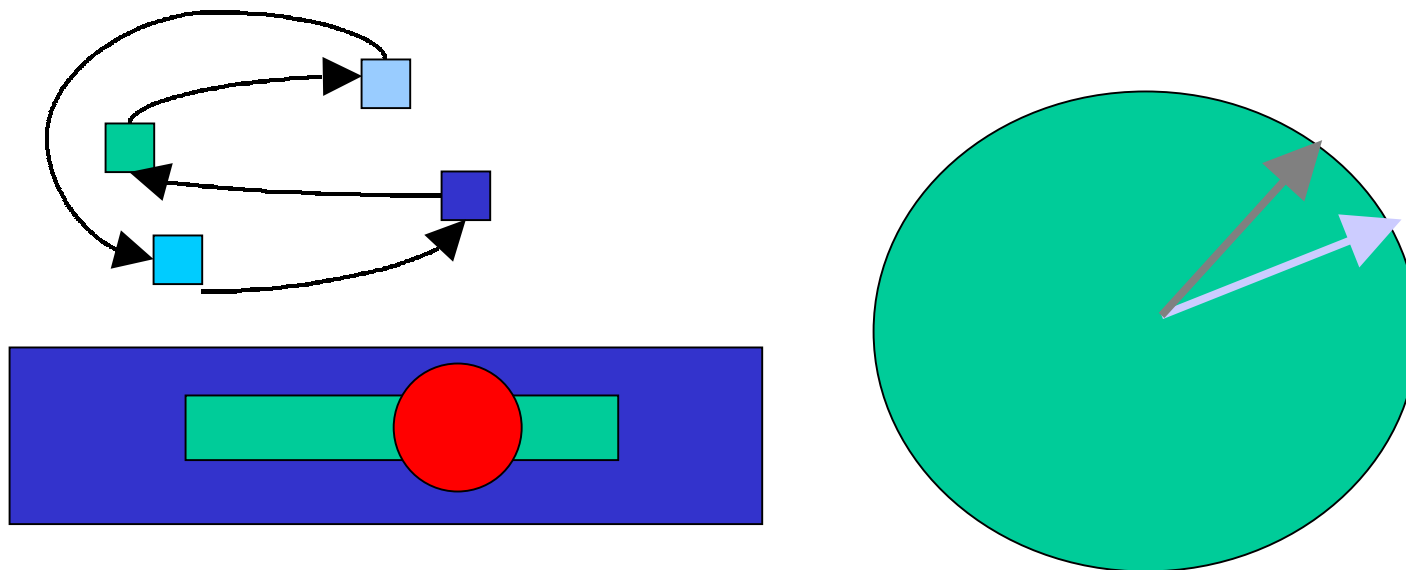


Complex issue structuring and micro-strategy testing in ERP environments



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Abstract

- In the 90's, the Balanced Scorecard concept has spread globally.
- In parallel, ERP (Enterprise Resource System) began to interconnect the business organizations via their IS.
- There was a need to provide decision makers with a synthetic, visual and structured way of assessing corporate performance and of enabling a better strategy formulation and testing.

Abstract

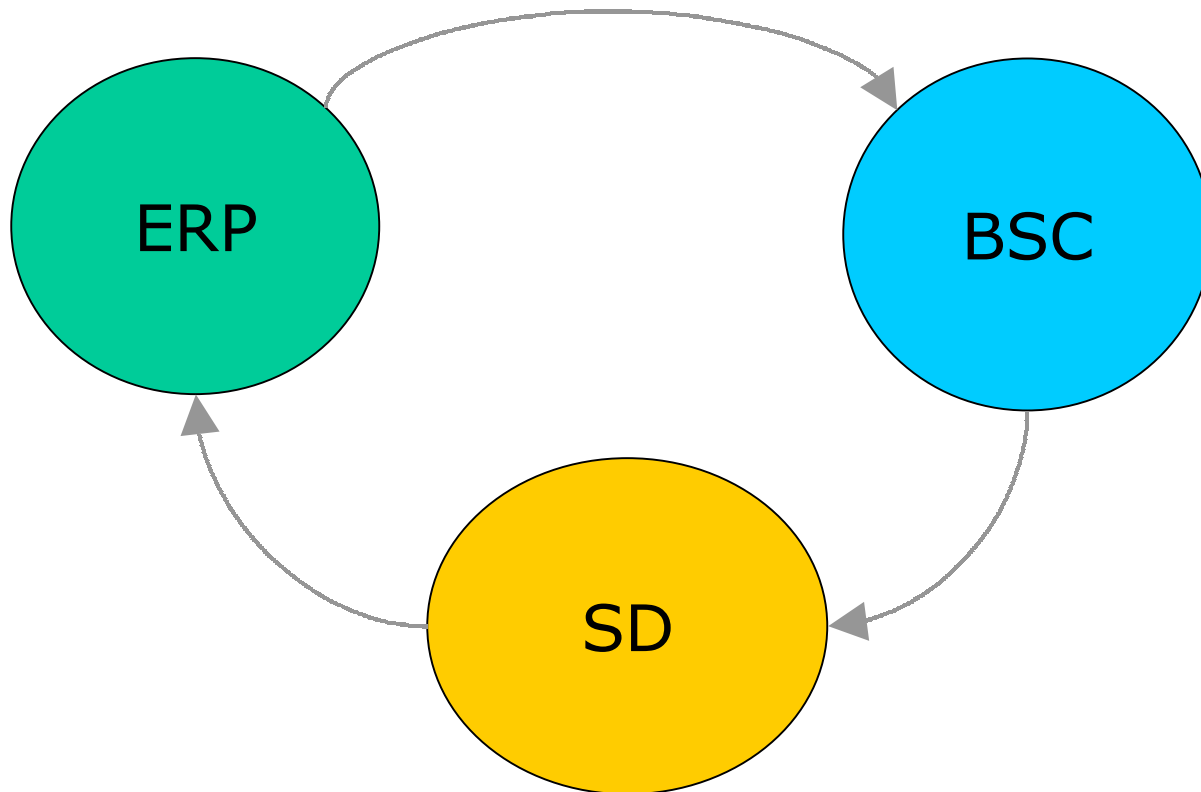
This was made by extracting information from corporate information warehouses, and structuring them in physical 'war rooms', where decision makers could 'live with' key performance indicators and feed their decision processes with them , supported by the corporate IS database.

