9: Creating the Climate – Disruptive Innovation Ecology

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In what conditions can Disruptive Innovation flourish?

Well-defined processes are not sufficient. This chapter is about the "environment", "climate", or "organisational ecology" in which disruptive innovation is enabled, or better still, is encouraged and flourishes.

What is disruptive innovation ecology?

As in the physical ecological world, disruptive innovation ecology is about interactions between the different elements of the system, it is about (organisational) climate, it is about the delicate balance between conflicting forces, it is about the conditions which might lead to renewal or stagnation.

Unlike the physical world ecology, the innovation enabling ecology is related not only to physical phenomena but also to less tangible factors, such as cultural and organisational ones.

According to George Por (2001), a successful work ecology is a *"complete, organic, Ecosystem. It integrates many disciplines together to produce a dynamic, holistic view of the workplace and its relationship to its environment. It addresses all elements that make up today's high velocity, rapidly changing workplace, especially the way they interact in the form of work to produce the outcomes needed by the enterprise and its stakeholders"*. It is a rich "stew" of interdependent elements, continuously interacting and adapting to produce outcomes that ensure the vitality and sustainability of the enterprise (Por, 1999).

Great leaders create conditions that bring out people's ability to produce extraordinary results. Central to that task is the creation of a climate for innovation, which is a force field that guides managers and entrepreneurs towards innovation – or against it (Pinchot & Pellman, 1999).

Innovation Enabling Ecology is the work environment that can enable, encourage, foster, and catalyse the generation of ideas and creation of value out of them. It supports individuals, teams, and the whole organisation in the journey towards sustainable growth and success that are based on the balanced portfolio of innovation covering incremental, radical and disruptive innovation.

Is a “disruptive innovation ecology” different from a “normal innovation ecology” which addresses the desire of the organisation and its people to enhance incremental or even radical innovation? Yes and no:

No, because the set of building blocks is the same – time space, physical space, enabling leadership, challenge, tolerance to failure etc – all are important to all kind of innovations.

Yes, because Disruptive Innovation is much more fragile, easy to kill and difficult to create and promote – internally and externally. Sometimes it calls for self-cannibalism, sometimes it means ignoring what the current customers say, sometimes it forces the engineers to develop less sophisticated solutions and the sales people to offer leaner solutions, sometimes it means that managers need to abandon what they excel at. It means “business **not** as usual”.

The implication is that some Innovation Ecology building blocks need to be applied more extensively in the case of disruptive innovation. The role of leadership is more critical, the impact of the organisational structure is stronger, the way that risk-taking and failure are approached deserves more attention.

The Innovation ecology is composed of the twelve constructs shown bellow (and possibly other elements special to the unique situation of each organisation):

