UNIK4630 Kunnskapsforvaltning

06 – Communities of Practice

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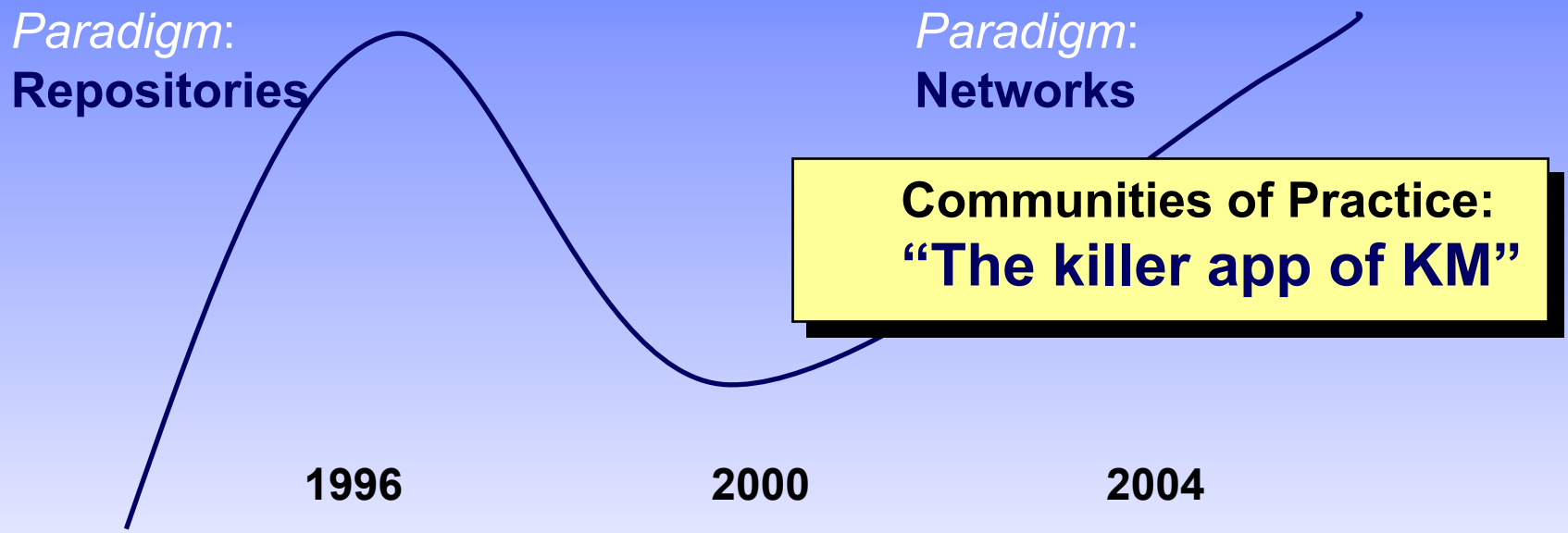
Outline

- Introduction
- Statoil example
- What is a CoP
- Role and benefits
- Building a CoP
- CoP technology
- Summary

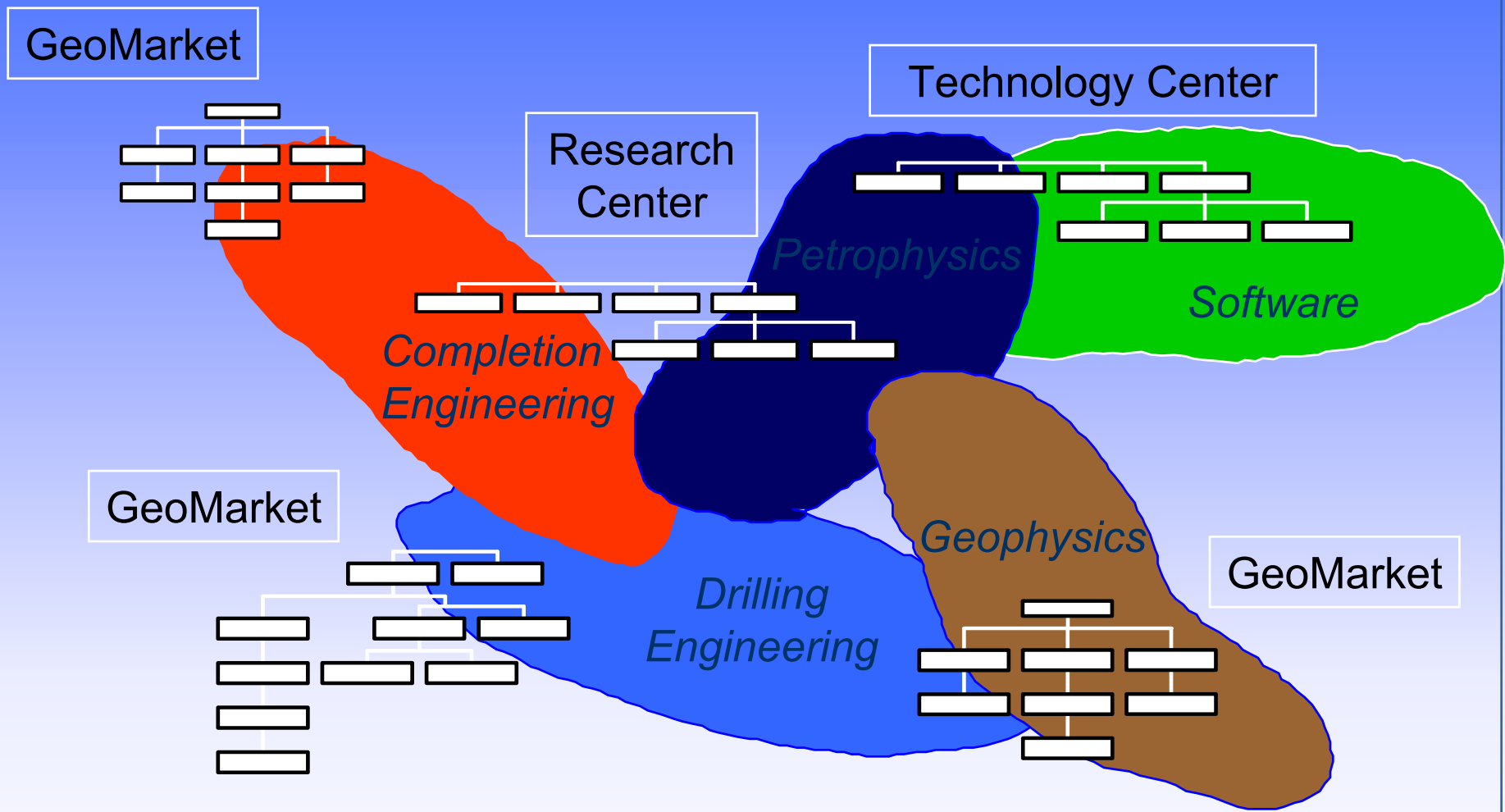
Recap - Evolution of KM



What is a Community of Practice (CoP)?