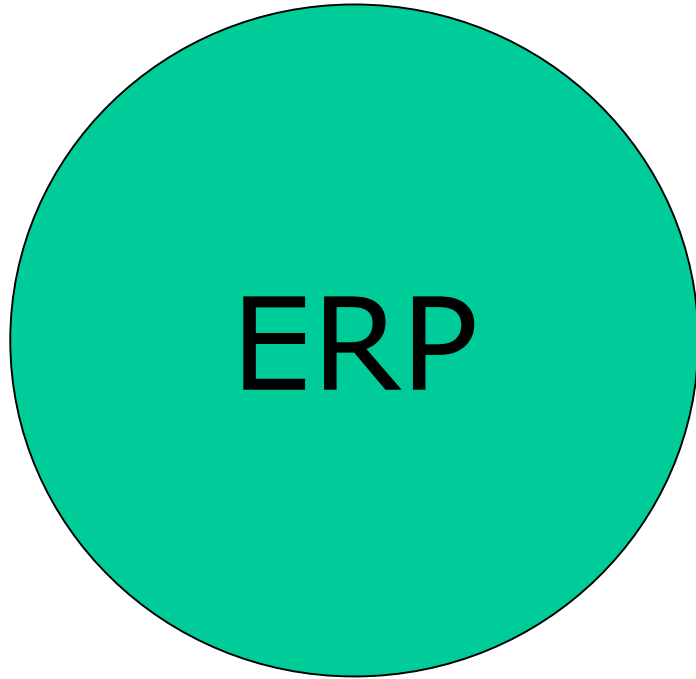
Abstract

The author will present an integrative methodology for adding value to those sessions, bringing in systems thinking tools and small system dynamics simulations as catalysts for issue structuring and micro-strategy formulation and testing processes.

Introduction

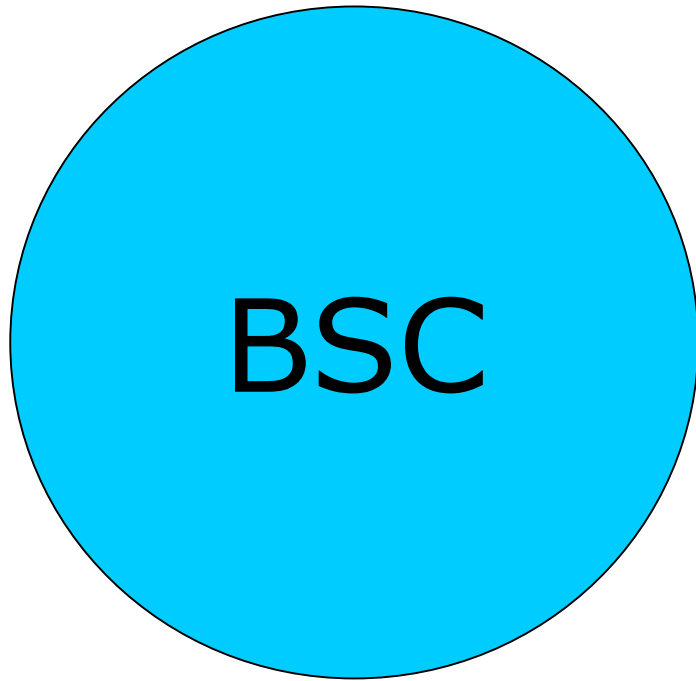
The worlds that we're talking about:





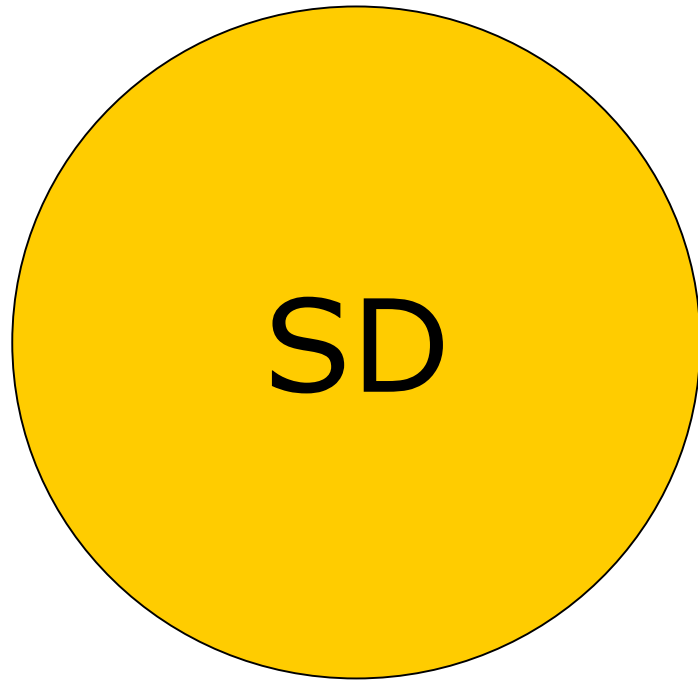
Enterprise Resource Planning

Information Technology system application that interconnects the different departments of an organization, allowing to perform an integrated management and operation of its activities.



Balanced Scorecard

An integrative perspective for measuring corporate performance, apart from a systemic methodology for deploying and align corporate strategy with operations and tactics. The included perspectives are: Financials, Customer oriented, Internal processes, and Learning and growth.