Building block 1: TIME Space

Building block 2: ORGANISATIONAL SPACE

Building block 3: PHYSICAL SPACE

Building block 4: VIRTUAL SPACE

Building block 5: STRUCTURED PROCESSES vs. SPONTANEITY

Building block 6: KNOWLEDGE MANAGEMENT

Building block 7: DIVERSITY

Building block 8: ATTENTION to the FUTURE

Building block 9: CHALLENGE

Building block 10: TOLERANCE of RISK and FAILURE

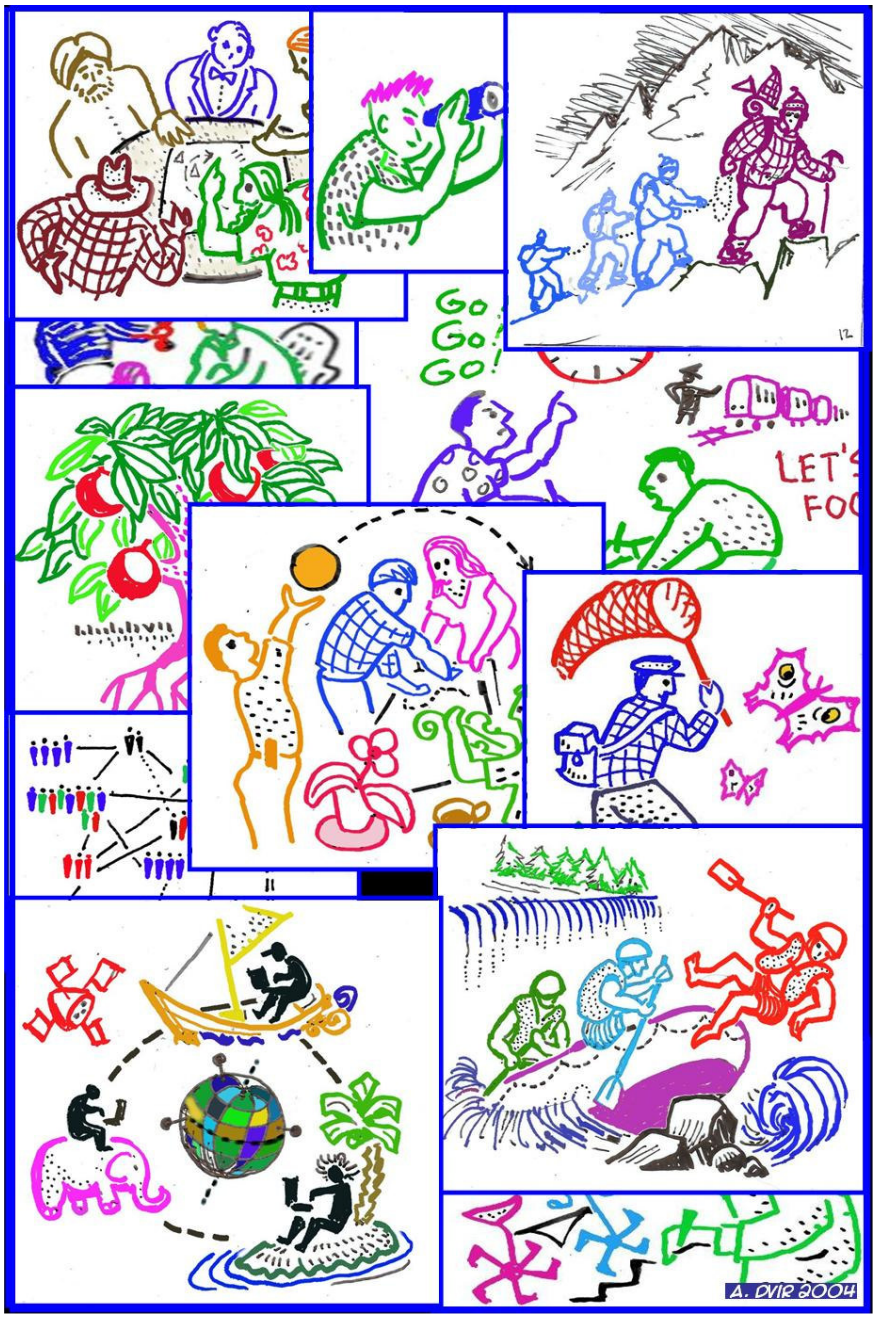
Building block 11: RECOGNITION & REWARDING

Building block 12: LEADERSHIP

The cement: CONVERSATIONS

The building blocks of DI Ecology

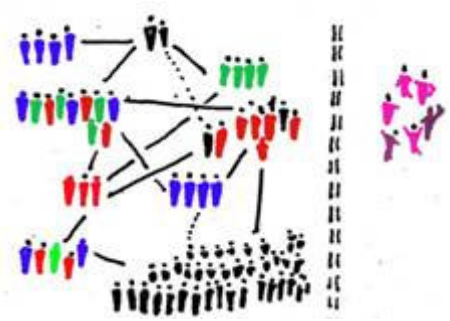
Note: some of the content of this section is modified from Dvir and Pasher, 2002.



