

Behind the EIS Simulation

An overview of models underlying the simulation dynamics

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1. Introduction

The EIS Simulation is a management development tool based on a computer-supported, team-based, experiential and collaborative learning approach. Its roots, from a pedagogical and design perspective can be found in the “Business Navigator” Method, a framework for designing advanced management development tools [1].

The specific scenario included in the EIS Simulation - a change management mission involving the introduction of an Executive Information System in an organizational context - emerged through the collaboration I had with my OB colleague Todd Jick. Our objective was to combine insights gained in studying and teaching the impact of IT projects (Executive Information and Decision Support Systems) in the early nineties, with insights gained in studying and teaching change management, to come up with a realistic organizational change management scenarios extending the models and cases included in [2].

According to the Business Navigator method, the primary objective of the EIS Simulation was to provide a rich, realistic experience of a change management project in an organizational context, rather than the one of conveying or reflecting one or more specific models or theory of change. As discussed in [3], its aims was primarily to help players become more aware of their own models (see [4] for a distinction between “espoused theory” and “theory-in-use”), and of their own limitations (this was the main reason for making the simulation particularly ‘difficult’ in terms of succeeding with the assigned mission – in fact, the average result observed after several thousand runs is only 20-30% of the total score).

A number of models and insights from the literature on change management, as well as more generally from psychology and social psychology, organizational behavior and social network analysis, have been integrated over time in the simulation in order to:

- reflect specific organizational dynamics to increase the realism of the individual or collective behavior displayed by the simulated agents, and
- provide the basis for a rich, theory-based discussion of the players’ teams experience during the debriefing sessions following each simulation run.

Accordingly, two criteria have guided the progressive fine-tuning of all the simulation components and the dynamics generated when the players intervene in the modeled scenario:

- (1) maximizing realism/believability, and
- (2) maximizing the value of the experience in terms of triggering as many insights and issues as possible in each individual player (as well as at the team level).

The following sections provide insights into a number of models that have been embedded in the simulation and then progressively fine-tuned (thanks to the feedback and suggestions of over 50 professionals – some of which are leading researchers in their academic area) according to the two criteria above.

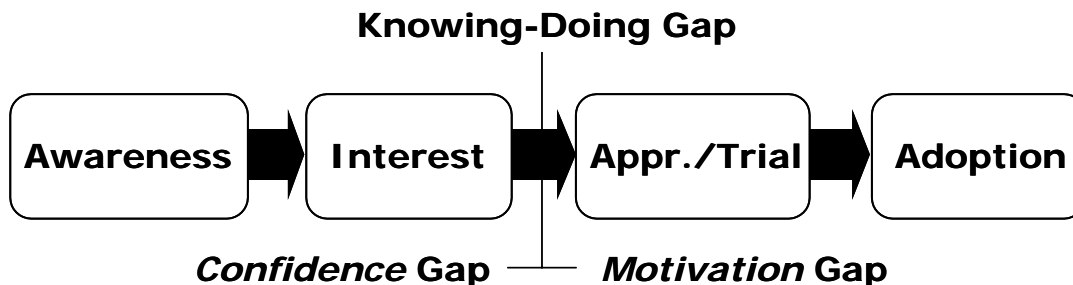
Remark: This document is not an introduction to the EIS Simulation (for descriptions, see the website www.calt.insead.edu/eis, the brief article “Advanced Social Simulations: Innovating the way we learn how to manage change in organizations” [0] at www.calt.insead.edu/eis/socialsims.pdf, or the latest version of the User Manual), but rather a reading for people familiar with the simulation or interested in improving their understanding of the underlying dynamics.

2. Change: An Incremental Process

A first model embedded in the simulation reflects that change – at the individual level - corresponds to a progressive evolution of attitudes. This incremental process has been modeled relying on Roger's adoption and diffusion studies [5]. In his book *Diffusion of Innovations*, Rogers defines the diffusion process as one "which is the spread of a new idea from its source of invention or creation to its ultimate users or adopters". Rogers differentiates the adoption process from the diffusion process in that the diffusion process occurs within society, as a group process; whereas, the adoption process is pertains to an individual. Rogers defines "the adoption process as the mental process through which an individual passes from first hearing about an innovation to final adoption".