- Networks of people – small or large – who come together to share ideas with and learn from one another in physical or virtual space
- These communities are held together by a common purpose or mission
- They are sustained by a desire to share experiences, insights, and best practices

Communities in Schlumberger



Statoil B&B - Boreprosessen

- **Arbeidsprosess**
  - **Hovedtrinn**
  - **Inputs/outputs/mekanisme/kontroll**
  - **Kunnskap/kompetansekrav**
  - **Oppfølging/måling (PKI)**

- **Organisering**
  - **Lisenser**
  - **Plattformerorganisering**
  - **Multidisiplinærte team**
  - **Rollen til basis teknologimijø**

Verdien av kunnskap

- Operasjonsfasen (for et boreprosjekt) har typisk et budsjett på 50 MNOK
- Registerer tidsforbruk i boring:
  1. Planlagt tidsforbruk - normal operasjon (oppetid)
  2. Ikke planlagt tidsforbruk pga. uforutsette hendelser (f.eks. bor sitter fast/"bom fast")
  3. Ikke planlagt tidsforbruk pga. utstyrssvikt
  4. Ikke planlagt tidsforbruk pga. ytre omstendigheter (f.eks. uvær)

- Av total nedetid utgjør kategori 4 relativt liten del
- All nedetid av kategori 2 kan egentlig spores tilbake til at KM ikke fungerer (manglende erfarings-overføring, svikt i rutiner, osv.)
- Hver dag tapt koster i gjennomsnitt 2-2.5 MNOK
- En to dagers stopp betyr dermed tap på ca. 5 MNOK, dvs. 10% av typisk totalbudsjett

Hvordan kan KM bidra til forbedring?

- Som regel vil boreoperasjonen være en av flere på *samme felt*, og det vil foreligge erfaring fra nabobrønner som kan brukes for å unngå problemer
- Erfaringer fra *andre felt*/lisenser kan også være relevante
- Problemer kan i stor grad *forebygges* ved at erfaring og kompetanse bygges inn i boreplanen
- Siden boringen logges fortløpende, vil det alltid foreligge en mengde data som gir *pekepinn om status*
- Problemsituasjoner oppstår *sjelden momentant*, men utvikler seg gradvis over tid. Det krever kunnskap å kunne tolke signalene riktig

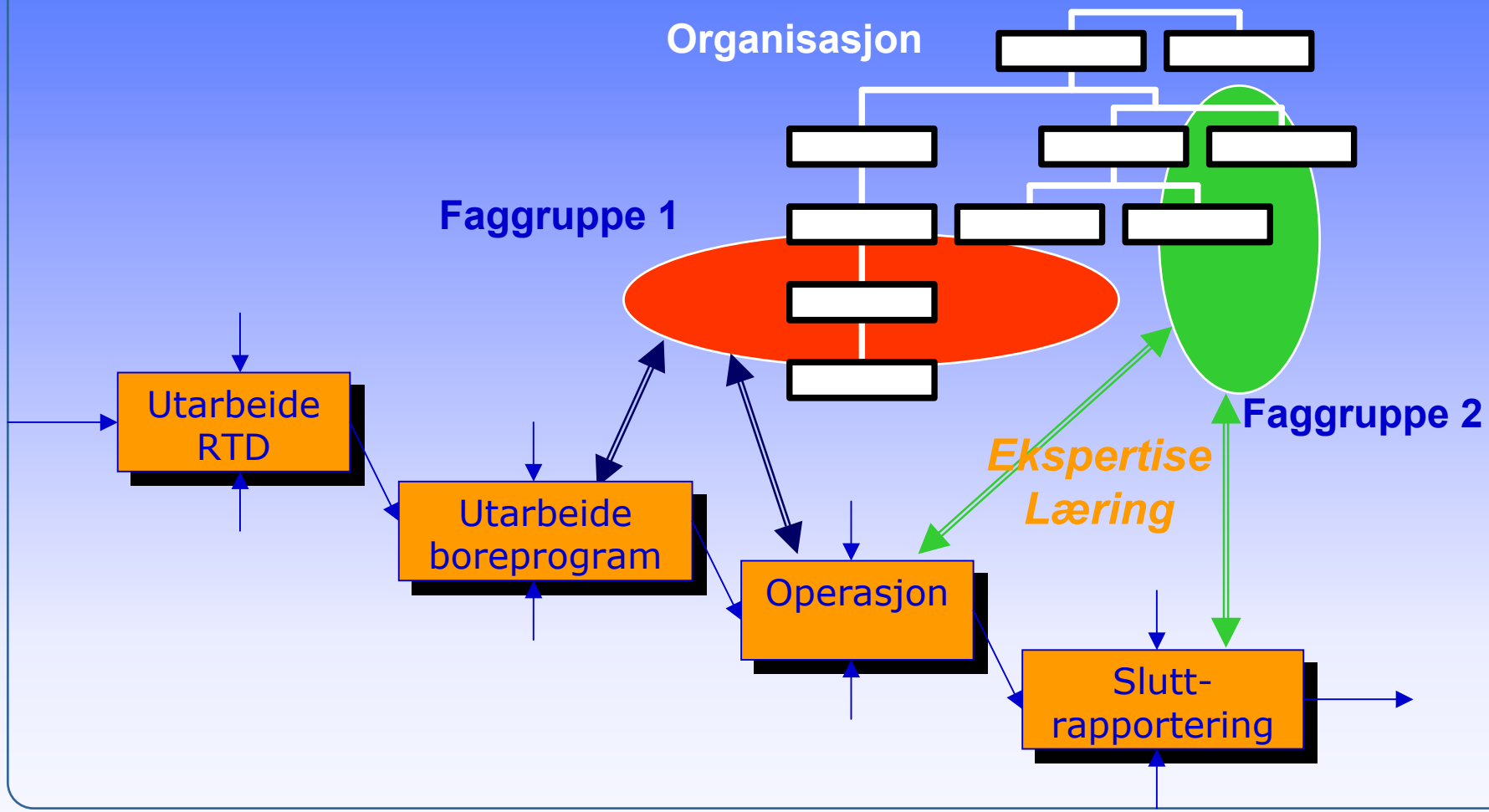
KM-tiltak i Statoil B&B

Kunnskap i nettverk	Fagnettverk Uformelle nettverk Ekstern kunnskap
Dokumenter og IT	Styrende dokumenter Beste praksis BoB Extranet Stillingsportal Andre databaser
Styring av kompetanse	Kompetanseoverføring/jobbrotasjon Kompetansekartlegging Opplæring
Prosessintegrert kunnskap	Kollegagjennomganger Morgenmøter DBR (Daglig BoreRapport)

Fagnettverk i Statoil B&B

- Et fagnettverk innen B&B (Boring&Brønn) etableres for å
  - Vedlikeholde og videreutvikle Statoils kompetanse innen et bestemt bore-/brønnteknologisk fagområde
- Et fagnettverk har
  - Fokus på et bestemt fagområde
  - En nettverksleder som utnevnes blant fagstigens fagledere
  - Medlemmer fra driftsenheter og basismiljøer i Statoil B&B
    - Det kan være opptil 40 medlemmer i et nettverk (ingen spesifikk grense), som nomineres av sine enheter
    - De store enhetene er med i mange nettverk. F.eks. deltar Statfjord i 80% av nettverkene
- Ca. 20 nettverk og 2000 brukere (internt + leverandører)

Organisering av boreprosessen



Oversikt over fagnettene

- Borehole Stability and Drilling Optimization
- Completion and Gravel Packing
- Directional Drilling and Well Positioning
- Drilling Operations
- Early Phase Development
- Evaluation and Modelling of Smart Well technology (SWt)
- Fluids
- Geomechanics
- HPHT
- Plug
- Production Chemistry
- Production Data Acquistion
- Production Management
- Rig
- Sand-control and Fracturing
- Subsea Well Equipment
- Through Tubing Drilling and Completion
- Well Control
- Well Hydraulics, Prosper/GAP
- Well Intervention
- Well Operations

