

# The market of rules: standard making as collective design


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## Relevance of standards and standardization

- **Relevant impacts on organizations and society (NIST: >800.000 standards and growing)**
  - **Many disciplines take standards into account: Economics (e.g. David and Greenstein 1990), Sociology and History of Technology (e.g. SCOT studies), Computer Science, Information Systems (e.g. Monteiro 1998, Ciborra 2000, Hanseth 2000)**
  - **In organization, standards are fundamental means of coordination, and standardization appears to be an organizational process**
  - **However, this subject is virtually absent in Organization Theory studies!**
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- **Multidisciplinary analysis of standards based on organizational principles**

- **What is a standard?**
- **Theme 1: Standard as a mean of organizing - using standards in organizations**
- **Theme 2: Standard as a result of a standardization process: emergence and diffusion of standards**
- **Empirical investigation**

## A standard is:

An agreed-upon set of rules

- About being something (most ICT standards: technical specifications)
- About doing something
- About having something

## Fundamental elements of a standard:

- Negotiated agreement, (freely) open to new adopters
- Written and public form

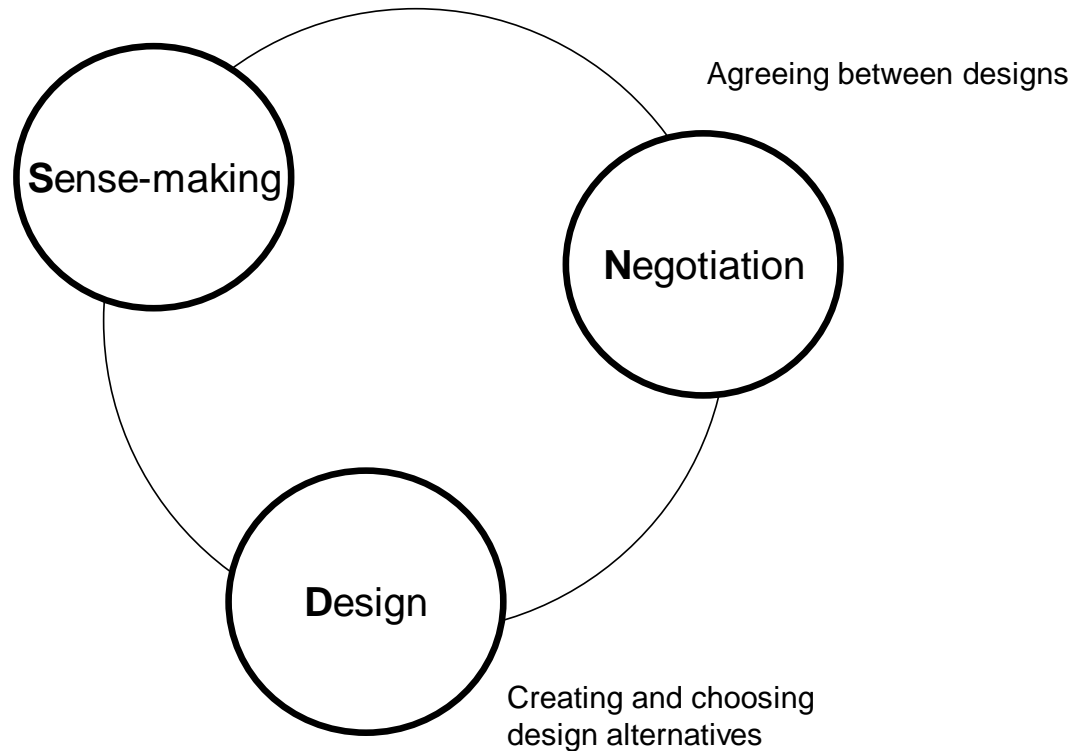
- **Standards for organizational efficiency (Mintzberg 1983)**
- **Standard diffusion->pushing organizations to markets (based on Williamson 1975; Hannan and Freeman 1977)**
- **Standards for organizational improvisation (Weick 98, Pina & Cuna 2000)**
- **Standards for innovation**
  - Modularity and combinatorial innovation (Varian 2003, Tuomi 2003)