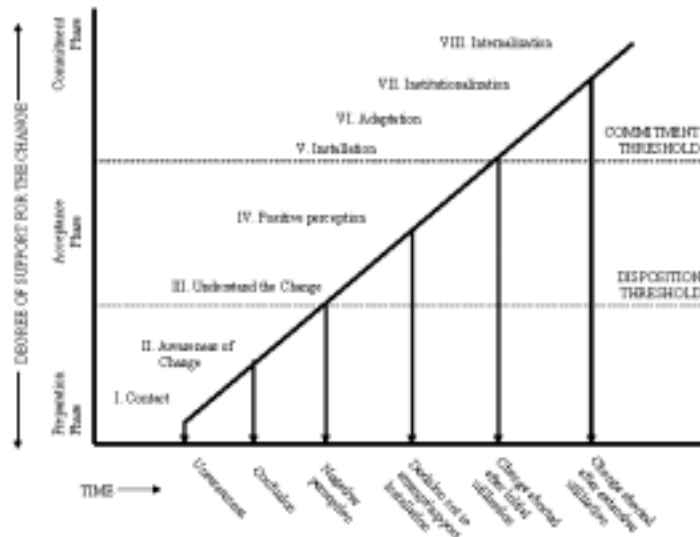
Accordingly, at the beginning of the simulation, all the targeted adopters of the proposed change are still "unaware", and it is the task of the player(s) to help them reaching what Rogers calls the "**Awareness**" stage. In the awareness stage "the individual is exposed to the innovation but lacks complete information about it". Once awareness is reached, the "**Interest**" stage is entered. At the interest or information stage "the individual becomes interested in the new idea and seeks additional information about it". The next stage is "**Appraisal/Trial**", a phase corresponding to Rogers' two stages of "Evaluation" and "Trial". At the evaluation stage the "individual mentally applies the innovation to his present and anticipated future situation, and then decides whether or not to try it". During the trial stage "the individual makes full use of the innovation". The last stage is "**Adoption**". At the adoption stage "the individual decides to continue the full use of the innovation".

A particularly important transition is the one between "Interest" and "Appraisal/Trial", as here the targeted individuals need to be willing and able to start experimenting (and therefore take the risk of failing) with the new change. As discussed in [6], this transition can be easily linked to the work of Pfeffer [7] on the so-called "Knowing-Doing Gap".



This basic model of incremental progression towards adoption (where individuals – depending on internal or external factors) move towards adoption or back towards awareness, can be also related to the work of Conner and Patterson on building commitment to organizational change [8]. Their model is suggested to provide "a cognitive map of how commitment can be generated". The model is divided into three phases: (1) preparation, (2) acceptance and (3) commitment. Conner and Patterson propose a total of 8 stages (see figure below) for an organization or a person to go through when becoming committed to a change goal. The authors claim that each stage indicates a critical juncture, in which commitment can be threatened.

This is represented by arrows pointing downwards in the illustration below. If a stage is completed successfully, advancement to the next stage is possible.











3. Individual Characters: Appreciating Diversity








The simulation also tries to convey the importance of considering that the adoption process takes place differently in different people, as a function of:








- their unique specificities as individuals (history, personalities)
- their initial attitude towards change



The first aspect is modeled in the simulation by the diversity of profiles of the targeted adopters (which are only available if the players invest the time necessary to acquire this information). The idea here is to propose a variety of “stereotypical” characters increasing the probability that learners identify in one or more of the simulated characters their own fellow collaborators or themselves. The current set of characters is listed below, as it emerged from progressive fine-tuning and specific intentions (such as having a character like Ivan Skull, whose attitude is mainly a function of his own unresolved problems).

	Ann Finkelbaum	CEO	Went to prestigious university and likes smart people. She aspired to be CEO for many years and got this position 4 years ago. She counts on keeping her CEO job for many more years! Even now that her company is part of the EuroComm group, she is well-known to enjoy a high (too high?) level of autonomy. She succeeded in developing a select team of very loyal subordinates. She's definitely results and budget oriented. Active in local charities and business council.
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	Bart Bell	Ext. Fin. Controller	Very skillful in collecting and managing financial data. Careful in providing information to the right people, and keeping it from others. Seen as the major source of information to the parent company. Would like to see more flow of information up from the regions. Spends two days per week at the company.
	Cynthia Jones	Pers. Assistant	One of the company's high potentials. Has been in this premiere assignment for two years. Very protective of the CEO and thus loves the ability to schedule appointments, screen information and set directors meeting agendas. Has wide exposure to the major issues in the business.
	Donald Pierce	Dir. Manuf'g	With over 20 years in the company, this hard-working executive has had wide international experience. Developed a personal network of trustworthy individuals. Believes strongly in traditional manufacturing principles. Travels on a monthly basis to factories in different regions of the world because it's the best way to keep in touch with what's happening.
	Ernest Stone	Dir. Customer Rel's	Proud of the customer relations team built over the last few years. Loves the interaction with customers and all the lunches and dinners. Very sociable in his style and actively attempts to empower his direct reports. Very good with "internal customers", particularly those above him.
	Frank Scotti	Dir. Design	Loves to propose new and wild ideas. Spent more than a decade in the laboratory. Always the first to bring up the latest thinking from something he has read. Tends to annoy a lot of the old-timers, because the promise is always greater than the actual delivery. He wishes he could be a bit more organised himself.
	George Glenn	Dir. Human Res.	A strong believer in the potential of the Human Resources function, but frustrated by its passive "reputation". Trying to professionalise the work, and be more responsive to the business strategy. Seen as a "people person" who enjoys his relationships. Active in local charity organisations.
	Hillary Ross	Dir. Finance	Seen as responsible for the cost controls of recent years. Came to position with lots of business school credentials and later seen as another MBA, "Master of Brutal Action". Strong believer that the business requires real transformation but only in cost savings.