Building block 1: TIME Space

New ideas require exploration before their value can be demonstrated to others. Innovative organisations give people the freedom to use some of their time to explore ideas without having to ask permission (Pinchot & Pellman, 1999). In many organisational surveys, "lack of time" appears as the Number 1 obstacle for innovation. The solution of 3M is well known: their 15% rule states that every employee can use up to 15% of his/her time on ideas not related to daily work and responsibilities (Kanter et al, 1997).

Building block 2: ORGANISATIONAL SPACE



Flat organisational structure, weak boundaries between departments, low emphasis on hierarchy, and perhaps even a loosely defined structure increase the chances that the organisation will enhance, rather than inhibit, the generation, flow and leverage of ideas. Organisational forms are of fundamental importance to innovation. Different kinds of innovation have different characteristics and require different organisational forms and managerial approaches in order to be successful (Damaskopolus, 2002). Integrated project teams, multi-disciplinary teams, virtual teams, future centres, and internal incubators are examples of forms that contribute to innovation. Christensen (1997) claims that in many situations, spinning off an independent organisation is the most sustainable way to protect and realise disruptive innovations. Hamel (2000) articulates the need to isolate the work on radical innovation at certain phases, but integrate it into the organisational mainstream later-on. It is the fact that Disruptive Innovation is closely related to “self cannibalism of or existing products” that makes the spinning-off option so important in certain situations.

Building block 3: PHYSICAL SPACE

In an economy based on innovation, what better use can there be for space than to inspire creativity? Several innovative organisations believe that creative space – both the shared space and the private office – can significantly contribute to the organisational atmosphere of wild ideas, action, chaos, open mind, and barrier-breaking. (Liber, 2001, Ward V., 1999). The playful design of IDEO's Boston offices invites employees to play with ideas, think out of the box, and break the rules. At IDEO, they believe that at its best, space can inspire and amuse. The merging of fun and work is invigorating (Kelley, 2000).

Building block 4: VIRTUAL SPACE

in many innovative organisations of the 21st century, technology has multiple supportive roles, such as facilitating collaboration between distant members and streamlining and catalysing the flow of ideas, as demonstrated forcefully by BT's ideas management Intranet system (Lakin 2001). Information Technology enables information and knowledge transparency and exchange. Some organisations that have developed creative physical spaces are now considering how to complement them with virtual spaces. Research of virtual scientific collaborations showed that virtual conferencing provides the participants with adequate means of exchanging and creating knowledge, provided that a sense of "presence" and "being there" is created (Towell and Towell, 2001). Nonaka, when discussing the concept of Ba, a space for knowledge creation, suggests that it can also take a virtual form, a "Cyber Ba" (Nonaka, 1998). Technology can support creative thinking – in the last 10 years many software tools have been developed towards this aim, based on different models of creative and inventive thinking (Moulder, 2000).

Building block 5: STRUCTURED PROCESSES vs. SPONTANEITY

Many studies have found that serendipity is a key to recurring innovation (e.g. Koeing 2000). Innovative companies must protect the possibility that surprises will occur. Serendipity, intuition, experience, scanning, and relations are sources of surprises (Cope 1998). At the same time, without a powerful process to capture the good ideas and turn them into value, most ideas will vanish without having a fair chance to make their way through a serious evaluation, development and testing funnel. Maintaining a degree of tension between structure and creativity can be useful, and the inherent conflicts between them should not be completely resolved (Brown and Duguid 2001). Here we need to emphasise that structured processes enhance the innovation capability of the organisation, but too much structure and bureaucracy can kill it.

Building block 6: KNOWLEDGE MANAGEMENT

Management of the existing knowledge of the organisation provides a solid foundation for the creation of new knowledge (Ruggles, 1997). Effective treatment of the organisational knowledge resources (experience, expertise, history, lessons learned, best practices, to name some of the typical intangible knowledge assets and intellectual capitals of the organisation) is part of an Innovation Ecology. Similarly, active Business Intelligence enables the organisation to “sense” what its competitors are doing, what its customers need, what is it that over-served consumers don’t need, and what new opportunities are hidden in evolving technologies (Anthony 2004).