Noen tilbud til nettverksmedlemmer

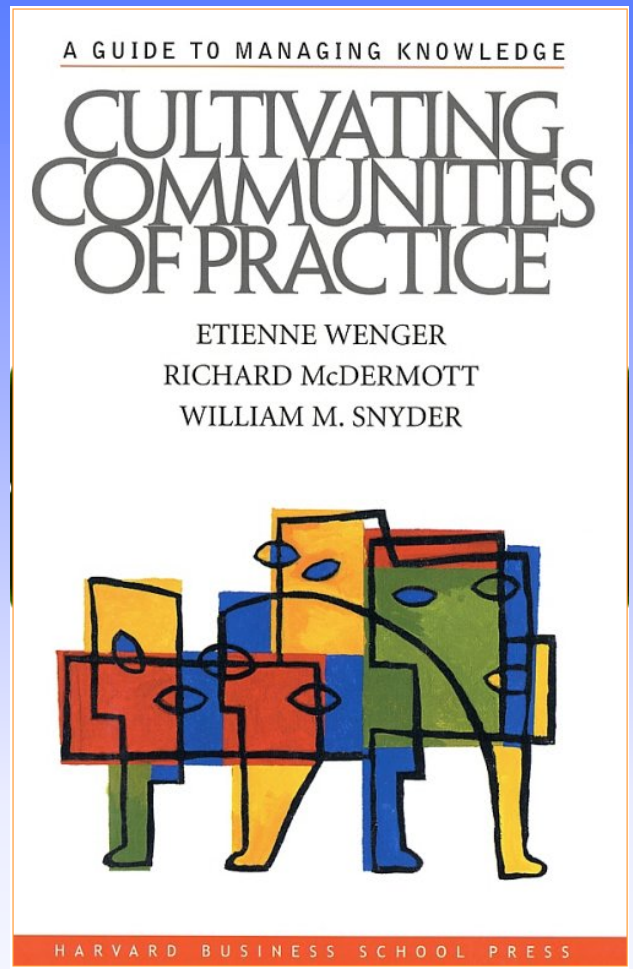
- Fysiske nettverksmøter
  - Fra 2 opp til 6-7 ganger/år
- Informasjon via Web (BoB Extranet)
  - Nyheter, beste praksis, osv.
- Diskusjonsfora
  - Via Bob Extranet
  - Samme struktur som nettverkene
- Viktig effekt:
  - Læring *på tvers* av lisensgrensene!

CoP reference book

- **E. Wenger, R. McDermott, W. Snyder:**

  Cultivating Communities of Practice: A Guide to Managing Knowledge

  Harvard Business School Press, Boston, 2002



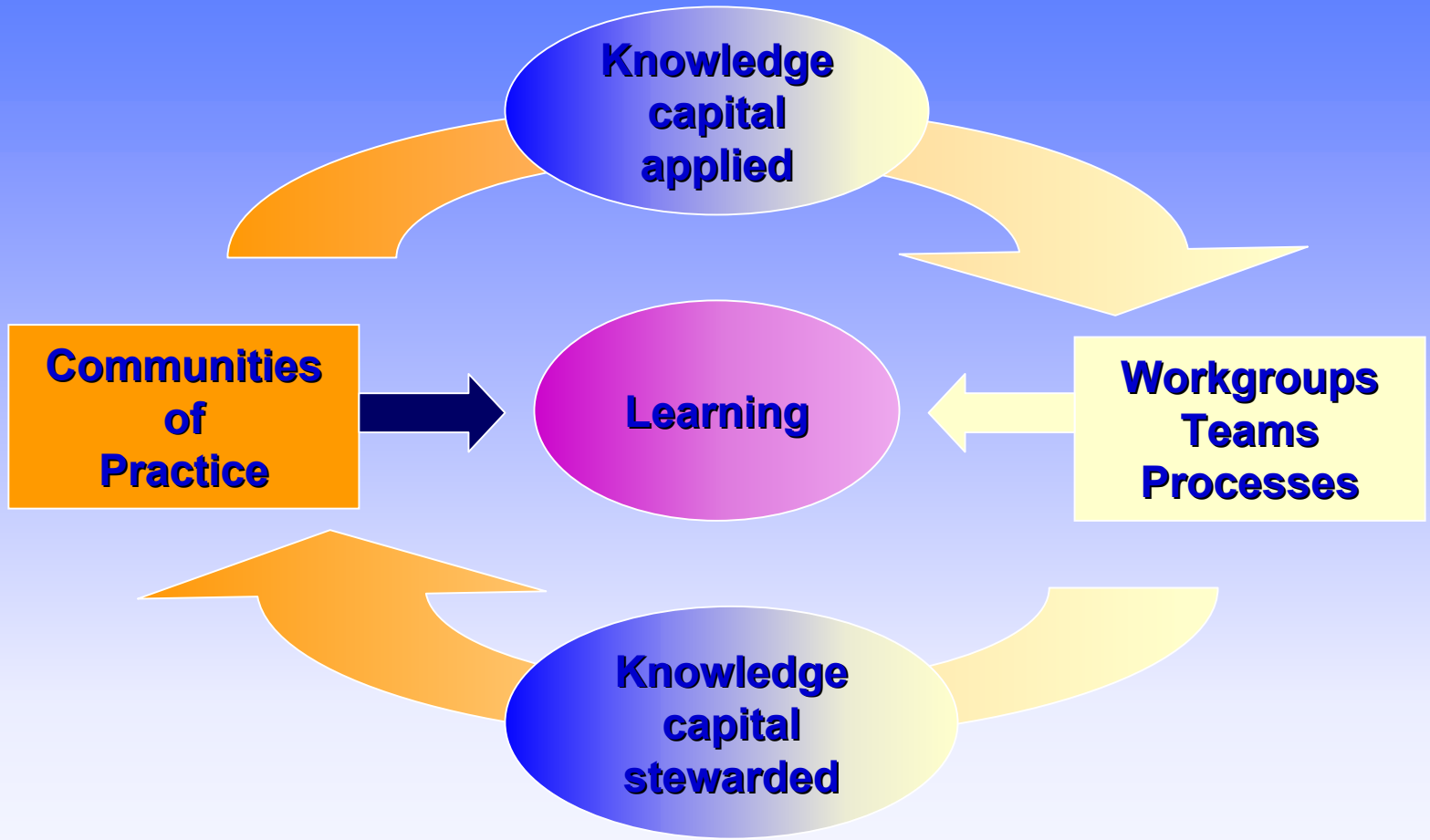
Dimensions of a CoP

- **Community**
  - Group of people wishing to share and to learn from one another face-to-face and virtually
- **Domain**
  - A common interest in and shared understanding of a body of knowledge: What are the issues, common approaches, etc.
- **Practice**
  - Need to share problems, experiences, insights, templates, tools, and best practices
- **Support**
  - A CoP may be supported by organizational structures and technology tools

CoPs differ from teams/groups …

	What's the purpose?	Who belongs?	What holds it together?	How long does it last?
Commun-ity of practice	To develop members' capabilities; to build and exchange knowledge	Members who select themselves	Passion, commitment, and identification with the group's expertise	As long as there is an interest in maintaining the group
Formal work group	To deliver a product or service	Everyone who reports to the group's manager	Job requirements and common goals	Until the next reorganization
Project team	To accomplish a task	Employees assigned by senior management	The project's milestones and goals	Until the project has been completed
Informal network	To collect and pass on business information	Friends and business acquaintances	Mutual needs	As long as people have a reason to connect