- **What are the relevant theoretical studies on Standard making?**
- **Starting point: special issue MISQ 2006 on IT standard making**
  - Network economics ([analysis of the shared references](#))
  - Collective action
  - Organizational ecology
  - Power theories
  - Complexity theory

- **Dominant design theories**
- **Modularity studies**
- **Institutional theories; fashion trend studies**
- **SCOT: interpretive flexibility**

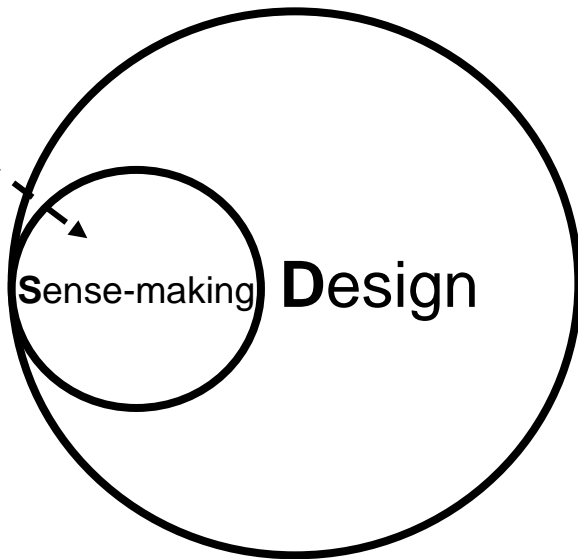
## D-S-N model (Fomin, Keil, Lyytinen 2003)

Attaching meaning to design  
alternatives



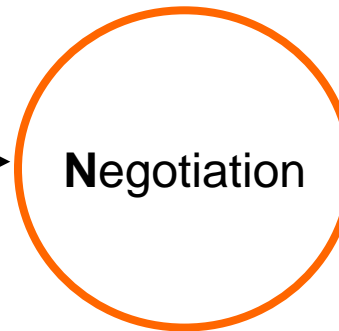
# D-S-N evolution?