	Ivan Skull	Europe Factory Mgr	Some of the factories are meeting quotas, but others are not. Absenteeism problems are prevalent in Southern European factories, while turnover is high in some Northern European factories. Knows that his job is at risk if results do not improve quickly.
	Jean Bonnain	U.S. Factory Mgr	Always searching for the latest manufacturing systems. A big advocate of continuous improvement. Known to be a "leader of leaders" due to a very participative management style. Loves to roam the factories and informally talk with employees. Brings a lot of personal motivation in his approach.
	Ken Lee	Asia-Pac Factory Mgr	A company veteran assigned to the fastest growing region of the world. Brings a lot of discipline and detail and seen as a "solid" manager helping others to learn the craft. Facing what is probably the last assignment of his career, he is having some trouble with the pace.
	Linda Dubois	Public Rel'ns Mgr	Smooth as silk, she works very well internally as well as externally. Very highly regarded by the other Customer Relations managers, and her own staff. Arrived a few years earlier from a well known advertising firm. Knows how to create effective messages and keep a positive outlook.
	Mel Schmidt	Sales & Mktg Mgr	A very likable and sociable individual. Grew up in sales and later added marketing. Covering an account remains a great source of joy, as well as helping the new salespeople to develop. Constantly involved with spotting new trends in the marketplace.
	Nick Meyer	Quality Mgr	A long time advocate of quality, long before it became fashionable. Very attached to strict disciplines and well proven approaches to quality. Does not like to jump from one fad to another, but likes to stick with what is known. Active in church groups and a strong believer in "family values".
	Omar Schal	Laboratory Mgr	A true technician who loves to test the viability of new concepts and knowledge. Loves to read and write articles, and attends one conference per quarter. Not always clear on how to commercialise ideas and make them profitable. Does part-time teaching in the local university. Prefers that decisions be passed up to the boss or be done by the whole team.

	Pam Kahn	Product Des. Mgr	Very systematic approach to product design. Believes that it is better to be precisely right, even if delayed, than imprecise. Well respected by others in the Design Department.
	Quentin Ryan	Mfg Design Mgr	Constantly on the go looking for ways to turn ideas into products that are easier to manufacture and into more efficient manufacturing processes. Understands that Customer Relations sometimes overpromise, but not very tolerant if others do so. Interacts well with Manufacturing people, only rarely stepping on their toes.
	Rob Boss	Training Mgr	Helps plan internal training programmes, sometimes with the help of the line managers, but it never seems to be adequate enough. Occasionally calls in local specialists to participate in short sessions.
	Silvia Linn	Comp & Ben Mgr	Manages the traditional personnel function for salaried employees. Viewed as generally trustworthy, but compensation and benefits are only average compared with the rest of the industry. Preoccupied with hiring consultants to do feasibility studies.
	Tina Fein	Org'l Eff Mgr	Strong advocate of a learning organisation, re-engineering, and empowerment. Came recently with lots of new ideas learned from an innovative world class company, immediately introduced successfully in Asia-Pacific. Caused a lot of difficulties for the Compensation & Benefits Manager due to incompatible systems.
	Urs Dodd	Logistics Mgr	Responsible for utilisation of all office space, meeting rooms, cafeterias, and security. Produces policies and procedures to ensure consistency. Believes strongly that some bureaucracy is absolutely necessary to maintain an orderly workplace. Wants to develop and communicate common approaches.
	Victoria Strong	Treasury Mgr	Everybody told you that she is friendly and cooperative, but nobody seems to be willing or able to provide you more detailed background information about her. Hard-working, often busy with bankers away from the office.