Building block 7: DIVERSITY

Similar people will generate similar ideas. Some innovative organisations deliberately increase diversity in the work force. Diverse experiences, cultural backgrounds, professions, academic background, ages, and personalities contribute to the creation of fruitful dialogues based on multiple perspectives (Naimen, 1998). The importance of exploiting diversity is highlighted in the 11.5 ideas of Sutton (2002). . Several of Hamel's "design rules for innovative organisations" refers to the need to intensify diversity: "listen to new voices"; "let youth be heard"; "listen to the periphery"; and "let newcomers have their say".

Building block 8: ATTENTION to the FUTURE

In a turbulent environment, there is continuous tension between the day-to-day challenges, tasks and problems and the need to focus on the future. In organisations that excel in innovation, the top priority issue is the future. In other companies, most management and employee attention is directed to fire fighting and short-term objectives.

Building block 9: CHALLENGE

Open ended, non-structured tasks engender higher creativity than narrow jobs. People respond positively when they are challenged and provided with sufficient scope to generate novel solutions (Ahmed, 1998). Esther Dyson from EDVenture Holdings suggest organisations to focus on problem solving and creative solutions, not on "inspiring innovation" per se (HBR Editor, 2002). Similarly, research showed that creativity under extreme time pressure is enabled when "people feel as if they are on a mission", and when the work is equally oriented toward identifying problems and generating and exploiting ideas (Amabile et al, 2002).

Building block 10: TOLERANCE of RISK and FAILURE

Innovative organisations promote risk taking. Innovation requires learning of new things, experimentation, and pushing the boundaries of the unknown. The leaders of such organisations invite and reward (clever) risk taking, and do not punish mistakes. Failures are taken as golden learning opportunities (e.g. Farson and Keyes 2002, Hamel 2000).

Building block 11: RECOGNITION & REWARDING

Creative people are self-motivated. However, all innovation researchers, leaders and practitioners agree that rewarding innovation can contribute to its success. There is an open dispute about the appropriate mechanisms to reward innovation. In some organisations, there are significant direct financial incentives related to the financial expected contribution of the innovation. For example, in Pfizer, the creative people enjoy a faster career path, salary increases and prizes for individuals and teams (Kanter, Kao and Wiersema, 1997). Gary Hamel (2000) emphasises the need to reward radical innovators with substantial financial rewards, suggesting that “radical business concepts and entrepreneurs energy is the real capital in the age of revolution. No wonder that “idea capitalists expect to be rewarded on a par with other stakeholders”. Others believe that the softer ways are preferred: public recognition, attention from management, and symbolic signs of recognition.

Building block 12: LEADERSHIP

Appropriate leadership is a critical element of a successful Innovation Ecology. This characteristics of leaders that can foster innovation in general and disruptive and radical innovation in particular are already implicitly implied in many of the above Ecology constructs (i.e. leaders that enable innovation culture, put attention on the future, provide open ended challenges and not solutions etc.). These characteristics are discussed in many publications. For example, Farson and Keyes (2002), say that the innovation-enabling leader "moves beyond success and failure", "gets engaged", "analyses rather than praises", ""earns empathy", "collaborates", and "gives the green light".

The cement: CONVERSATIONS

According to Nonaka's spiral model of knowledge creation (1998), the process is based on the conversion of knowledge:

- Combination: From explicit knowledge to explicit
- Internalization: from explicit to tacit
- Externalization: from tacit to explicit
- Socialization: from tacit to tacit.