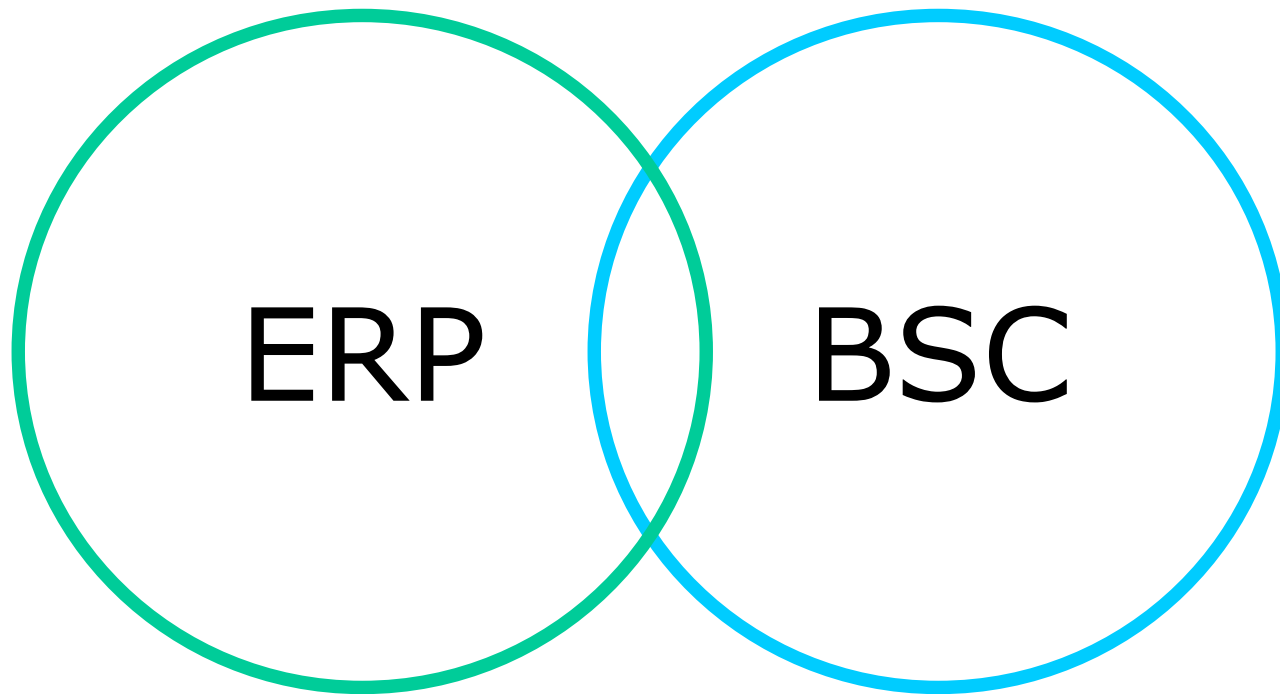


System Dynamics

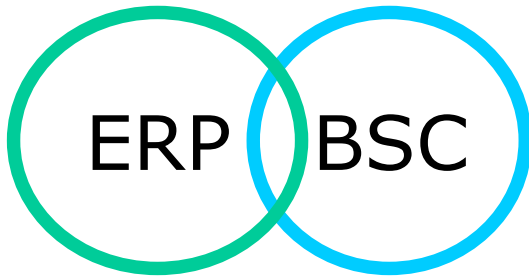
A methodology for understanding, describing and designing policies in complex dynamic systems. It tries to answer how structure generates the observed behavior.

Structure is depicted in closed loops cause-effect relationships, and computer simulations are used for overcoming cognitive limitations for strategy testing.