*Attaching meaning  
to design  
alternatives*



*Creating design alternatives*

*Agreeing on a common  
design*



*Making it visible*



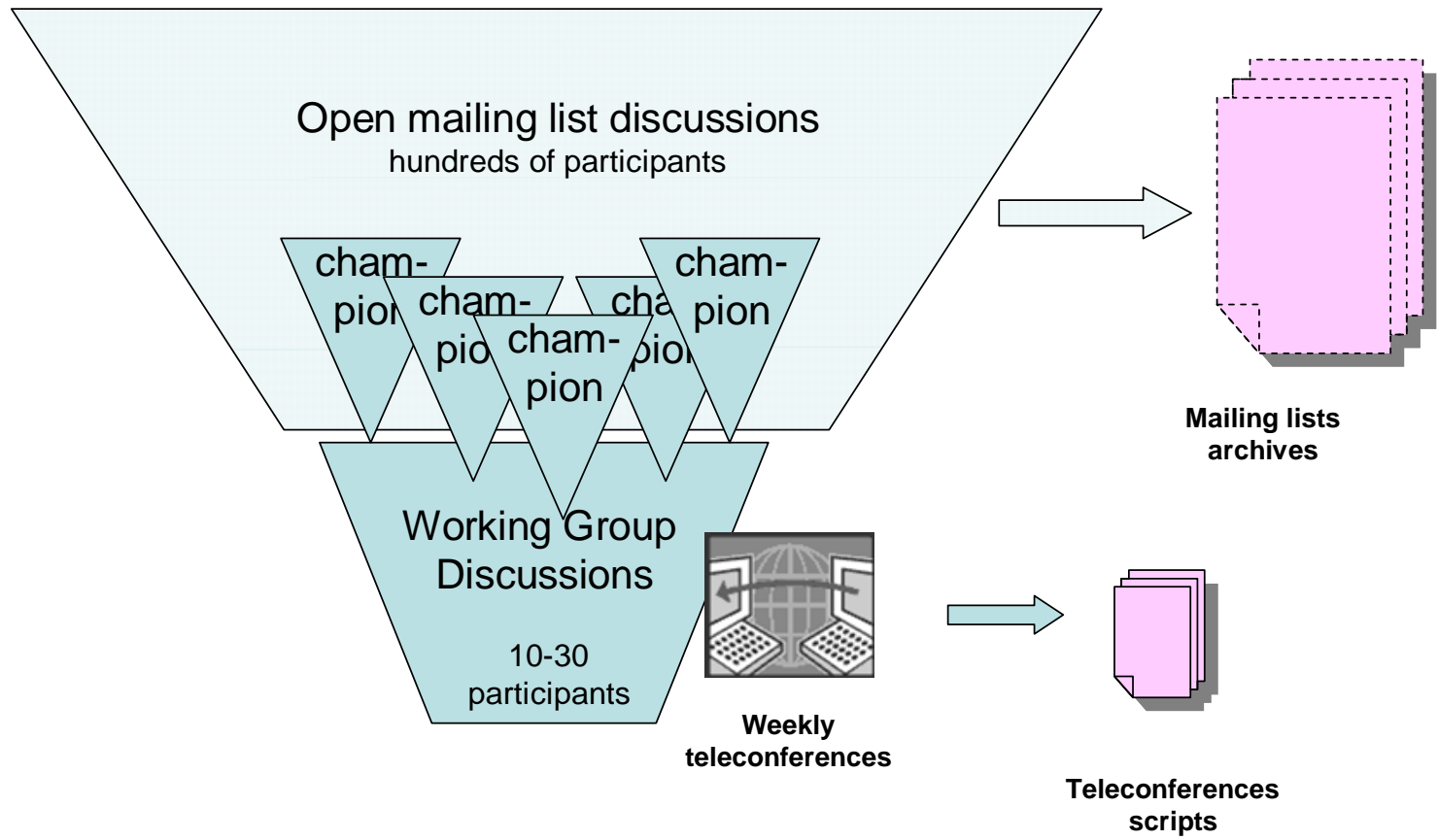
- **Objectives**
- **The empirical case**
- **Methodology**
- **Results**
- **Discussion and implications**

- **How is a standard generated?**
- **What activities?**
- **What criteria for selection?**