Conversation (including contemplation, which is an inner conversation) is instrumental to these four knowledge conversion phases. Ideas are created at conversations (and contemplation), and are enhanced and developed through conversations (Stewart, 2001). Alan Webber argues that "*Conversations inside and outside the company are the chief mechanism for making change and renewal an ongoing part of the company's culture*" (quoted in Stewart, 2001). Therefore, they are a core element of an Innovation Ecology. A close examination of the other elements elaborated above

shows that most of them support and enable conversations. For example, the physical space, the virtual space, the time space, the challenge space (which calls for meaningful conversations), diversity – all are important enables of innovative conversations. Therefore, the conversation has a special role in the set of Innovation Ecology principles, as a unifying element (Dvir and Pasher, 2004).

Additional 11.5 weird ideas

In his provocative book "Weird ideas that work – 11.5 practices for promoting, managing and sustaining innovation", Sutton (2002) articulates several elements of a culture which can lead to disruptive innovations.

1. *Hire "slow learners" (of the organizational code)*

1.5 *Hire people who make you uncomfortable, even those you dislike*

2. *Hire people you (probably) don't need*

3. *Use job interviews to get ideas, not to screen candidates*

4. *Encourage people to ignore and defy their superiors and peers*

5. *Find some happy people, and get them to fight*

6. *Reward success and failures, punish inaction*

7. *Decide to do something that will probably fail, then convince yourself and everyone else that success is certain*

8. *Think of some ridiculous or impractical things to do, then plan to do them*

9. *Avoid, distract and bore customers, critics and anyone who just wants to talk about money*

10. *Don't try to learn anything form people who seem to have solved the problems you face*

11. *Forget the past, especially your company's successes*

The Disruptive Innovation Ecology Guide

The guide is an exploration vehicle. Senior and middle managers, innovation champions, team leaders, engineers, marketers ride this vehicle in order to discover what Innovation Ecology means – to their own specific work environment.

The Twelve mini-tours – one for every innovation ecology building block - are the core part of the guide. Each includes a definition, a short description, a few good practices, pointers to additional information – and most importantly – a list of questions which frame the subject in the specific context of the reader.

The guide is packaged as either a paper document, a slide presentation or a web based electronic and interactive book.

The guide is customized – it can be modified to fit the situation, challenges and even "language" of the using organisation. For example, some building blocks may be added, while others which are irrelevant can be omitted.

The complete guide is available at www.innovationecology.com/di.htm.

The following figure is extracted from the web version.

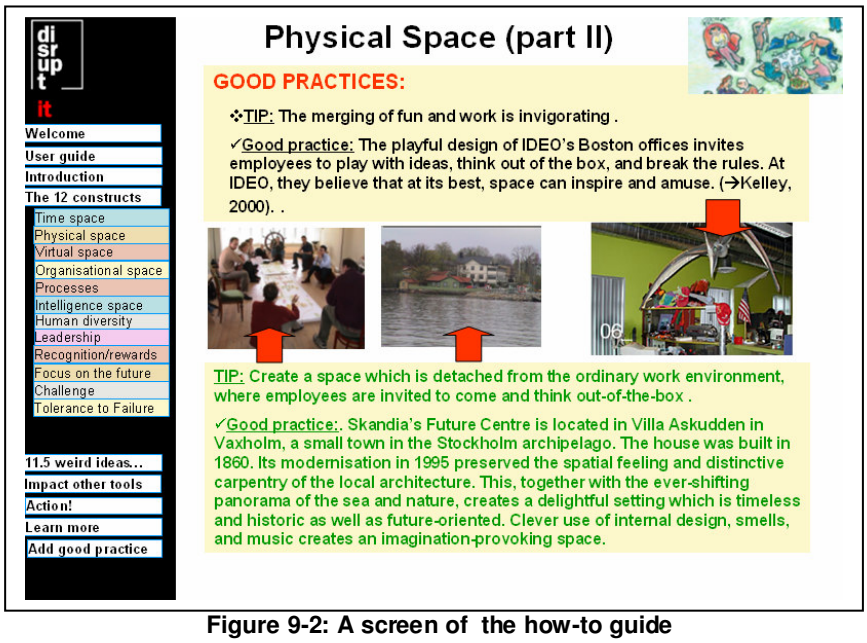


Figure 9-2: A screen of the how-to guide

The guide has two modes of operations: individual and group sessions.

