Collaborative Working Environments to enable Innovation and promotion of SMEs business competitiveness.
1. Innovation: basic concepts
2. Different aspects of innovation
3. Need for a holistic understanding of innovation in firms
4. Collaborative working environments as enablers for innovation
It is difficult to clearly define what innovation is…

- Innovation emerges from "creative destruction" (Schumpeter)
- Original meaning of innovation (*innovare*): "to make something new"
- Innovation is a means to achieve competitive advantage through "new technologies and new ways of doing things" (Porter)
- Innovation = Invention + Exploitation (Roberts)
- Innovation as a core business process (Tidd et al.)
- Innovation as the result of complex collaboration and interaction patterns between individuals, companies, and institutions within the innovation system (Lundvall)
...or which different aspects it has

- Innovation as a product, process, position or paradigm innovation (Tidd et al.)
- Innovation as a new product/service, process, organisational or marketing result (OECD)
- Innovation as a new product, new production method, new market, new source of supply or new form of organisation (Schumpeter)
- Innovation is the search, discovery, experimentation, development, imitation and adoption of new products, new production processes and new organisational set-ups (Dosi)
- Innovation as adoption of an internally generated or purchased device, system, policy, program, process, product or service that is new to the adopting organisation (Damanpour)
But it is even more difficult to derive operative concepts.

- **Different approaches, different disciplines:** economics, sociology, technological and organisational approaches; neoclassical, evolutionary, engineering or management paradigms, etc…

- **Different focus:** products, technological/production processes, marketing methods, procurement, organisational structures…

- **Different models**: linear (based on technology push or market pull), integrated/chain-link models with several feedback loops, innovation system/network-models
And to adapt them to the challenges of the knowledge economy

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To meet the work challenges of the emerging knowledge economy in the 21st century, enterprises need to ask:

✓ How to achieve a "strategic fit" between corporate and innovation strategy?
✓ Which are the barriers to innovation? How can they be overcome?
✓ How can a good idea be transformed into good business?
✓ How to promote individual creativity?
✓ How can an “innovation culture” be achieved in the organisation and supported by different business functions?
✓ Which are suitable collaborative technologies and channels for collaboration which will help to foster innovation?
Today organisations are prepared to improve their current activities...

...but the intensity and the effort for implementing creative innovation routines in organisations are still scarce, especially in SMEs.
...but, even though it is widely recognised that collaboration is a key issue for innovation, there is little evidence that enough space, time and budget are made available to foster collaboration....

Today organisations have a very optimistic vision about collaboration...
A holistic approach to innovation needs to take into consideration different innovation fields in enterprises, different actors, interaction patterns and contextual factors.
Besides adequate resources (inputs), dynamic capabilities and organisational routines are also essential for successful innovation.

**Dynamic capabilities:** organisational knowledge which enables the firm to **sustain the competitive advantage** in a **changing environment** (Nelson/Winter; Teece/Pisano).

**Organisational/Innovation routines:** the "**personality of the firm**" (Tidd et al.) involves established sequences of actions, a **mixture** of technologies, formal procedures or strategies and informal conventions or habits (Levitt/March). Routines have an existence **independent of particular individuals**.

\[\text{Source: Burr (2004) with adaptations}\]
There is a need for a European holistic Innovation Framework, in which different models, methods and tools can be integrated.
Innovation and CWE

Innovation Framework

Looking toward the Future Collaborative Working Environment

Innovation basic concepts

Challenges and opportunities

Need for a framework

People

Organizations

Entrepreneurship

Technology

Need for a holistic model

Introducing Erima

Innovative Culture & Behaviour

Entrepreneurship

Organisation/Development

Technology

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Innovation should be embedded in the organisational culture and it must be promoted, monitored, tested and managed, as the other strategic activities in the organisation.

It is based on individual and collective values, attitudes and behaviours. Collaboration is an essential ingredient for innovation.

A holistic vision is required: new products, new production processes, new market development, new organisational structure… should produce new business opportunities and new business models, able to exploit the differential advantages gained.

It should be appropriated to the European culture and reality: different languages and cultures, preponderance of SMEs in the industrial sector, current European industrial driving forces, etc…

Therefore, the model should be supported by the following pillars:

- Creative people
- Organisational capabilities (Dynamic capabilities) and organisational routines
- Entrepreneurship to transform new knowledge into business success
- Supporting technologies

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Innovative, creative and collaborative people

Individual & collective creativity
Creative routines, culture and behaviour

Enterprise Interoperability
New concept in manufacturing:
Adaptive, digital, networked, knowledge-based manufacturing

Supporting technologies

Collaborative working environments
Dynamics capabilities
Knowledge creation and sharing
Organisational Intelligence
Professional virtual communities

Combined economic, social and environmental objectives
Extended Enterprise
New business models

Entrepreneurship

Innovative organisation

Looking toward the Future
Collaborative Working Environment

Innovation basic concepts
Challenges and opportunities
Need for a framework

People
Organisations
Entrepreneurship
Technology

Need for a holistic model
Introducing Erima

European Innovation Framework
It is NOT just about Knowledge Management BUT it is about ‘co-working in knowledge-rich environments’.

It is NOT just about connectivity, BUT it is about professional virtual communities and nomadic personal access to knowledge.

It is NOT just about “information workers” working together BUT it is about “knowledge workers” spontaneously constituting Communities of Practice.

It is NOT just about creativity BUT it is about the augmentation of human capabilities with artefacts, collaboration with whoever owns the needed knowledge, virtualization of the work environment.
It is NOT just about “networks of SMEs” or “virtual organizations”, BUT it is about internal and external ad-hoc self-organising working teams.

It is NOT just about human interaction BUT it is about seamless and natural collaboration amongst a diversity of agents (humans, machines, computers) within distributed, knowledge-rich and virtualized working environments.

It is NOT just about physical space layout BUT it is about worker-centric, flexible, scalable and adaptable organizational forms that foster creativity and collaboration.
It is NOT just about collaboration to define the business plan, BUT it is about integrating the whole value chain to exploit opportunities.

It is NOT just to reduce the time to market by means of the collaboration, BUT it is also to “manage” the complexity inherent in the start-up.

It is NOT just to manage one single role in the value chain of the product, BUT it is to manage multiple positions with different roles in the value chain.
Collaborative working environments

Supporting technologies

☑️ It is NOT just about “technological infrastructure”, BUT about ICT supporting core collaboration services:
  - Group identification, security and traceability
  - Synchronization of distributed workspaces
  - Digital representation of physical objects
And collaboration tools:
  - Group management and service composition.
  - Augmented group presence and visualisation.
  - Semantic modelling of groups.

☑️ It is NOT just about ‘mobile applications’, BUT mobility aspects are to be considered in the context of seamless context sensitivity.

☑️ It is NOT just about connectivity and security standards & architecture, BUT standards & architecture must support worker-centric, flexible, scalable and adaptable tools and applications.
“A holistic European Innovation Model should provide a conceptual framework in which creative people, professional communities and networks of companies can collaborate using adaptable technologies to transform innovative ideas into business”

That is the key objective for ERIMA
IST-2006 Innovation and CWE
Thank you !!!!!