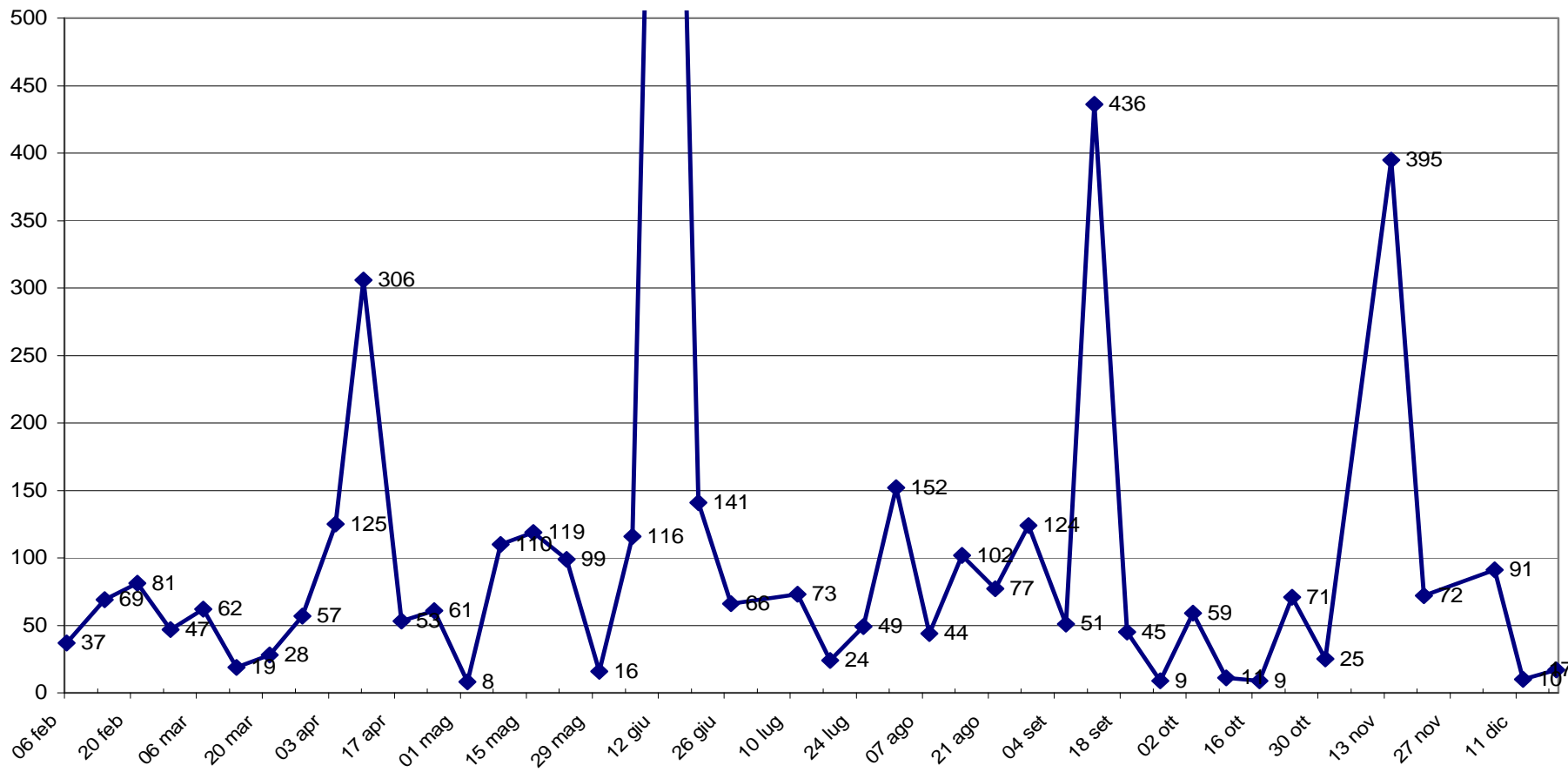
- **The “Web Services” case study**
- **April 11, 2001: 52 organizations meet at a W3C workshop in San Jose (CA); 64 position papers**
- **The W3C consortium**
- **The “Web Services” activity**
- **The WS workgroups and the “WS Architecture” group**
- **Face-to-Face meetings (10-15 participants, at planned dates)**
- **Distributed meetings (10-15 persons, weekly)**
- **Mailing list (wider community)**

- **WSA group meeting transcripts**  
<http://www.w3.org/2002/ws/arch/#records>
- **Sometimes the log files are published “as they are”**  
<http://www.w3.org/2002/ws/arch/2/04/18-minutes>
- **More often, they are edited**  
<http://www.w3.org/2002/ws/arch/2/02/06-minutes>