... but they are related



Types of CoPs

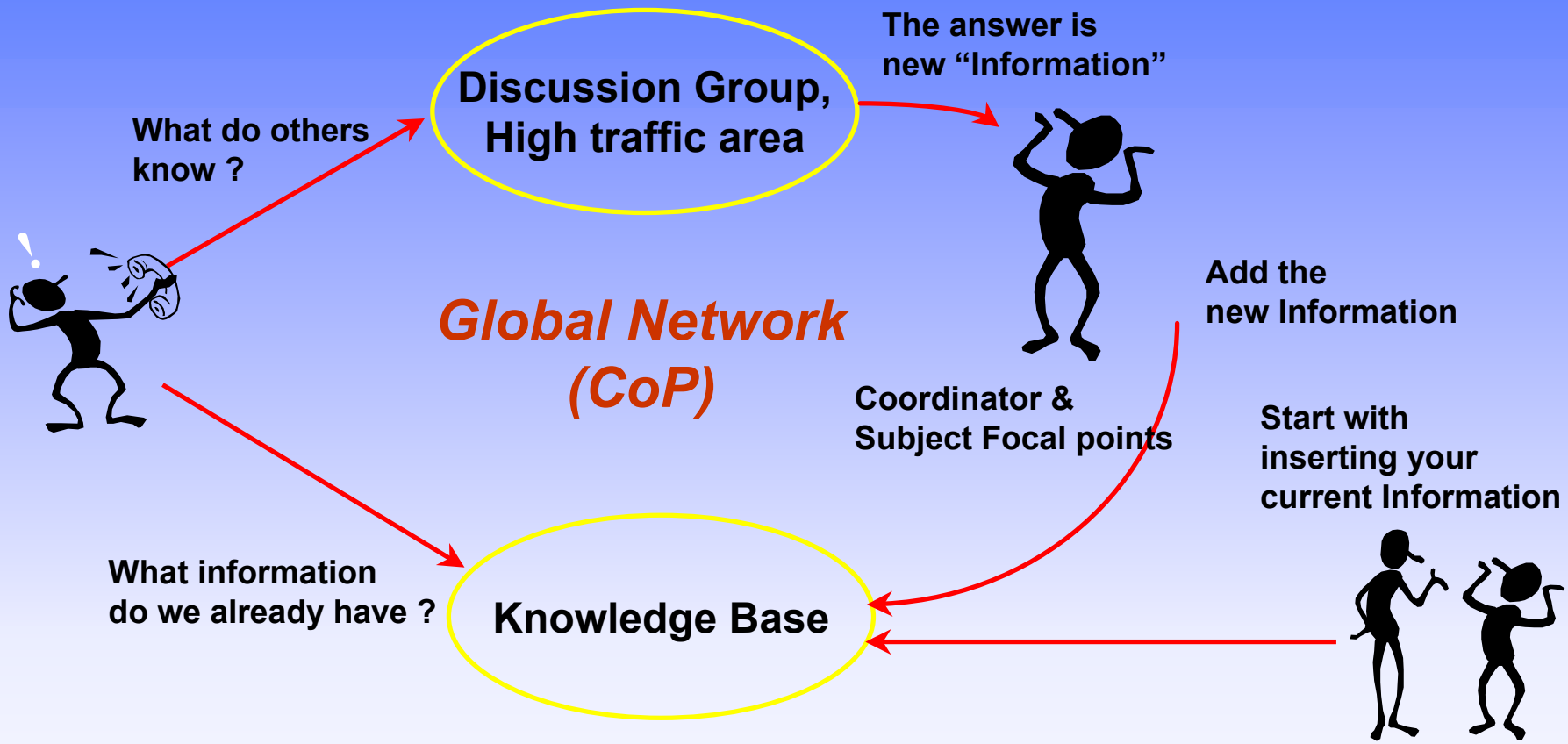
- Helping communities
  - Focused on community relationships
  - Colleagues help each other solve everyday problems
- Best-practice communities
  - Focused on practice
  - Develop, validate and disseminate specific practices
- Knowledge-stewarding communities
  - Focused on explicit knowledge
  - Organize, upgrade and distribute knowledge used every day
- Innovation communities
  - Focused on tacit knowledge
  - Foster unexpected ideas and innovations

What do CoP members do?

- Explain their work
- Discuss their needs
- Share information
- Share hints & tips
- Share insights
- Help each other
- Consult each other
- Discuss their approaches
- Discuss their expectations
- Solve problems
- Explore common issues
- Create tools
- Create standards
- Create generic designs
- Create generic documents
- Organize documents

- Develop trust and understanding
- Develop common perspectives, approaches, and practices

Shell – Combining CoP and a repository



Transforming the organization

- *Connect* people in different units around knowledge topics and *increase* trust and motivation *(enhanced networking)*
- *Solve* cooperatively business problems whose root causes cross team boundaries *(cooperation)*
- *Egalize* up to the highest standard performances in similar tasks that are uneven across units
- *Link, coordinate, organize, develop* activities and initiatives by different units in similar knowledge domains
- *Implement* the cycle of global stewarding and local use of knowledge (needs feedback, integration of KM & BP)
- Connect personal and professional development of practitioners to the strategy of the organization

Benefits to the organization

Short-term:
Improves business operation

- Arena for problem solving
- Quick answers to questions
- Reduced time and costs of information search
- Improved quality of decisions
- More perspectives on problems
- Coordinate and find synergies across units
- More daring in trying new things (risks)

Long-term:
Develops organizational capabilities

- Execute strategic plan
- Authority with clients
- Increased retention of talent
- Capacity for KM projects
- Ability to innovate
- Ability to foresee technological developments
- Ability to take advantage of emerging markets

Benefits to CoP members

Short-term:
Improves experience of work

- Help with challenges
- Access to expertise
- Better able to contribute to team tasks
- Confidence in one's approach to problems
- Fun of being with colleagues
- More meaningful participation
- Sense of belonging

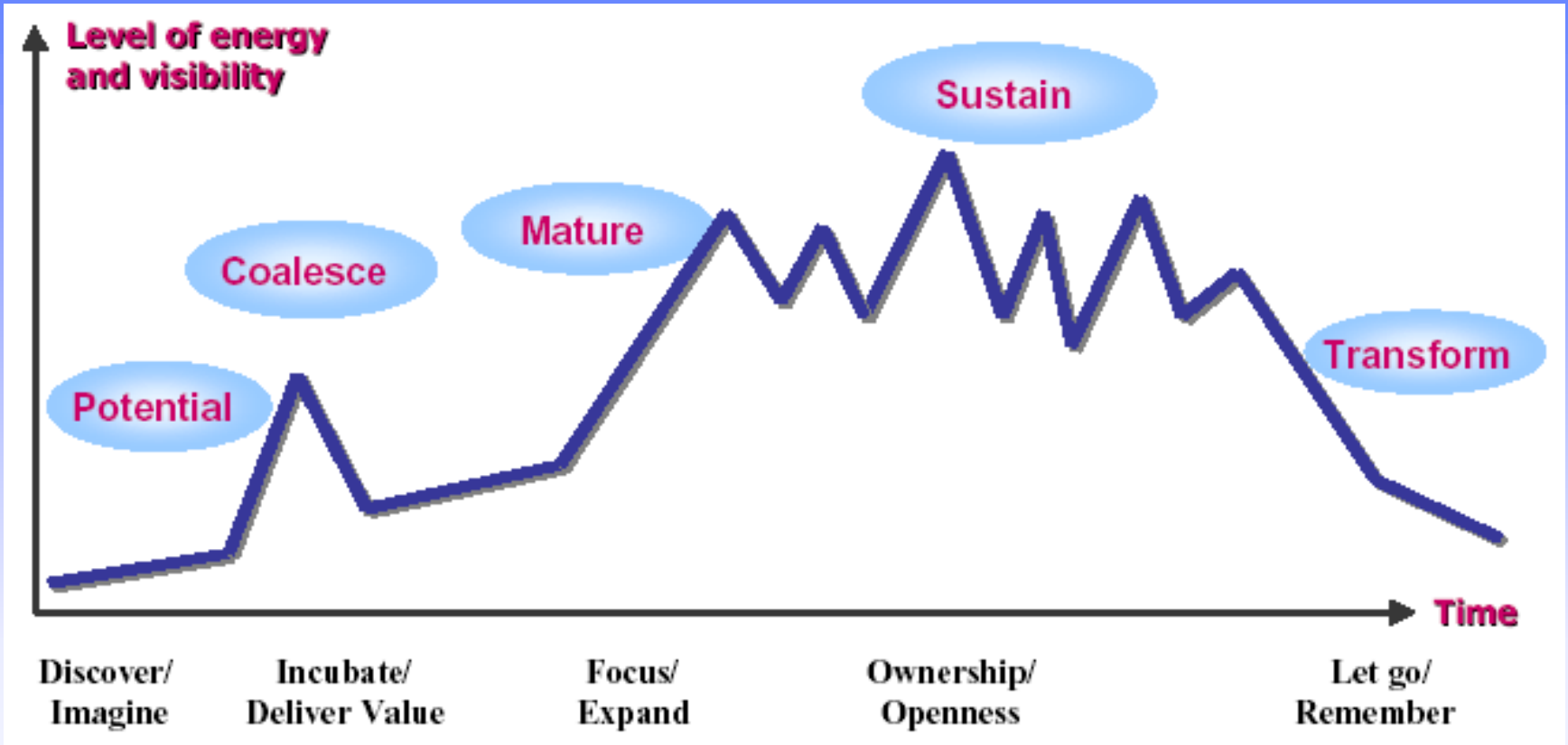
Long-term:
Fosters professional development