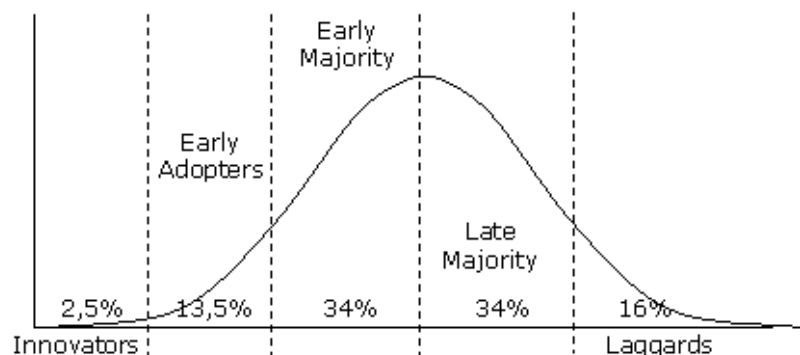
	Wilma Long	Purchasing Mgr	Responsible for purchasing worldwide, which was recently consolidated to save costs. Despite feeling initially overworked, understaffed, and stressed, operating rules and systems seem finally to have fallen into place.
	Xavier Ras	Legal Affairs Mgr	Recently brought in from a prestigious law firm to head up the legal affairs team. Prides himself on preventing the exposure of sensitive information, and in maintaining the highest ethical standards. He has already built a risk averse reputation to protect the company from impulsive actions.

Besides their individual profiles hinting to their history and background, the personality of each individual is modeled through variables reflecting:

1. each individual's preference structure in terms of interaction (with some of the characters preferring direct, face-to-face contexts while others welcoming less direct ways of interacting such as written communication or email). This preference structure is currently parameterized to reflect a strong preference for direct, personal exchanges.
2. a degree of difficulty in moving the individual between the different stages of the change management process, i.e. to capture his/her **Attention** (in order to create awareness, influencing the character's knowledge and beliefs), his/her **Trust** (in order to raise interest in a credible way, influencing the character's desires and goals), and to match his/her needs for support through **Presence** and **Collaboration** (to have the character progress through the Appraisal/Trial phase, influencing his/her intentions and level of commitment), reflecting in broad terms the typical BDI (Beliefs-Desires-Intentions) architecture underlying the implementation of intelligent agents.

The second variable has been parameterized and progressively fine-tuned in a unique way for every individual character in order to maximize diversity in terms of reactions to attempts (actions/initiatives) aimed at having the character progress through the different change stages, but at the same time paying attention to reflect as much as possible the Innovation Adoption Curve of Rogers [5], which classifies adopters of innovations into various categories, based on the idea that certain individuals are inevitably more open to adaptation than others. At the leading edge you have a few who may be perceived as crazies or fanatics, followed by some likely champions who are credible and are more willing to try new practice. Another 20 percent or so will make up the rest of those who are relatively positively inclined towards innovation, particularly once others have been convinced. Beyond that the challenges are greater. The last portion of the distribution consists of skeptics who resist very strongly and actively. In the middle is a collection of people who are neither angry nor particularly interested. Once many people have tried the practice and like it, it is easier to move toward widespread adoption. According to Rogers, the categories can be specified as follows:

- (1) Innovators - they are very eager to try new ideas. This interest leads them out of local circle of peer networks and into more cross-functional relationships. Communication patterns and friendships among a clique of innovators are common, even though their distance (functional, geographical, etc.) between the innovators may be considerable. In order to be an innovator, there are several prerequisites. These are control of substantial financial resources, the ability to understand and the ability to apply complex technical knowledge. The innovator must also be able to cope with a higher than average degree of uncertainty.
- (2) Early adopters - they are a more integrated part of the local social system than are innovators. They have the greatest degree of opinion leadership in most social systems. Potential adopters look early adopters for advice and information about the innovation. The early adopter is considered as individual to check with before using a new idea. They are respected by their peers and are the embodiment of successful and discrete use of new ideas.
- (3) Early majority - they adopt new ideas just before the average member of a social system. The early majority interacts frequently with peers, but seldom holds leadership positions. The early majority's unique position between the very early and the relatively late to adopt makes them an important link in the diffusion process. They provide interconnectedness in the system's networks. They may deliberate for some time before completely adopting a new idea. Their innovation-decision period is relatively longer than that of the innovators and the early adopter.
- (4) Late majority - They adopt new ideas just after the average member of a social system. They don't adopt until most others in their social system have done so. They can be persuaded of the utility of new ideas, but the pressure of peers is necessary to motivate adoption.
- (5) Laggards - They are the last group to adopt an innovation. They possess almost no opinion leadership. Decisions are often made in terms of what has been done in previous generations and these individuals interact primary with others who also have relatively traditional values.