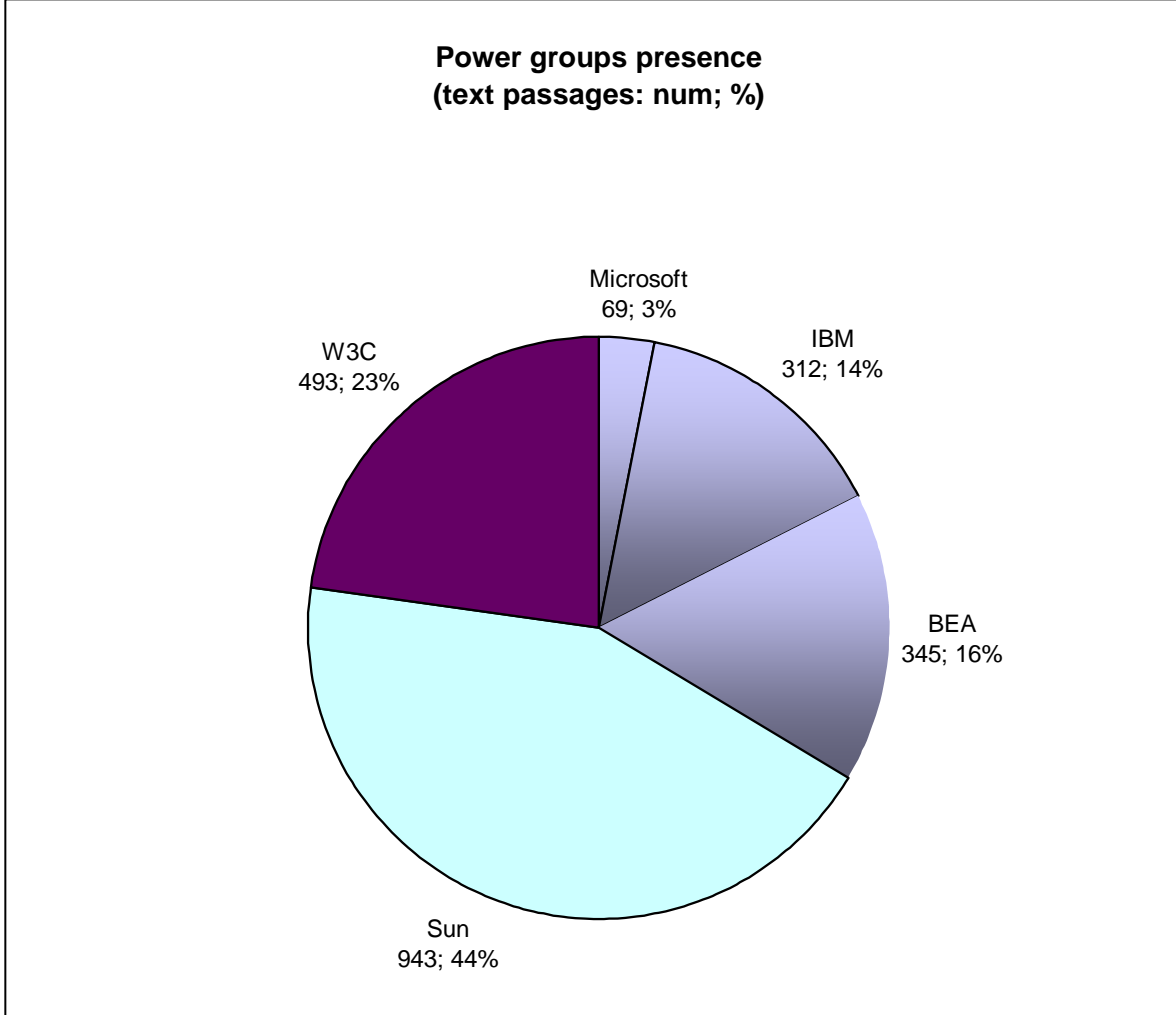
- April 11th, 2001: 52 organisations attend a workshop W3C in San Jose (California); 64 position papers
- The W3C consortium
- “Web Services” activity
- The working groups and the “WS Architecture” group
- Face-to-Face workshops (every two/three months)
- Conference calls (10-15 participants, weekly)
- Mailing list (hundreds of participants)