- Forum for expanding skills and expertise
- Network for keeping abreast of a field
- Enhanced professional reputation
- Increased marketability and employability
- Strong sense of professional identity

Developing a CoP

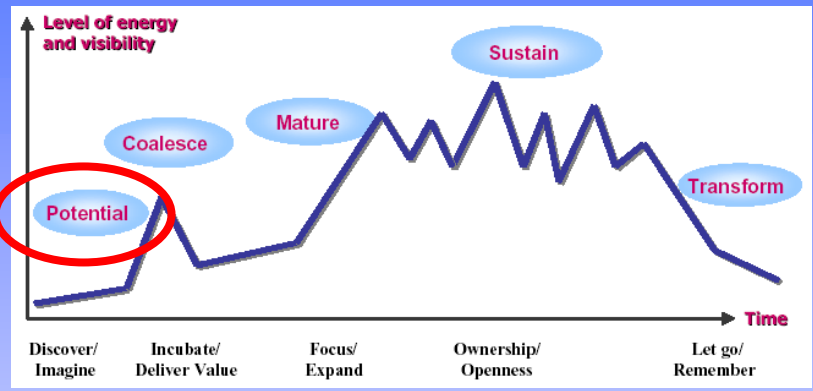
- **Domain**
  - **What topics and issues do we really care about? How is this domain connected to the organization's strategy? What are its open questions and the leading edge? What is in it for us?**
- **Community**
  - **What roles are people going to play? How often will the community meet? How will members connect on an ongoing basis? What will generate energy and develop trust?**
- **Practice**
  - **What knowledge to share, develop, document? Which models, instruments, Lessons Learned, best practices, etc. ?**

Stages of development



Stage 1 – Potential CoP

- Domain
  - Define a scope satisfying members & organization
- Community
  - Find people that could profit by networking & sharing
- Practice
  - Identify common knowledge needs
- Challenge
  - Discover existing networks and their issues
  - Imagine new possibilities (members, issues, etc.)



Defining the CoP structure

- Why should we meet?
  - What topics are of interest?
  - What do people need? What can they share?
  - What is the objective/goal for the group?
- Who should be in the CoP?
- What roles are needed?
  - Co-leader? Distributed leadership?
  - Subgroup leaders?
  - Website content managers?
- What events should happen?
  - Faced-to-face meetings, teleconferences, videoconferences?
  - How often should they happen?
- What technologies, if any, are needed?

Statoil B&B – Visjon for fagnettverk

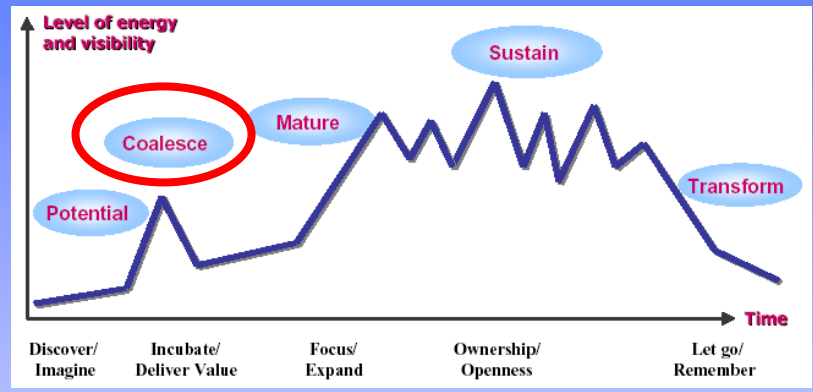
- Aktive og dynamiske nettverk for alle sentrale kunnskapsområder
- Deltakelse i et nettverk oppleves som stadig kilde til faglig fornyelse og en måte å raskt lufte og få svar på faglige spørsmål
- Deltakere forventes og finner det naturlig å bidra med kunnskap til nettverket
- Nettverk og andre kilder til kunnskap godt integrert med hverandre og med arbeidsprosessene
- Nettverkene har høy strategisk posisjon i selskapet og deltakelse i nettverk premieres av ledelsen

Role of CoP coordinator

- Domain
  - Identify important issues
- Community
  - Plan and facilitate events (face to face, online)
  - Link members, foster their development
- Practice
  - Help build tools and methods, best practices, lessons learned, etc.
- Assess health, evaluate delivered value
  - To members
  - To organization
- Manage boundaries to organization

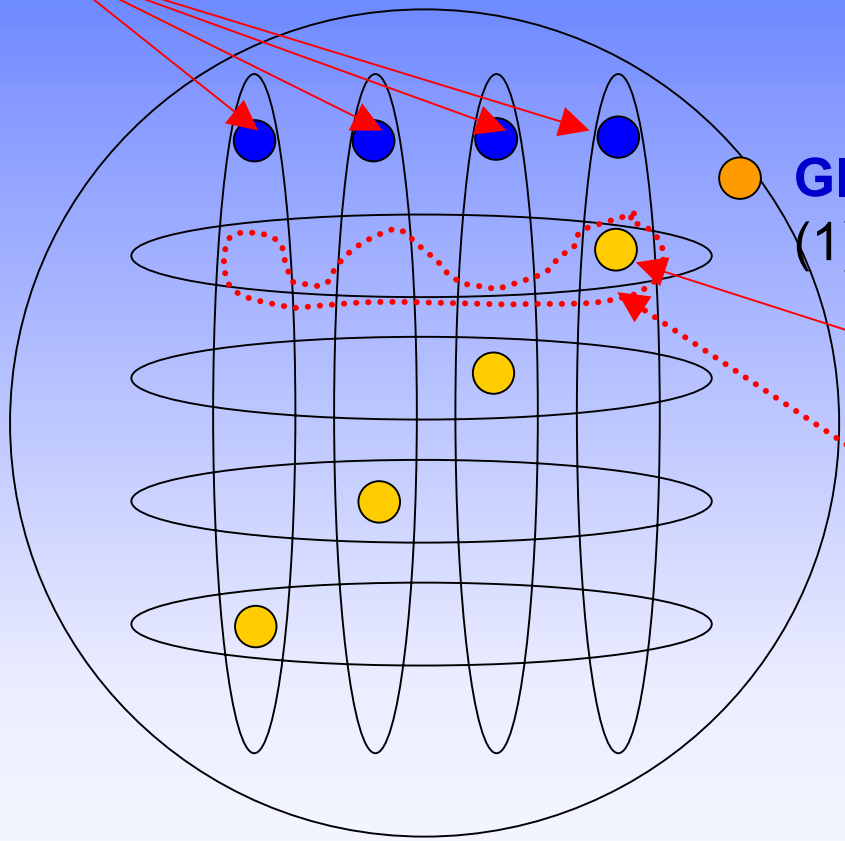
Stage 2 – Coalescing CoP

- Domain
  - Establish the value of sharing knowledge
- Community
  - Develop relationships and trust
- Practice
  - Discover what knowledge should be shared and how
- Challenge
  - Incubate trust (does not appear suddenly, emerges step by step from understanding each other)
  - Deliver immediate value