4. Networks: The Power of Relationships

Another important dimension of the dynamics underlying the EIS Simulation is the inclusion of the both formal and informal networks. These networks contribute in determining the attitude of the targeted managers as a function of social influence, and take the form of:

- influence and power models
- tipping point dynamics.

Social influence or contagion models (see relevant literature sources [9-14]) and power networks [15]) assume that opinions and attitudes of actors in a social system only partially depend on individual characteristics but are also shaped by social influence. The social influence part is represented in an influence network, reflecting the dyadic influence of actors on each other. In the simulation, networks are determined by a subset of individuals, a level of formality, a matrix determining internal influence pattern, a network 'updating frequency' (determining how often a given network is used to update individual's attitudes) an internal and an external network 'strength' (determining the importance of influence among individuals belonging to a given network and the importance of the dominant opinion of the network on the individuals not belonging to the network).

The concept of tipping point refers to a term popularised in a recent book by Gladwell [16] based on studies of social network analysis pioneered by Milgram [17] and illustrated in recent books such as [18,19]. The impact of these models on management and particularly on change management situations has been discussed in [20]. Within the simulation, these models have inspired a number of adaptations, based on the assignment of a pivotal role to 5 of the individuals modelled in the simulation, playing the role of *Mavens*, *Salesmen*, and *Connectors* in Gladwell's [16] terminology, and determining in large part the 'optimal' diffusion dynamics and the system reaction to players'-triggered actions such as compulsion (which is for instance not successful unless all these 'key' individuals have been convinced to adopt).



Graphics from Professor Brian Uzzi, Northwestern University.

5. Culture: The Power of Values and Rituals

The 'culture' of the modeled organization in which the players accomplish their change management mission is another dimension determining the dynamics of the simulation. Deshpandé and Webster [21] defined organizational culture as a "pattern of shared values and beliefs that help individuals understand organizational functioning and thus provide them with the norms for behavior in the organization". More specifically, Deal and Kennedy [22] describe culture as the single most important factor accounting for success or failure in organizations, emphasizing four key dimensions:

1. Values – the beliefs that lie at the heart of the corporate culture
2. Heroes – the people who embody values
3. Rites and rituals – routines of interaction that have strong symbolic qualities
4. Network – the informal communication system or hidden hierarchy of power in the organization

Given that point 4 has been emphasized separately (see section 4), the other three points determine currently the 'cultural' layer modeled in the simulation, influencing the reaction of individuals to the use of specific change management tactics (considered as appropriated or not in the given organization). Examples of values are beliefs that in this organization direct tactics such as face-to-face meetings are more effective ways to approach individuals than indirect tactics such as sending emails (perceived as impersonal and insensitive of the local culture). Rites include the necessity to persist meeting and reporting back to key individuals in spite of their rejecting attitude.

In addition, this layer, modeled through a set of meta-rules, has enabled to introduce in the simulation over time a number of specific dynamics related to participative management [23] and to distributive justice [24-26]. Both factors have a significant influence when players adopt strong-arm or covert tactics, which, in the modeled culture, typically generate long-lasting negative reactions in the majority of the modeled individuals.

6. Actions and Events

Actions determine how players can intervene in the organizational context to either gather information (about individuals or networks) or try to influence the attitude of individuals (targeted tactics), groups of individuals (group tactics) or everybody at the same time. The initial set of possible change management tactics was derived from [2] and then expanded and fine-tuned progressively to include the following tactics:

DIAGNOSTIC ACTIONS
TASK FORCES: Discover which top managers are on the company's three main task forces. (1 day) NOTE – These membership lists will not change, and will remain available throughout the simulation.
COFFEE BREAK: Spend some time at the company bar in order to see which groups of top managers meet regularly for a coffee. (3 days) NOTE – These groups will not change, and the list will remain available throughout the simulation.
NETWORKS: Spend some time observing or finding out which top managers go together regularly to the company health club, who is involved in the local charity

campaign, and who is looking informally at environmental issues together. (5 days) **NOTE** – These groups will not change, and the lists will remain available throughout the simulation.

PERSONAL PROFILE: Build a personal profile on any five members of the top management team by talking informally with your network at EuroComm HQ. (2 days) **NOTE** – Each person's profile includes a qualitative description of the individual and an indication of how difficult it will be to move that individual through the four change phases.