**Number of text passages  
(Meetings in year 2002)**



# Number of text passages and power groups presence



## 1) ACTIVITIES

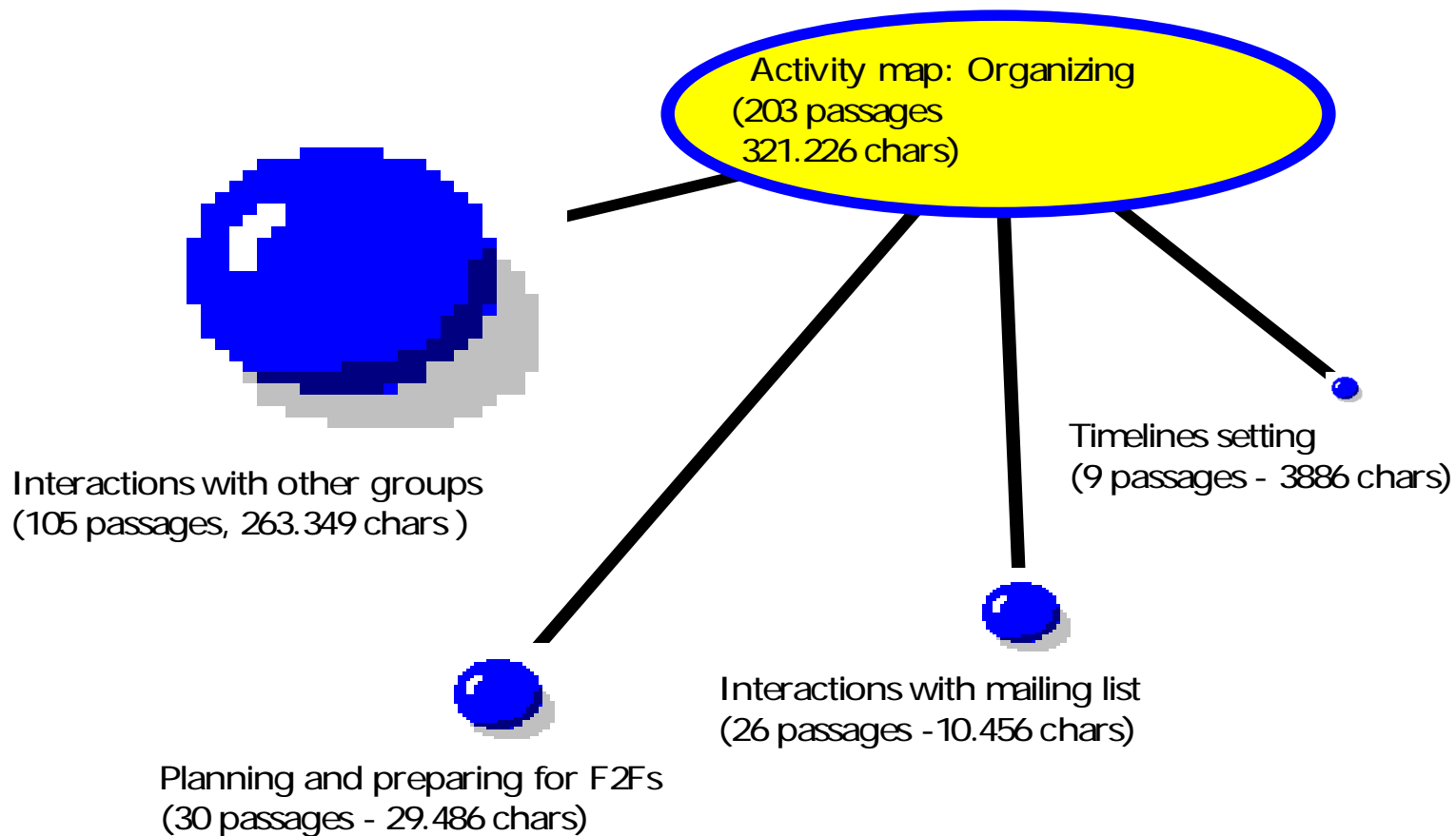
- What are the main activities in the standard creation process?