Shell – CoP organization

Hub Coordinators (1 per OU)



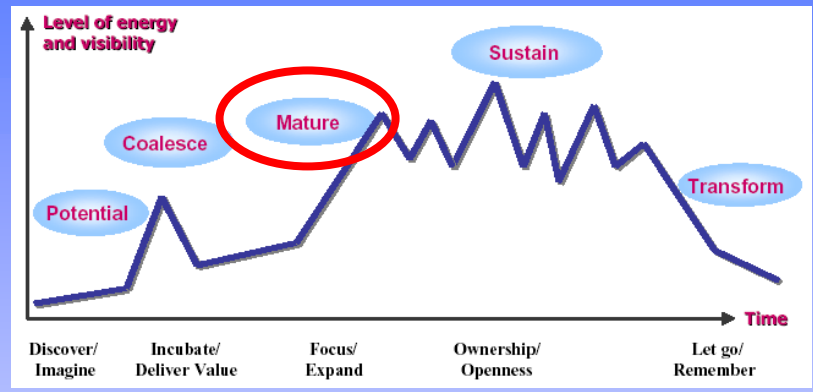
Global Coordinator
(1)

Subject Area Focal Points
(1 per subject area)

Doers / Users
within each OU and subject area (according to their interests and needs)

Stage 3 – Maturing CoP

- Domain
  - Define role in organization and relation to other domains
- Community
  - Manage the boundaries (define new, wider)
- Practice
  - Organize the community‘s knowledge
- Challenge
  - Focus on internal interests in cutting-edge topics
  - Expand membership to new members



Statoil B&B - Fungerer nettverkene?

Status

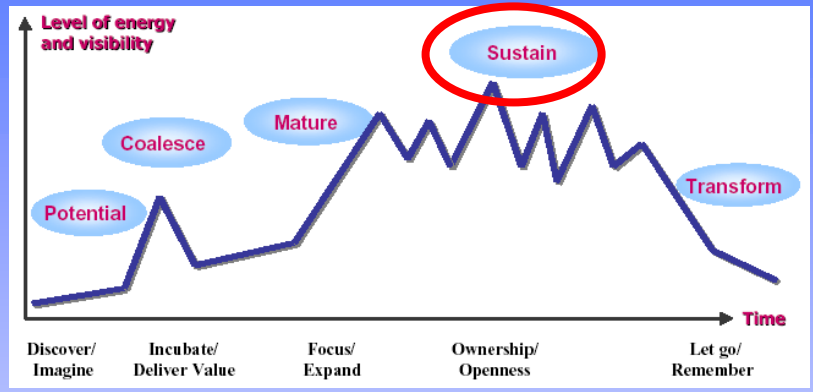
- Formelle og uformelle (interne og eksterne) kunnskapsnettverk i B&B har en udiskutabel betydning
- Ganske ujevnt utviklet og en usikker og lite forutsigbar virkning.
- Samlet sett får man neppe ut det av nettverkene som man kunne oppnå under optimale forhold.
- For noen av nettverksformene synes også deres betydning for kunnskapsdeling i B&B å være for nedadgående.

Forklaringer

- For lite oppmerksomhet og ressurser inn i tilrettelegging, "standardisering" og koordinering/ledelse av nettverkene
- Aktiv bruk av nettverkene blir ikke høyt nok begrunnet, motivert og verdsatt fra ledelsens side. Spesielt på tvers av lisensgrenser.
- Svak IT-støtte til nettverkene. Eksisterende IT-støtte for lite brukervennlige eller har ikke tilpasset funksjonalitet
- Kunnskapsnettverkene er ikke integrert i sentrale arbeidsprosesser

Stage 4 – Sustaining CoP

- Domain
  - Maintain relevance of domain, institutionalize role
- Community
  - Keep tone and focus lively
- Practice
  - Keep on the cutting edge
- Challenge
  - Ownership: of internally developed tools, methods, ...
  - Openness: membership to new members

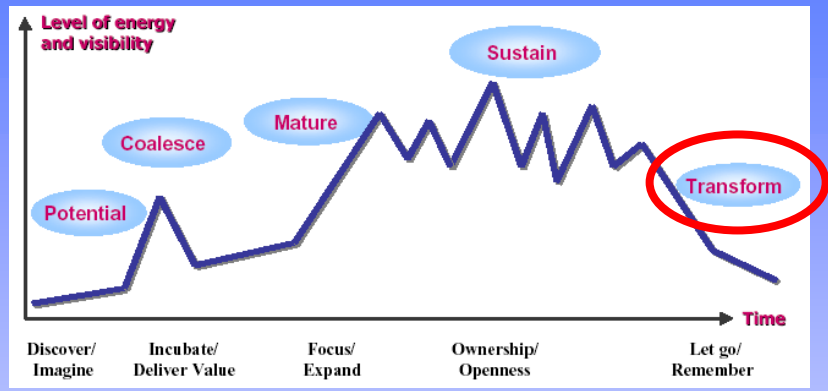


Statoil B&B - Mulige forbedringstiltak

- Seminar om strategi og ledelse av fagnettverk
- Gjennomgang og rasjonalisering av nettverksportefølje
- Etablering av felles ledelsesmodell. standarder, maler og prosesser for nettverk
- Etablering og aktiv fasilitering av nettverk for nettverksledere
- Sterkt økt bruk av nettbasert samarbeid i fagnettverk
- Integrert bruk av erfaringsbaser og samarbeid i nettverk
- Definisjon og bruk av KPIer for fagnettverk
- Generelt bedre integrasjon med IT-verktøy og arbeidsprosesser
- Kampanje for bedre forståelse og motivasjon for bruk av nettverk

Stage 5 – Transforming CoP

- Simply fade away
- Die by turning into a social club
- Split into distinct communities
- Merge with others
- Become institutionalized



Role of technology in CoP

- Successful of a CoP has to do primarily with social, cultural, and organizational issues, and secondarily with technology
- Still, an increasing number of CoPs are geographically distributed and must rely on technology for keeping in touch
- Even those that are local need to keep in touch between meetings and to create a repository for their documents
- Therefore, technological issues are relevant and it is worth asking what technology can do: what are the areas where technology can be expected to help?

CoP technology- Basic requirements

- Home page for the CoP
- Directory of membership
- Communication and collaboration support
- Floating questions to the community
- Shared workspace (synchronous collaboration)
- Document repository for the knowledge base
- Search engine for the repository
- Community management tools (traffic, who, ...)
- Subcommunities, subgroups, project teams