PROCESS TEAMS: Interview and observe a large cross-section of staff to determine the way they interact with each other in the course of their day to day work. This results in a Process Map, a schematic that defines the main processes and who is active in these processes. (5 days). **NOTE** - Process membership will not change, and will remain available throughout the simulation. This information is accessible by clicking on the button 'Org. Networks'.

AWARENESS-BUILDING ACTIONS

INTERNAL MAGAZINE: Ask the editor of the internal magazine to include a short article you write on the advantages that Executive Information Systems can bring to managers. (3 days) **NOTE** – This magazine is distributed to all of the top management team. The article is about the generic advantages of EIS, and does not include any company specific information.

ELECTRONIC MAIL: Send a brief electronic mail to everyone on the top management team explaining your ideas on why an EIS makes sense for them. (1 day) **NOTE** – All of the top managers have an individual E-mail account.

FACE-TO-FACE MEETING: Fix a meeting with one of the top managers in order to persuade him/her that the EIS would make sense to implement. (1 day) **NOTE** – The meeting will take place in the manager's office.

MEMORANDUM: Write and send to any five of the top managers a brief memo on how some of the specific features of the EIS will improve transparency of information flows in the company. (1 day) **NOTE** – This is distributed in the company internal mail system.

INTEREST-BUILDING ACTIONS

SEEK ADVICE: Organise a meeting with any one member of the top management team in order to get some advice on how to approach the EIS project in the most effective manner. (2 days) **NOTE** – You will not actually receive advice in the feedback message; the aim is to influence the person you visit by taking the 'humble' approach.

FACE-TO-FACE MEETING: Fix a meeting with one of the top managers in order to persuade him/her that the EIS would make sense to implement. (1 day) **NOTE** – The meeting will take place in the manager's office.

MANAGEMENT TRAINING: For five members of the top management team, organise a week long residential training programme at a nearby business school on the potential benefits of an EIS and how to actually use such a system. (5 days) **NOTE** – You do not attend the programme, but it takes a considerable amount of your time to plan it.

WORKSHOP: Help one of the top managers to organise and lead a demonstration and discussion session on EIS for all the top managers interested in the topic. (5 days) **NOTE** – This will provide the opportunity for the workshop leader to share and gather views and experiences on EIS.

STAFF MEETING DISCUSSION: Develop a slide show on the EIS, and present it during the regular weekly top managers staff meeting. (5 days) **NOTE** – The presentation includes potential applications of the EIS within the different departments. All members of top management are in principle expected to attend these meetings.

QUESTIONNAIRE: Write and distribute to all the top managers a questionnaire aimed at assessing their current level of interest in becoming regular EIS users. (2 days) **NOTE** – The main objective of using this questionnaire is to demonstrate your approach to the project rather than gathering additional information.

EXTERNAL SPEAKER: Organise a speaker event in which Professor Tom Petersen, an expert on Executive Information Systems, will deliver an address entitled: "EIS: Liberating Information in the Organisation". (5 days)

ACTIONS TO SUPPORT APPRAISAL/TRIAL

DIRECTORS MEETING: Organise a special interdepartmental meeting in the main conference room with all the five directors and the CEO to share and discuss thoughts and plans for the EIS project. (3 days) **NOTE** – Directors are informed that they can also bring along Managers from their department.

FACE-TO-FACE MEETING: Fix a meeting with one of the top managers in order to persuade him/her that the EIS would make sense to implement. (1 day) **NOTE** – The meeting will take place in the manager's office.

PILOT TEST: Try to get commitment from one of the top managers by asking him/her to organise a two-week-long pilot test of the EIS in his/her department using current company data. (4 days) **NOTE** – This will involve setting up the EIS on all the department's computers and providing users with the appropriate training.

DINNER EVENT: *Invite one member of the management team to a formal dinner you organize for the benefit of some local government officials and business relations you have known for many years. (3 days). NOTE - You are not sure that the manager will accept your invitation and that you will actually be able during the dinner to find the appropriate opportunity to talk to the manager about the project.*

TASK FORCE: *Select up to five managers to join you in a Task Force of change facilitators or 'champions', who are to help develop and implement the proposed changes and eventually influence and train all staff. (5 days). NOTE - If successful (in case all the selected managers will join your Task Force) the team will be active until the end of the simulation.*

RISKY ACTIONS

DIRECTIVE: Try to convince the CEO to send out a directive to everyone on the top management team insisting that they start using the EIS in two weeks' time. (7 days) **NOTE** – You spend several days writing a draft of this directive to give to the CEO.