How these worlds interact

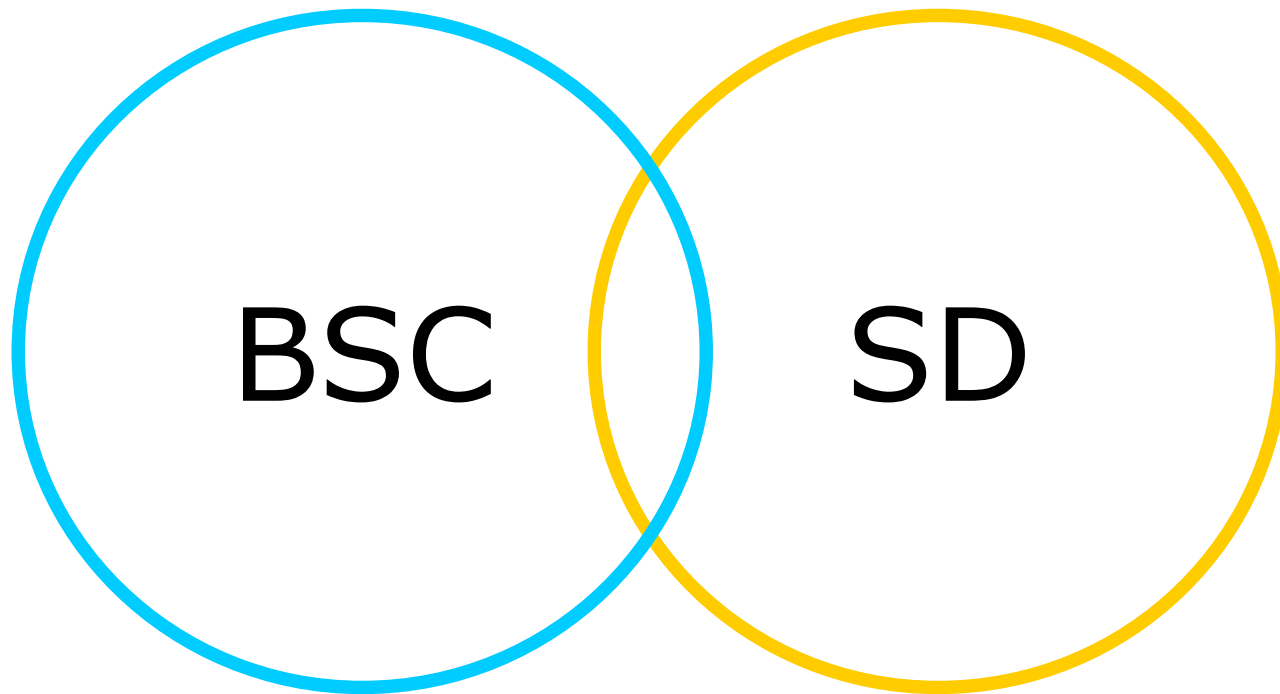


How these worlds interact

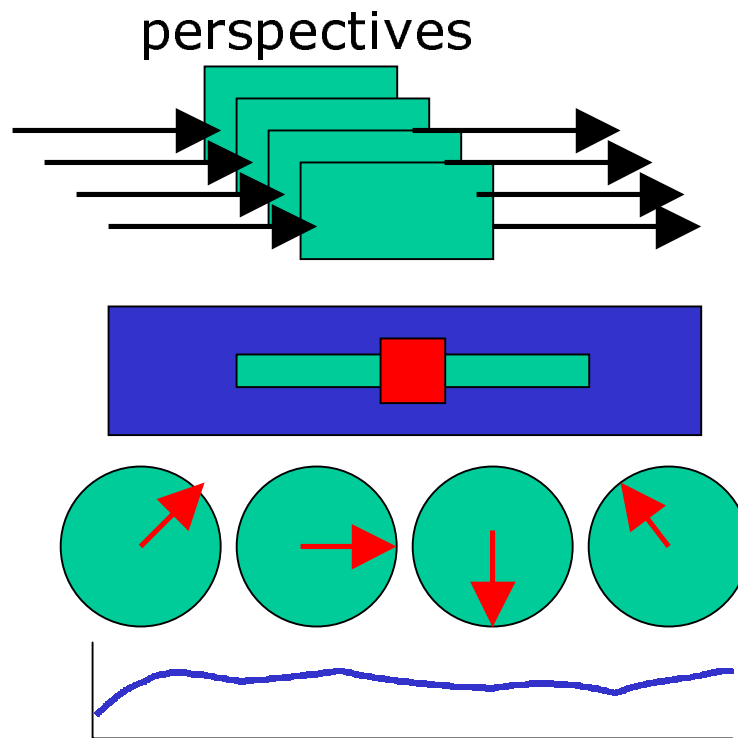
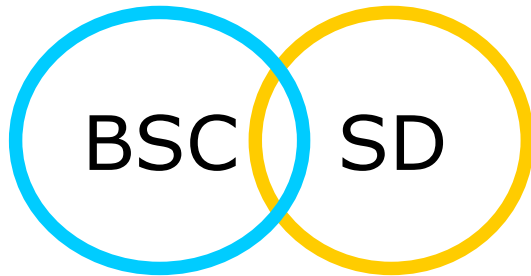


In a 'war room', managers interact with performance indicators, and drill down in the IS system to track cause-effect relationships and to discuss strategy.