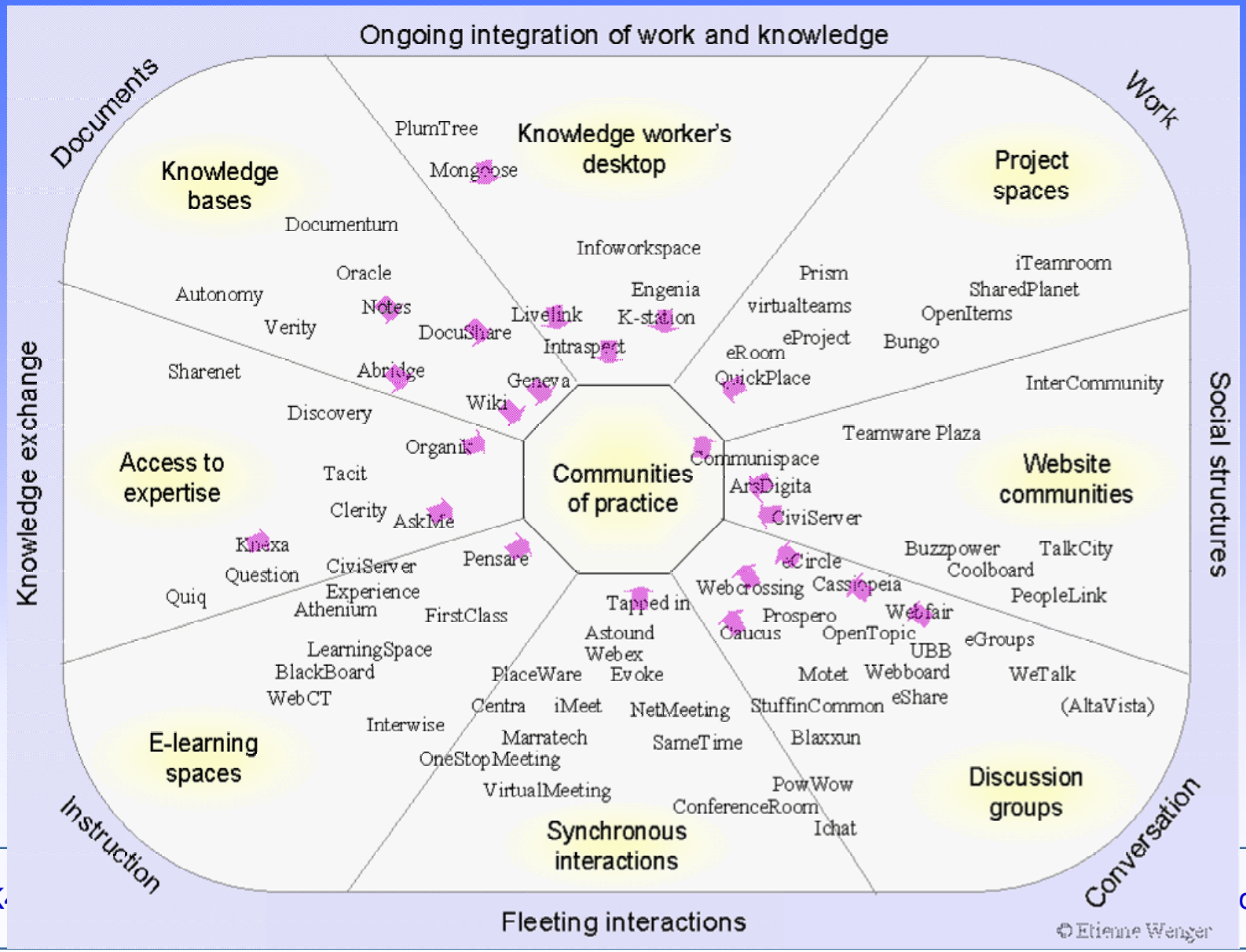
Plus …

- Easy to learn and use
- Easily integrated with other software
- Not too expensive

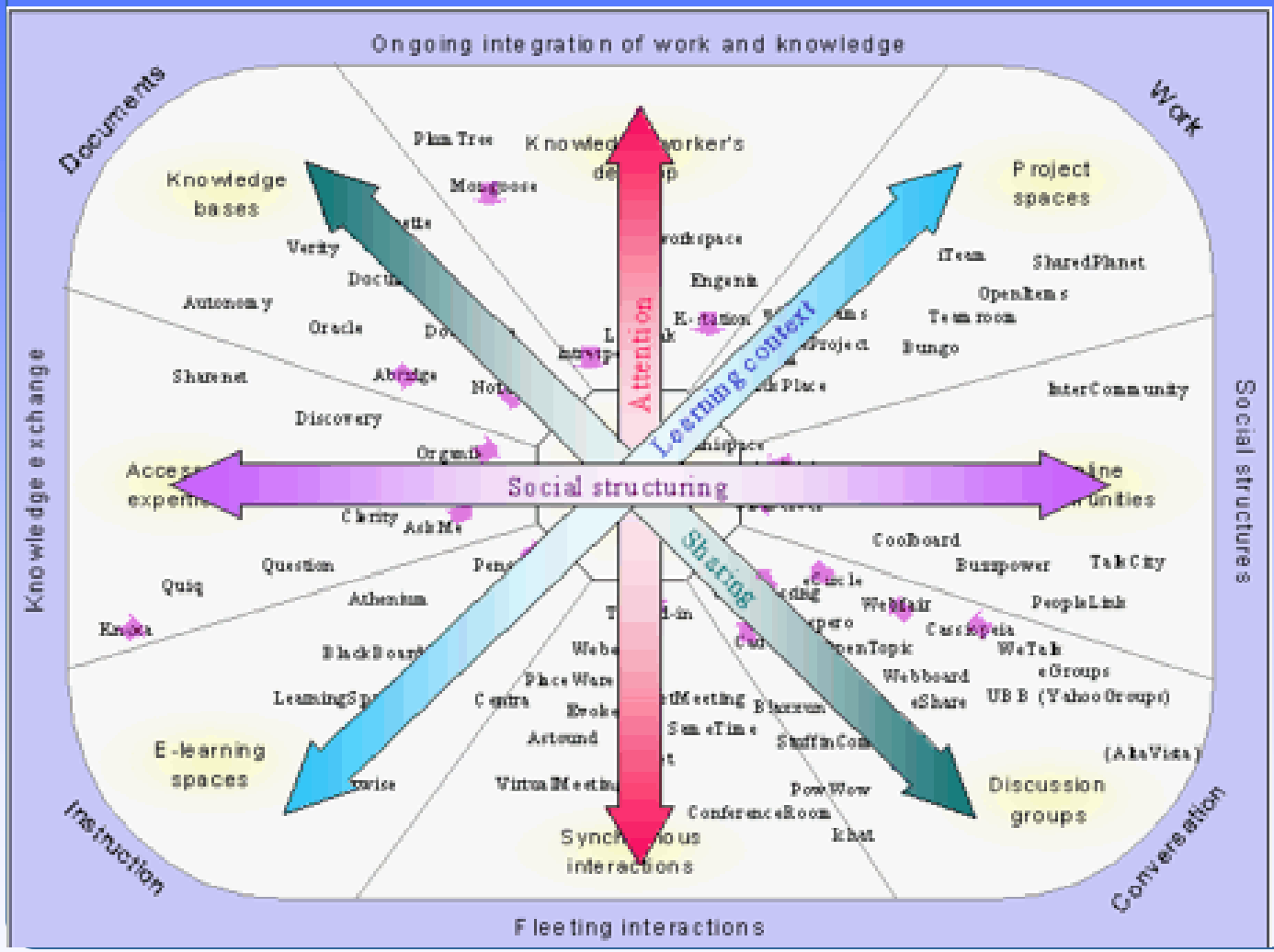
Categories of CoP technology

- Desktop of the knowledge worker - portals for managing participation in multiple groups
- Online project spaces for team work
- Website communities (such as customer communities)
- Discussion groups typically targeted at communities of interest with little commitment to a shared practice
- Synchronous meeting facilities, online auditoriums, conference rooms, and chat
- Community-oriented e-learning systems
- Access to expertise, through questions or expert profiles
- Knowledge repositories

Map of available tools (2001)