Individual self-training sessions, where employees self-navigate the guide. These might be the innovation champion charged with improving the overall innovation climate of the organisation, team leaders that desire to improve the mini-climate in which their team innovates, or even the ordinary engineer or programmer who wishes to create a micro eco-system in which he or she operates.

Group sessions, where the content is presented by a facilitator who stimulates mini-discussions around each ecology construct ("what it means to us"? "what is our situation?", "how might we improve?", "what are the practical action items?"). The facilitator and the group choose

which constructs are important to the organisation and should be discussed, and which can be skipped.

In both modes, the users are invited to apply the following simple steps:

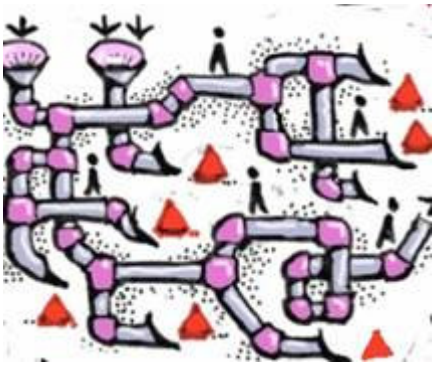
1. **Navigate between the "12 constructs"** of the innovation ecology, using the left-side navigation bar or the Ecology map.
2. **Explore each construct**, read, think, and discuss with yourself or your colleagues the following aspects:
   - What this aspect means?
   - Why is it important?
   - What is your situation?
   - How others are dealing with it?
3. **Want to know more?** The **"learn more"** button will take you to some more information, including links to relevant internet sites and books.
4. **Link ecology in the other DI tools**: click the **"Impact other tools"** to learn how to implement the Ecology principles in the IPL, DPM and OR tools (see details in the next section).
5. **Move from insights into action**: identify Innovation ecology aspects that need to be improved. Generate ideas on how to deal with them. Select the most attractive ones. The **"Action!"** button will give you some "tips and tricks" which can help you in this move.
6. **Weird ideas that work**: think about 11.5 practices for promoting innovation (based on the Suton, 2002). Click **"Weird Ideas"**
7. **Have fun** (Weird idea # 12).

Ecology and Innovation Processes

As suggested earlier in the chapter, the ecology complements the structured innovation processes. The links are bi-directional. On the one hand, better innovation ecology increases the chances that the structured process, such as opportunities recognition workshop and idea pipeline workflow will not become new counter productive bureaucratic mechanisms. On the other hand, the best way to implement a culture is not through talking, discussing and preaching, but through embedding its values and spirit in the daily operation. Thus, integrating the relevant values and building blocks of the Disruptive Innovation Ecology in the

Disruptive Innovation processes will deliver not only better process but also a sustainable innovation ecology.

Consider the following ecological aspects, when you design, manage and use the Idea-Pipeline process and tool:



1. TIME – how do you encourage employees to spend time on contributing ideas or providing feed back to other's ideas, and make it a legitimate activity?
2. VIRTUAL SPACE –does the technological solution provide a friendly, accessible and fun environment?
3. LEADERSHIP – what is the role of the middle and top managers in turning IPL into a sustainable source of ideas? What should they do, and what must they not do?
4. DIVERSITY – how do you ensure that it is not only the wise guys from R&D that contribute ideas? What about service representatives? Customers? Pensioners?
5. ORGANISATION – plan access rights carefully. Is it preferable to provide access to all employees for all ideas categories, or to create departmental boundaries?
6. SKILLS – would basic training in creative thinking, disruptive innovation and similar techniques lead to better results? Can the "IPL champion" enter his/her role without specific training? What are the skills required for a productive "Idea Evaluator"?
7. RECOGNITION – how does the system and process provide appropriate recognition to contributors? Is there a need for financial incentives – and how do you avoid the risks embedded in such incentives?
8. CHALLENGE: how do you increase the relevancy of the system, by ensuring that the real challenges of the organisation are addressed (tip: "call for ideas").
9. STRATEGY: how do you ensure that many ideas do fit into the strategic framework of the company (BUT not all of them – some "out-of-strategy" ideas should be encouraged!).
10. MARKET SPACE: how do you increase the chance that good ideas will meet good resources (finance, complementary expertise, internal or external partners)?