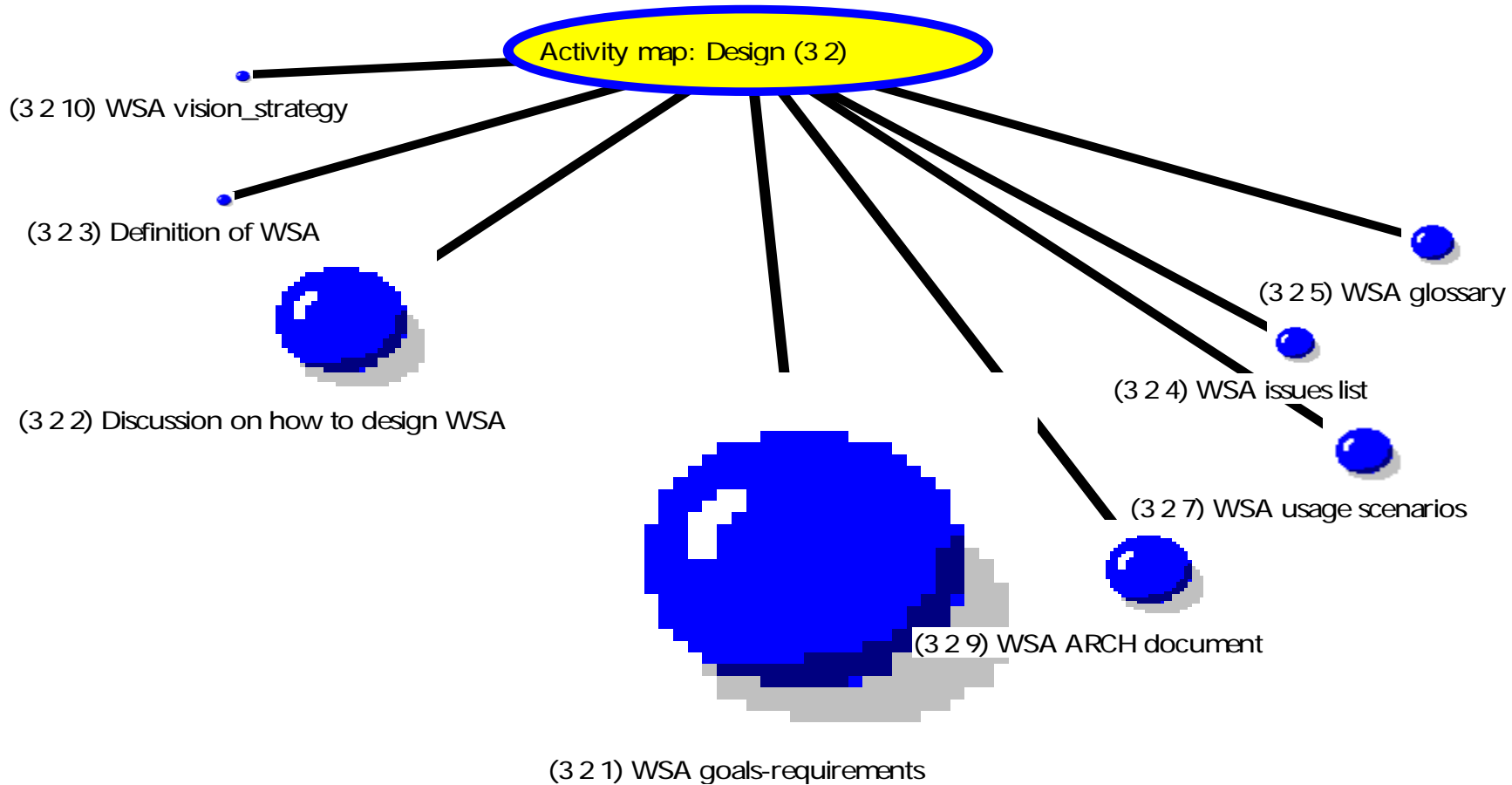
## 2) SELECTION CRITERIA

- What are the relevant factors for the emergence of a final choice among all the “candidate” standards?

Organizing activities			Design activities		
<i>Concepts</i>	<i>Passages</i>	<i>Chars</i>	<i>Concepts</i>	<i>Passages</i>	<i>Chars</i>
63	203	321.226	151	305	416.462

# Activities: organizing





- **WSA Standardization as a flexibility maximization process**
  - Max (Flexibility)
    - Use/interpretive flexibility (Orlikowski 1992; Pinch e Bijker 1987; Hanseth & Lyytinen 2005): 29 text passages
    - Change flexibility (Hanseth & Lyytinen 2005): 19 text passages

# Further hypotheses to explore

[\(details and references\)](#)

- **Single closed user group; single well-defined use**
  - 3. Economic utility
    - Maximizing the economic utility for the adoption group
  - 4. Legitimation
    - Maximizing the legitimation of the adoption group
  - 5. Identity
    - Maximizing the strength of the adoption group identity
- **Open and growing user group**
  - 6. Network size
    - Maximizing the user network size
- **Open and growing user group fractioned in competing sub-groups**
  - 7. Power influence
    - Taking into account the power influence of actors/subgroups sponsoring their candidate standard
- **Open, growing and fractioned user group; different alternative uses of each standard**
  - 8. Interpretive flexibility
    - Optimizing the standard flexibility in proportion with the growing variety of different alternative uses
  - 9. Plurality of standards
  - 10. Complex architectures