How these worlds interact

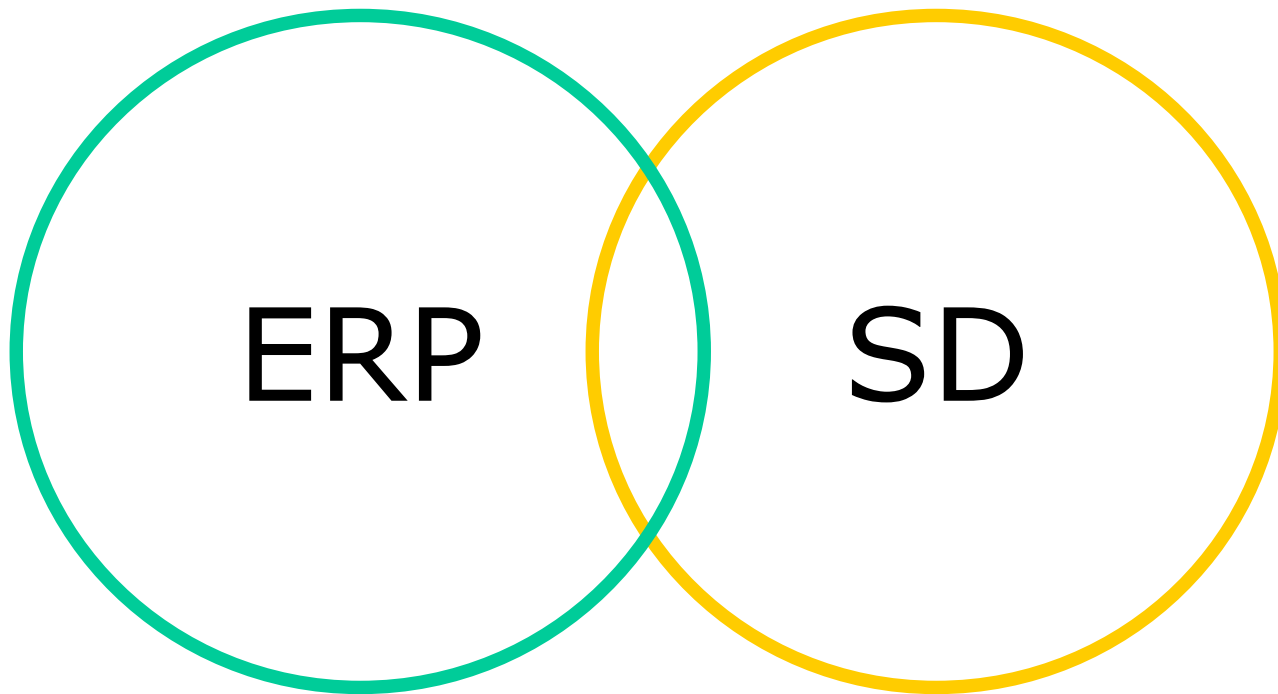


How these worlds interact

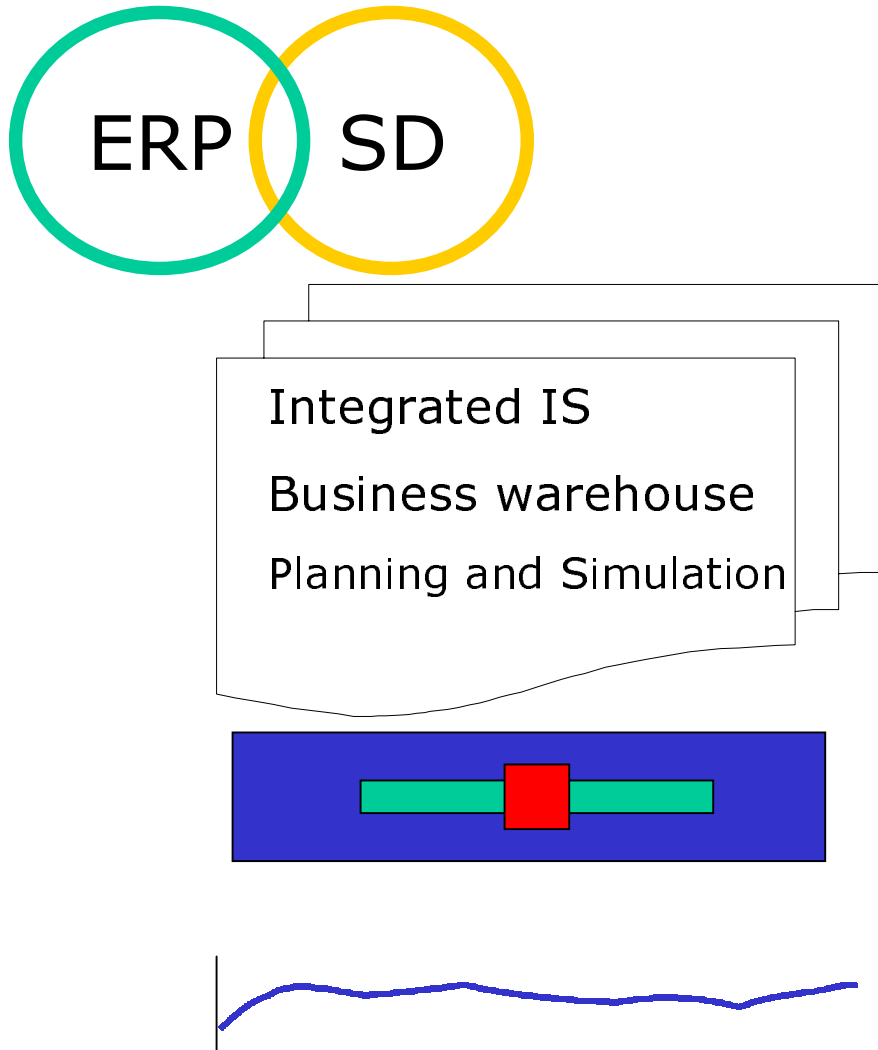


Supporting a Balanced Scorecard with a dynamic simulation model helps better to work with picking performance indicators and to achieve a better policy and strategy design.