11. VALUES: how do you ensure that your core organisational values (e.g. respect of intellectual property, tolerance to failure, bias-to-action) are embedded & promoted by IPL?

Consider the following ecological aspects, when you design, manage and use the portfolio management process and tool:

1. TIME – how to ensure that all relevant stakeholders (including top management) will allocate enough time to examine its innovation portfolio?
2. VIRTUAL SPACE – how can the company's intranet be used to enhance transparency of the portfolio and enable better visualisation of the incremental/radical innovation balance?
3. LEADERSHIP – what is the role of the top management and the CEO in the DPM process? What is the role of the middle managers? How do you ensure they get involved?
4. DIVERSITY – how do you ensure that there will be several "status-quo breakers" in the strategic resource allocation process?
5. ORGANISATION – does it make sense to consider the portfolio (incremental/radical balance) at the overall company level or also at the sub-units level? Should disruptive innovation projects be run in separate units or even spin-offs?
6. FUTURE ORIENTATION – what is the horizon you set for the R&D portfolio? 3 years? 10 years? How much resource is needed for each time horizon?
7. RECOGNITION – how does the system and process provide appropriate recognition to managers and units that take risks and go beyond sustainable innovation?
8. CHALLENGE: how do you challenge the leaders participating in the DPM process to recheck their technological and business basic assumptions?
9. INTELLIGENCE: how does the DPM process use all available business and technological intelligence sources as inputs? How does it bring, for example, the voice of non-customers into the DPM meeting room?

Consider the following ecological aspects, when you plan the opportunity recognition workshops:

1. TIME – how do you encourage employees to come to the 1-2 days workshop? And to continue the process afterwards?
2. VIRTUAL SPACE –Can you use the intranet for preparations and post-workshops activities? When face-to-face workshops are impossible (due to geographical distance, for example) can you have a virtual substitute?
3. LEADERSHIP – What is the role of the leaders? Do you want them to open the workshop? Set the scope? Fully participate in it? Intervene in another way?
4. DIVERSITY – how do you ensure maximum diversity of participants? What kind of diversity is important for best results?
5. ORGANISATION – what is best in your case: departmental workshop or open-boundaries workshops (participants from various departments)? Hint: not a trivial question!
6. INTELLIGENCE: how do you bring the available intelligence into the workshop room? Is there a need for preparatory intelligence collection?
7. RECOGNITION – how do you recognise the contributors of good ideas? And…could it be that recognition can damage the brainstorming process?
8. CHALLENGE: how do you enhance relevancy and quality of outputs by setting "good" challenges to the workshop participants? Who should set the challenges – the management, the innovation champion, the participants themselves?
9. VALUES: how do you ensure that your core organisational value (e.g. respect to intellectual property, tolerance to failure, bias-to-action) are embedded and promoted by the OR workshop?
10. PHYSICAL SPACE: where is it best to run the workshop? in a remote exotic location? At a customer (or non-customer) location? In a special designed workspace? In the regular meeting room? How should the space be arranged – furniture, seating configuration, infrastructure, refreshments?

In order to make your organisation more readily aware and quick to respond to opportunities offered by disruptive innovation, chapter seven describes the fast assessment tool, the Disruptive Innovation Compass.
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