COVERT LOBBYING: Without the formal approval of the Directors concerned, suggest to a group of selected Managers that they meet the CEO to lobby for the implementation of the EIS. (8 days) **NOTE** – This initiative assumes that you have identified the appropriate Managers to approach, and does not require you to specify them.

OR

THE 'SANDWICH': *Suggest to a group of selected managers who already show strong interest in the project but whose Directors are still unconvinced, that they*

should lobby the CEO to talk to the Directors. (4 days). NOTE - This initiative assumes that you have identified the appropriate managers to approach, and does not require you to specify them.

NEUTRALIZE RESISTERS: *Suggest to the relevant Directors and/or CEO that some outspoken manager resisting and potentially slowing down the project should be promoted to a sideways position away from the project. (3 days). NOTE - You only need to identify the appropriate manager to be promoted away. It is assumed you will be talking to the appropriate authority for such decision. You'll be able to use this tactic only once!*

The reaction to each tactic is a function of its direct parameters (individuals directly involved), its timing, as well as the history of the intervention. In general terms, tactics are considered 'appropriate' as a function of the stage of development of the individuals targeted (see figure above). Each tactic has then been modeled and fine-tuned individually to increase believability of the feedback.

In particular cases, tactics have been modeled to trigger the discussion of specific issues (linked to pedagogical objectives). For instance, the 'Directive' tactic has a particularly negative impact (unless all the key individuals have been already convinced) to trigger the discussion of when compulsion is appropriate in organizational contexts, its positive and negative consequences (linked to the above-mentioned [23-26]). The extent to which impatience can drive us to use strong-arm tactics such as covert operations ("sandwich" tactic), and their impact on trust-building are typical discussions triggered by the negative reactions the players experience when implementing guerrilla tactics implicit in turf battles (see e.g. [27,28]). The very mild impact of inviting external players at a time when resistance is still string has been modeled to trigger discussion about internal versus external approaches to managing change processes, and the appropriateness of outsourcing parts of the process (see e.g. [29,30]). Similarly, the importance of gathering early enough in the process information about informal relationship networks is particularly stressed in the simulation in order to trigger a discussion based on the literature sources mentioned in section 4 related to influence networks, social network analysis and tipping points dynamics.

In addition, a variety of sources documenting how people argue when expressing different forms of resistance to change (or to new initiatives in general, as documented in [31]) have been included to fine-tune the feedbacks resulting from implementing different tactics. The table below provides an overview of statements resisting individuals are likely to use in order to directly or indirectly express such as fears of losing *Identity, Quality and Job Satisfaction, Ethical* arguments, *Trust*-related issue, values such as *Openness and Connectedness/ Belonging*, attitudes such as *Status-Quo Satisfaction* or *Unwillingness* to produce additional *Efforts*, discomfort with the *Pace of Change*, tendencies to protect existing *Processes* and *Power* structures, or *Fear of Incompetence* (particularly when faced to new technologies).

Example ARGUMENTATIONS (currently included)
We need to verify the quality of our information management processes, such as who does what and when, and who accesses what and why!
Our leadership guarantees the ultimate quality of what we do within the company!
Access to information - for instance about people performance or about the financial situation - needs to be protected from abuse!

It is not by changing our IT systems that we will reach higher-quality decisions and collaboration!
The way we distribute information reflects perfectly our current way of operating. This will not change, isn't it?
Real information exchange can take place only when people meet in face-to-face contexts
You know, deep down I believe that too much transparency is not necessarily a good thing!
For the time being, our systems are more than sufficient for us.
Our people don't want to access relevant information at their PCs. Technology kills true information exchange and communication!
I care about employee's satisfaction and I am afraid that these innovations will have a negative impact!
You know, we already spent a lot of time to make our current systems at Teleswitches really user-friendly!
Do you seriously think that our managers are willing to switch so easily to a totally new system? I am afraid they will simply not use it!
Teleswitches is different from other companies within the group, we have a very specific identity and we want to keep it.
And what about trust? Today, within Teleswitches, we all trust the information sharing systems and processes we have put in place!
I doubt that people in other departments at Teleswitches will be willing to move so fast to a totally new way of operating!
Our managers are happy and proud of our company's results, and these great results are also a consequence of the high-quality systems and processes we have been able to put in place over the last years! Changing now wouldn't make a lot of sense!
Come on! How can you make us believe that people can increase their performance just because of a new information and reporting system!
Thank you for the memo, but please don't forget that here at Teleswitches we know how to interpret the information we share through our own systems. Will people at HQ be able to do the same once your new EIS will be in place?