How these worlds interact

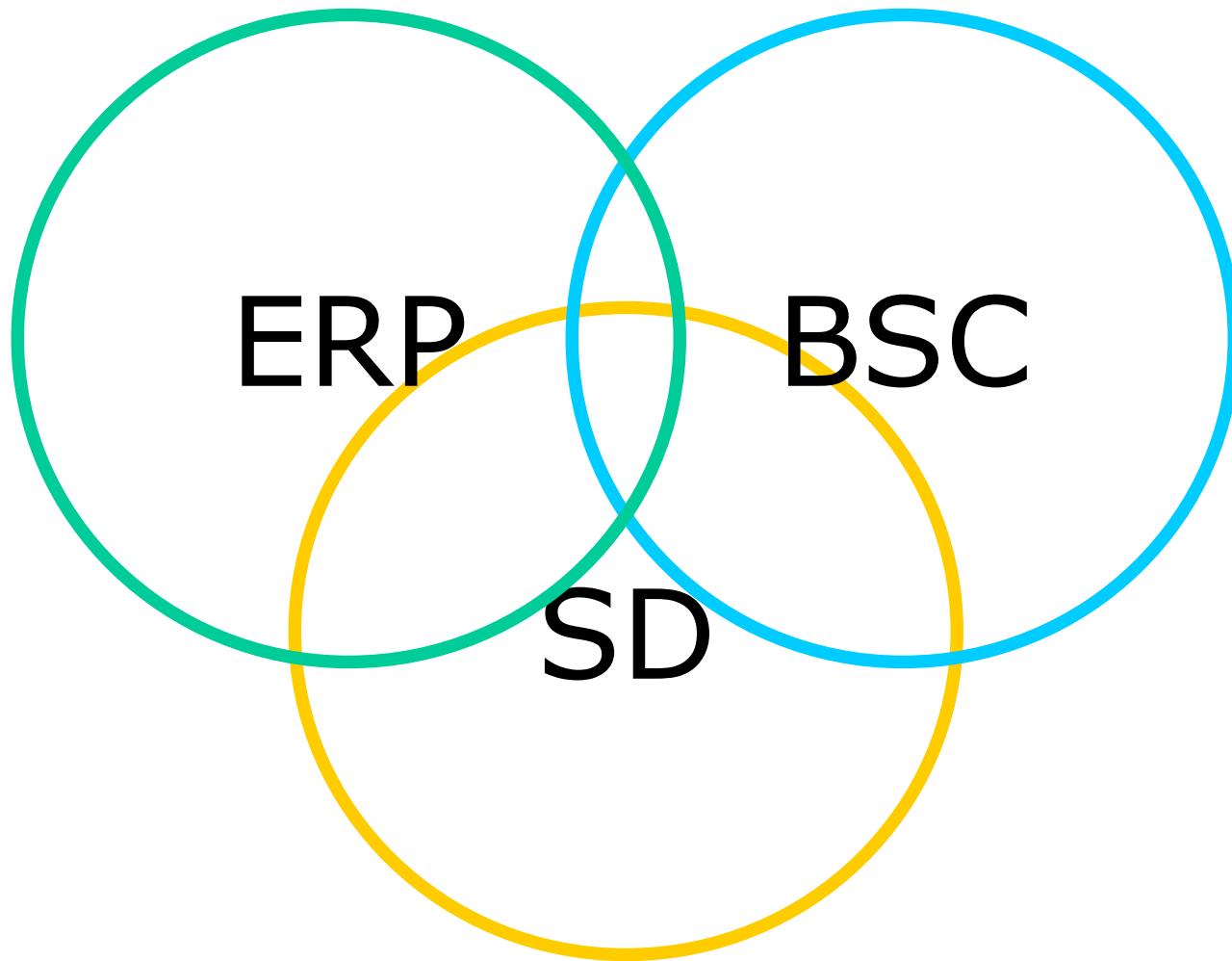


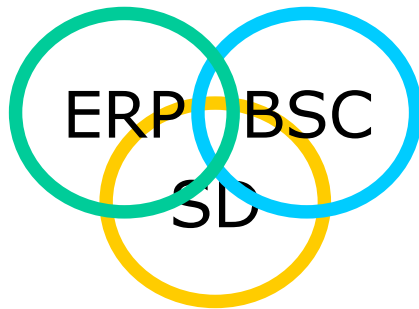
How these worlds interact



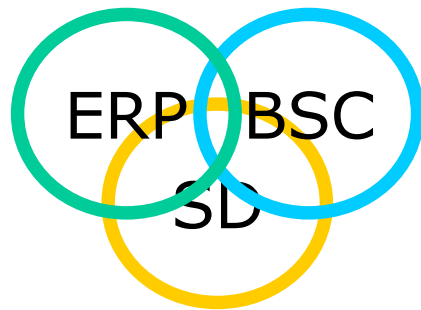
Embedding a dynamic simulation model in an ERP System allows to better perform business planning and simulation, beyond linear paradigms. Improves strategic enterprise management.

How to better integrate these worlds



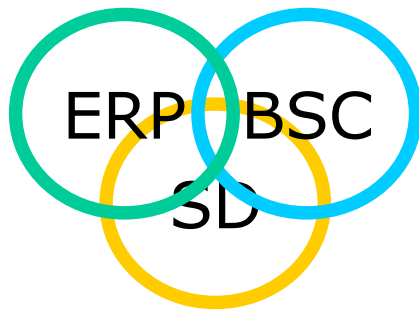


The setting for this proposed integration is inside a physical environment ('war room') that includes panels with the lead and lag indicators and a computer system tied to the organization's information system.