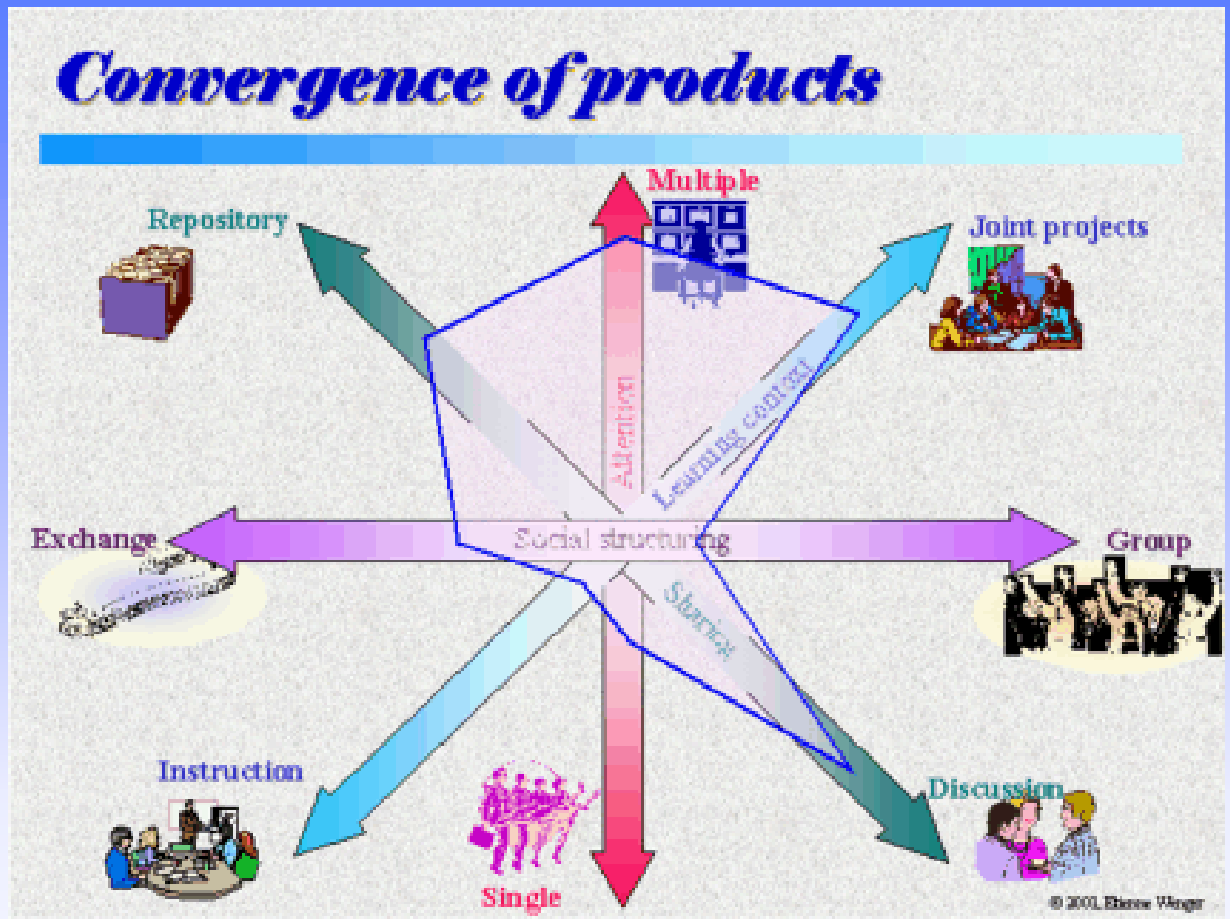


Tensions bewtween requiremnts

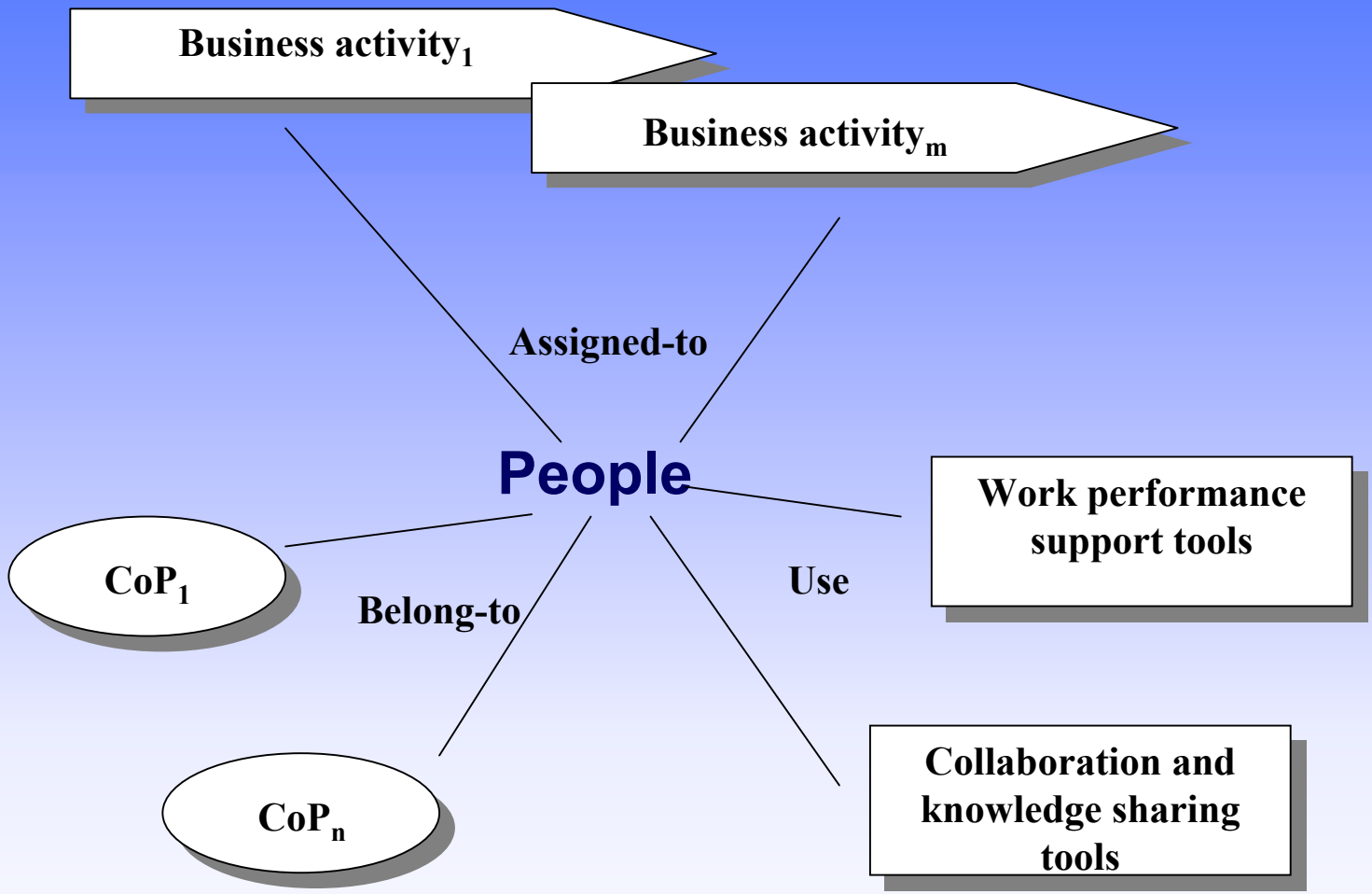


- Social structuring: Groups vs. Markets
- Sharing: Interactions vs. Documents
- Learning contexts: Instruction vs. Joint project
- Management of attention

Intergration & convergence of CoP tools



How does it all fit together?



Summary

- Communities of Practice (CoP) is a widespread and dominant form in current KM
- A CoP is a network of people who come together to share ideas with and learn from one another in physical or virtual space
- A CoP is defined by its *community* (group of people), *domain* (subject area), and *practice* (common tasks)
- A successful CoP has well documented benefits for the organization as well as for individual members
- The life cycle of a CoP goes through five stages: Potential, coalesce, mature, sustain, and transform
- Technology is an important enabler for CoP success, and there is a large variety of available tools on the market