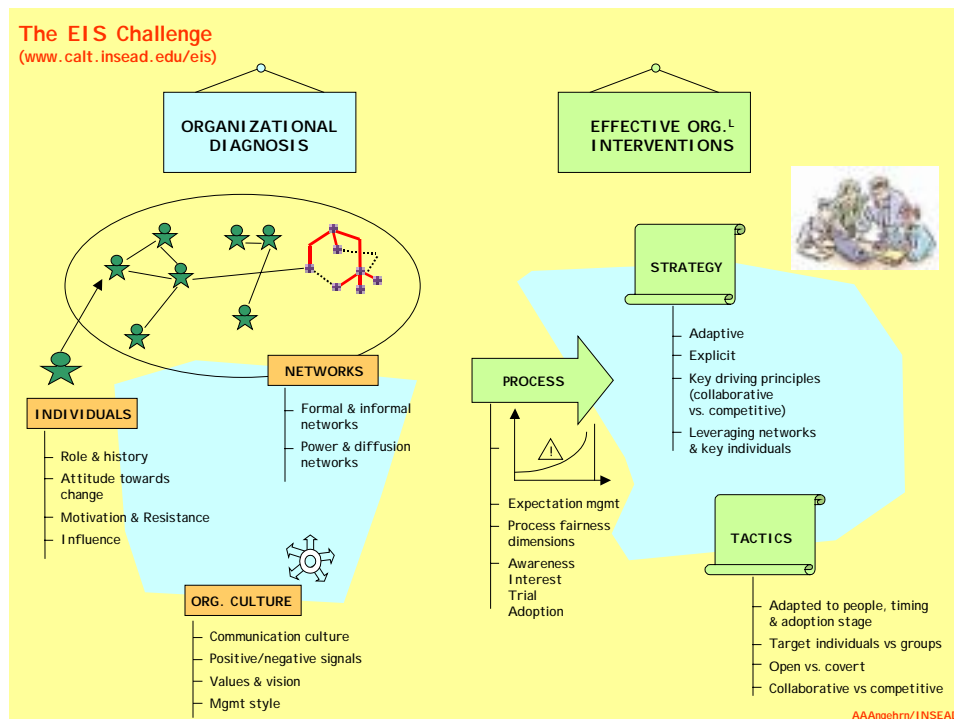
Events, i.e. dynamics which are not directly triggered by an action implemented by the players, but by internal rules, have been further included in the simulation to emphasize the impact of certain individuals (who use for instance themselves certain tactics – such as writing a negative article on the company newsletter - to influence their peers), the role of networks (for instance by making the players aware of the negative or positive impact of the members of a given network) or of the culture of the organization (for instance by communicating to the players the negative consequences of ignoring or bypassing specific 'gatekeepers' in disrespect of local, organizational protocols).

Events have been also progressively inserted to address pedagogical objectives and triggering – during the debriefing phase – discussion on specific points such as facing budget problems, allocating too few or too much time to the initial strategy-building phase, regularly reviewing the initially developed strategy, reacting to time pressure from the headquarter (which has appointed the players to the change management mission), or facing the fact that key individuals might suddenly leave the company during the implementation process.

7. A Few Pedagogical Considerations

The EIS Simulation has been used in different contexts by a variety of users (see for instance a recent list of academic users at www.calt.insead.edu/eis/acadusers.pdf). The 1,5 to 2 hours simulation sessions typically generate a large amount of insights and issues participants are prepared and eager to discuss (also given the rather 'unsuccessful' experience in achieving their mission). The illustration below provides a map of typical discussion topics emerging after the simulation. The map includes several issues discussed in the previous sections, but in spite of its breadth it is only a limited overview of the variety of topics which have been successfully addressed in debriefing sessions, which include for instance the use of the simulation to stimulate reflections about participants' decision making styles and dynamics during the session (which represents a complex managerial task to be addressed under severe time constraints) or in-depth discussion about management of emotions (triggered by substituting a number of pictures – typically the ones of the simulation characters which are most 'hated' given their strong resistance – with the pictures of real individuals with whom participants are unexpectedly confronted directly after the session).

Managing a successful debriefing session consists often in finding a good balance between 'pull' and 'push', i.e. between facilitating collaborative learning – letting the participants identify the most relevant issues and insights and share their experiences in facing complex situations such as the ones encountered in the simulation – and taking the opportunity to focus the debriefing on specific issues (through the presentation and discussion of theoretical insights such as the ones included in the reference section, or of a given change management model) as a function of the needs of the participants and the objectives of the session or course in which the simulation is integrated.



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