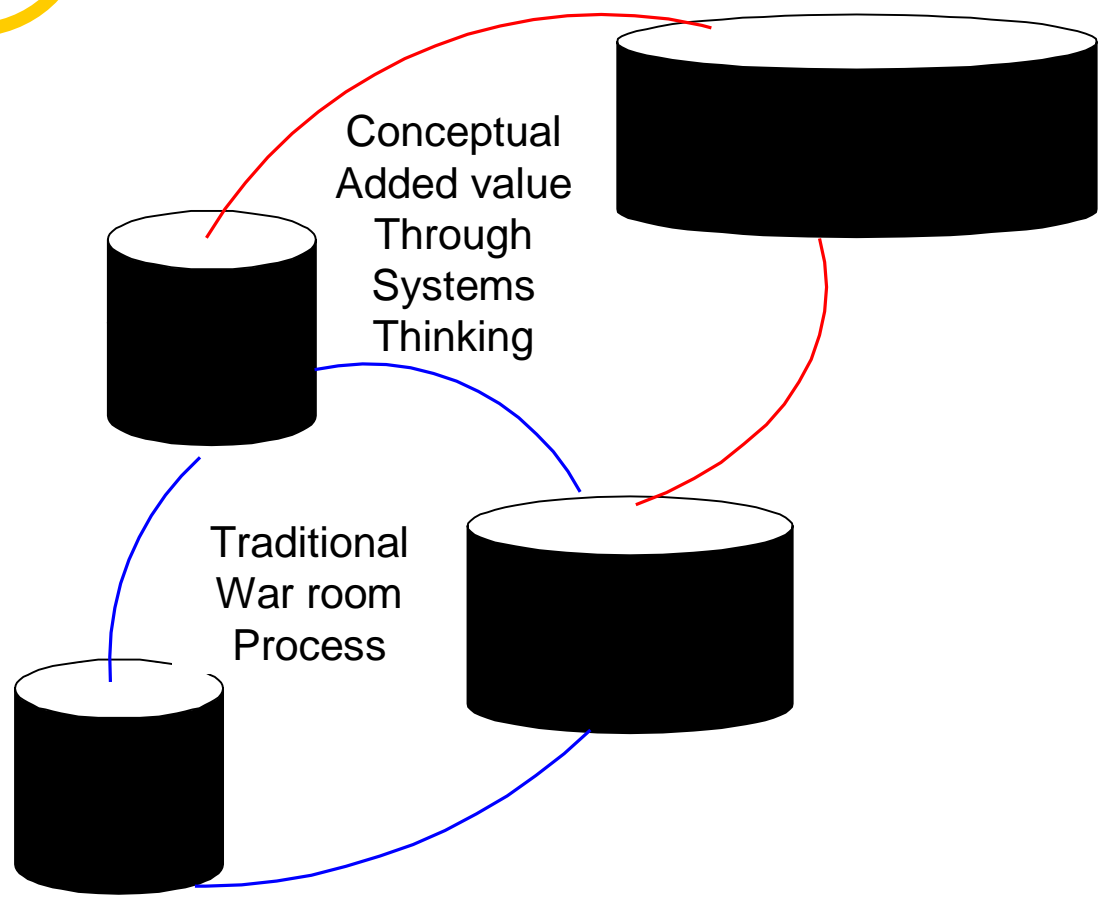


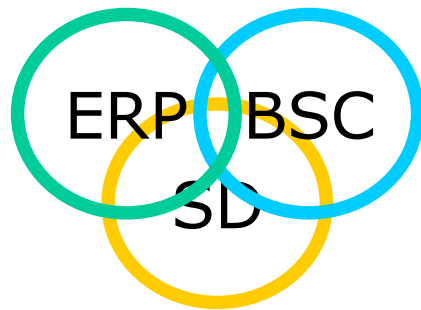
First stage: every week

The first stage of integration of these worlds includes picking the 'issue of the week' and the usage of systems thinking tools with the purpose of tacit knowledge elicitation and issue structuring while wandering around the 'war room' and talking about potential cause and effect relationships that might generate the observed behavior, constructing the different dynamic hypotheses.



First stage: every week

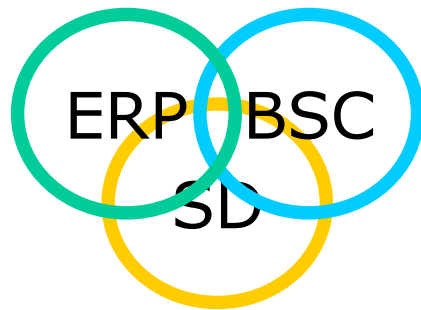




First stage: every week

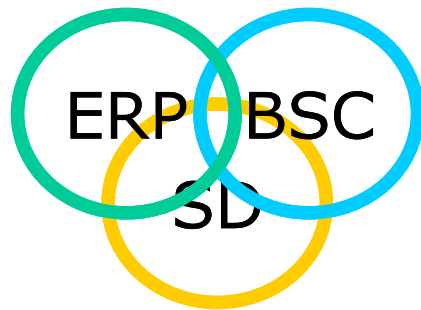
Some systems thinking tools that are suggested to use in this conceptualization and structuration stage are:

- Structured brainstorming
- Behavior over time graph
- Causal loop diagram
- Non quantified Stock and Flow diagram



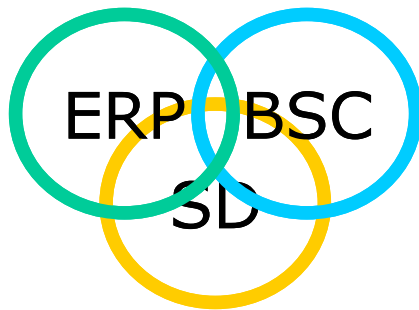
First stage: every week

The value added while using these tools in the described environment is mainly to enable the building of dynamic hypotheses related to how the emergent issue of the week is being produced by the underlying structure, in clear and concise conceptual diagrams.

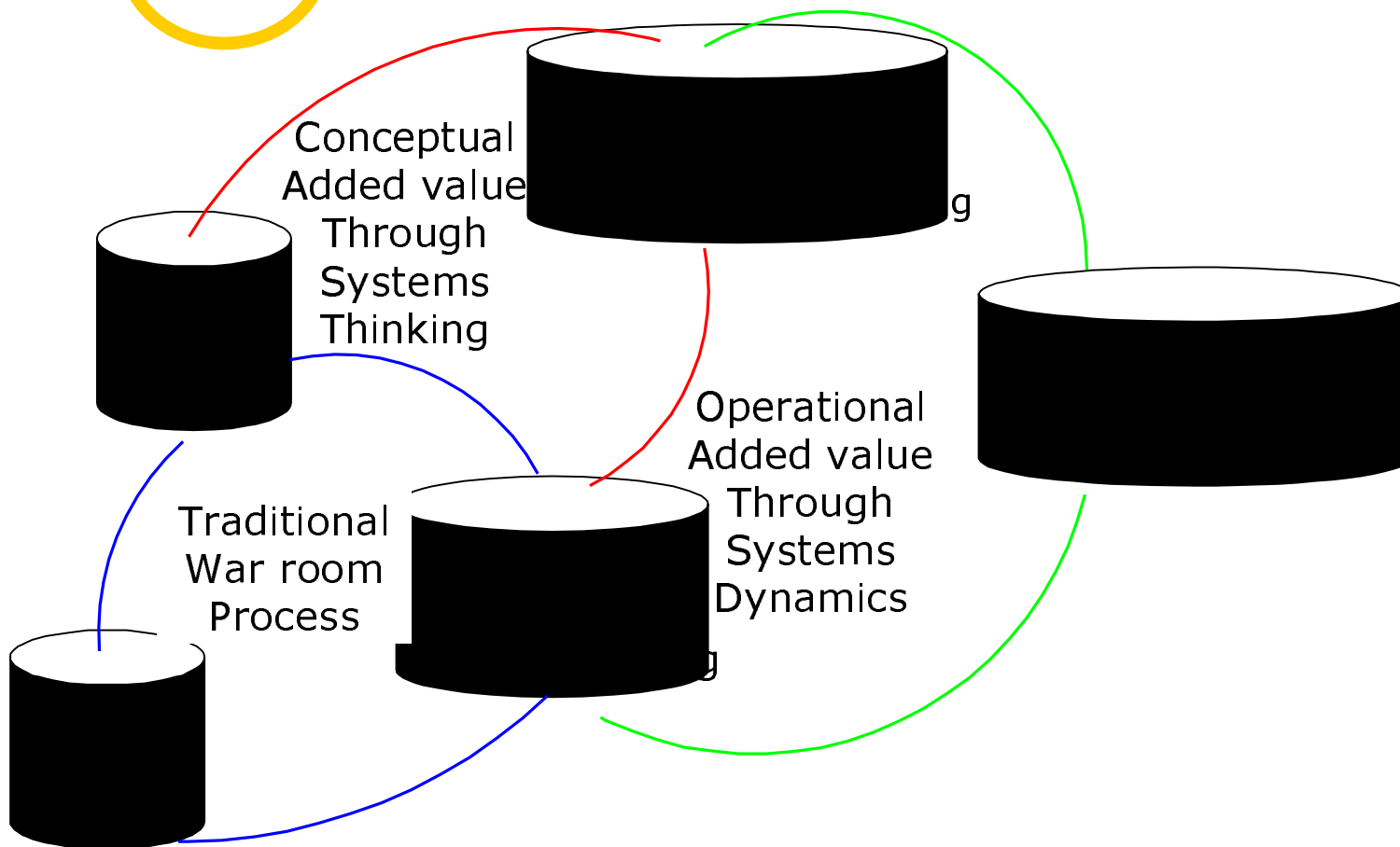


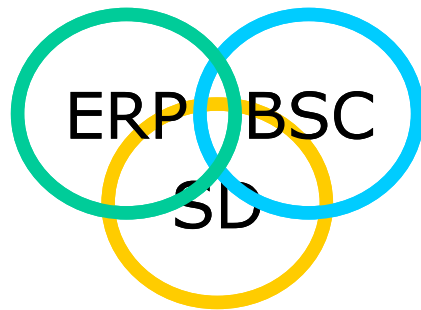
Second stage: every three months

The second stage of integration of these worlds includes picking the most interesting 'issue of the week', and translating its related dynamic hypothesis into a system dynamics mini-simulation model, which will serve as a safe field test for policy testing, in the confined domain of this few original variables.



Second stage: every three months

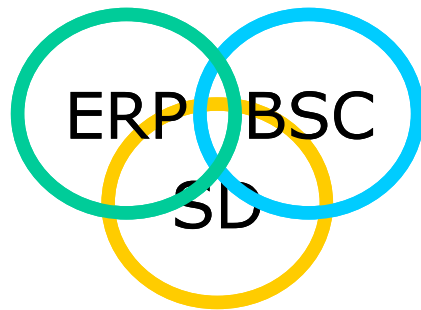




Second stage: every three months

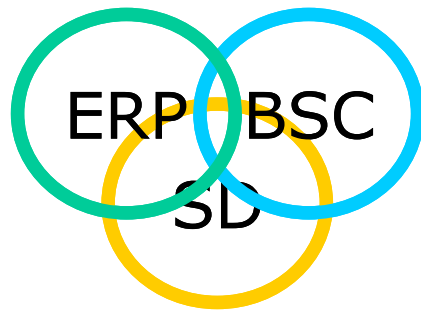
Methodologies used for this stage will include:

- Group model building
- Modelling as learning
- Resource based view of the firm



Second stage: every three months

The value added in this stage consists in adding to the knowledge base of the organization's IS a dynamic simulation that replicates the structure and its related behavior of a problematic issue of interest, offering a safe test field for policy testing and system redesign.

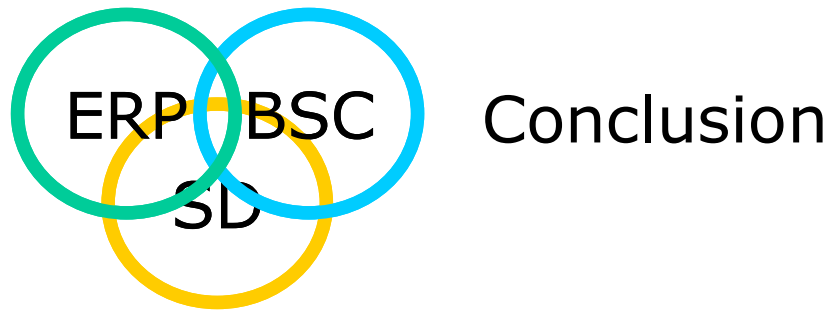


Second stage: every three months

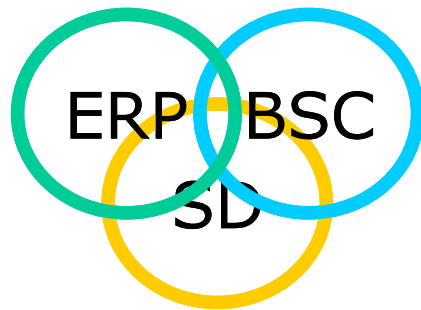
Given the limited time availability in those sessions the scope of the issue should be constrained, therefore allowing to deal with micro-strategic issues of interest, each of them being important for the organization at a given period of time.



- It is important not only to imagine that there might be cause and effect relationships among lead and lag variables, but...
- It is also important to have an experiential and methodological setting where those relationships could be elicited and structured.



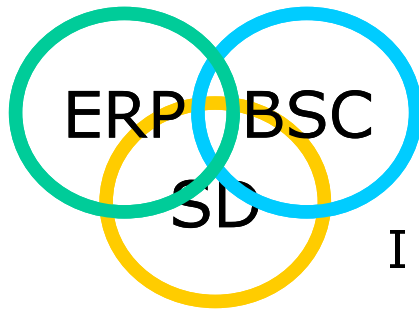
- It is important to sustain a systems and feedback perspective in that structuring process, as complex issues usually have characteristics that require these approaches.
- It is important to give support to policy design in this setting, tackling each time a relevant sub set of issue-generating variables. System dynamics models serve to that purpose.



Suggested future lines of research

- Simpler to use modeling software
- Improve of knowledge elicitation process and conversational systems thinking,

with the purpose of adapting on-the-spot conceptualization and model building procedures to time scarcity.



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BPS:Business Planning and Simulation

Management Cockpit

White paper of Norton about the Balanced Scorecard approach and the Management Cockpit

www.management-cockpit.com : Website from the creators of the Management Cockpit

www.powersim.com: White paper about SAP SEM BPS

www.hps-inc.com: Balanced Scorecard Microworld, along with Harvard Business School