SPICE Project Document

Scanning the Potentialities for Future ICT Research Collaboration between China & the European Union

Minutes SPICE workshop on Next Generation/Future Internet 5.9.2007, Beijing

WP2

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The SPICE project partners are:

1	eutema	eutema Technology Management GmbH, Austria
2	CSTEC	China S&T Exchange Center, P.R. China
3	Skillnet	Skillnet GmbH, Germany
4	CATR	China Academy of Telecommunication Research of Ministry of Information Industry of P.R.China, P.R. China
5	CHTF	China Hi-Tech Transfer Center, P.R. China
6	Skill Sh	Skillnet Consulting (Shanghai) Co., Ltd., P.R. China

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Minutes SPICE Workshop on Next Generation/Future Internet

Date: Wednesday, September 5, 2007
Time: 9:00 – 16:00
Venue: China Academy of Telecommunication Research of MII (CATR)
52 Huayuanbeilu, Haidian District, 100083, Beijing
Second Floor, Conference Hall

8:30-9:10 Registration

9:10 Short self-introduction by all participants

9:18 Opening Speech
Jiang Lintao (Chief Engineer CATR)

In his opening speech chief engineer Jiang Lintao expressed his contentment over past and ongoing EU-China collaborative activities and his hope for fruitful future collaboration.

9:25 Welcome Address
Erich Prem (eutema)

In his welcome address Erich Prem noted that the topic "Next Generation/Future Internet is part of everybody's life and therefore has to be developed internationally. He stressed the strategic importance of the SPICE workshop which aims at discussion how to proceed in the development of next generation internet.

9:28 Welcome Address
Alison Birkett (European Commission)

Alison Birkett stressed the importance of EU-China cooperation in the field of "Next Generation/Future Internet". She expressed a strong wish from the side of the European Commission to see further cooperation in FP7 in the field of "Next generation internet" (EC delegates attending conferences in China on that).
In FP6 China was the largest international participant by far (over 100 Chinese partners in FP6). In FP7 there are12 projects with Chinese participation (60 projects submitted→ great success).

9:32 Keynote: An Outlook an Next Generation/Future Internet
Jiang Lintao (Chief engineer CATR)
http://www.europe.ict-china.eu/fileadmin/filesharing/WS2_Documents/050907_JiangLintao_CATR.pdf

In his presentation Mr. Jiang Lintao described the significance of the internet and then arising problems in the current situation, as which he sees:

- Business model problems

- The safety philosophy of the internet
- New media and regulatory problems
- Self discipline of subscribers and industry chain

Chief engineer Jiang then described the impact of the internet to the telecommunication network.

Third and last part of his presentation was a technical prospect to future internet. He presented the following development trends:

- Judgment of tendency
  - Internet and telecom network will become convergence
  - Bearing networks will become the same
  - Services network will become multi-faceted
    - Recently, Internet as kind of simple service will develop continuously, but its life period will shorten, energy keeping fixed
    - Services which has healthy business model have well development

- Basis for convergence
  - Both with advantages and disadvantages, they are in fact learning from each other.
  - As the two networks are based on IP technology and become congruent and overlapping to each other, they are set to become one. But they will not simply merge into either today's Internet or telecom network, but converge into the IP-based next generation network.

10:00 Keynote: An Overview of EU R&D in the field of Next Generation/Future Internet

Erich Prem (eutema) (ppt)

http://www.europe.ict-china.eu/fileadmin/filesharing/WS2_Documents/050907_Prem_NGI.pdf

Erich Prem provides an overview of next generation internet initiatives in the EU, US and elsewhere. In FP6 the topic was covered under the "Towards the next generation internet" and "Broadband for all" initiatives. The topic is also relevant in the NEM, NESSI and ISI European Technology Platforms. Erich Prem also introduces into the FP7 ICT Challenge 1, where NGI projects are possible under "Pervasive and trusted network and service infrastructures". An outlook to selected projects in the first call of FP7 is also given.

10:20-10:45 Coffee Break

10:45 Experience in International Research Collaboration 1

Jorge Carcía Vidal (Technical University of Catalonia)

http://www.europe.ict-china.eu/fileadmin/filesharing/WS2_Documents/050907_J.G.Vidal_CompNet.pdf

Professor Vidal presented the Computer Networking (CompNet) Research Group at the Technical University of Catalonia.

- Expertise areas:
  - Ad-hoc wireless networking (MANETs)
    - Cooperative Networking (J. García-Vidal)
    - Vehicular Networks (VANETs) (J.M. Barceló)
    - QoS in MANETs (Ll. Cerdà)
    - Security in MANETs (M. Guerrero)
  - Performance evaluation
    - Analytical, simulation, prototypes
  - Protocol Sw implementation & testing

- Past research areas:
  - Mobility support, high-speed router design, QoS in packet switched networks, etc.

ComNet is involved in the following EU projects:

- FP6:
  - WIDENS (STREP): Ad-hoc wireless network for public-safety and rescue applications
  - EuroNGI, EuroFGI (NoE): Next Generation Internet
- FP7
  - EuroNF (NoE): Network of the Future

- COST 290 (Traffic and QoS Management in Wireless Multimedia Networks)

He explained that Euro NGI (Network of Excellence) is continued in "Network of the Future". He recommends this network of excellence as good source for potential partners for collaborative EU projects.

Professor Vidal concluded:

- FP UE projects are a great opportunity to develop advanced research projects
- Given that we have a right research idea, building an adequate consortium building is the most difficult task for having a successful proposal
- Writing a good proposal is another important point
- Knowledge of European players and personal contacts are key in this process

11:08 Experience in Int. Research Collaboration 2

He Baohong (Director IP and Multimedia Research Division, CSRI of CATR)
http://www.europe.ict-china.eu/fileadmin/filesharing/WS2_Documents/050907_HeBaohong_NGITopics_CATR.pdf

Mr. He presented specific topics CATR would suggest for future EU-China collaboration in the field of Future Internet.

The topics are:

1) Future Internet Architecture
2) Addressing, Routing & Naming; The core for any network
3) Evolution to future: compatibility
4) Tariff and accounting; Inter-ISP traffic-related issues

11:24 Experience in International Collaboration 3
José Enríquez Gabeiras (Telefonica I+D)
http://www.europe.ict-china.eu/fileadmin/filesharing/WS2_Documents/050907_J.E.Gabeiras_Telefonica.pdf

Mr. Gabeiras explained that Telfónica Investigación y Desarrollo was created by Telefónica to outsource and render its Research and Development in a profitable way. As operator Telefónica is interested in managing end-user services.

Mr. Gabeiras noted that Telefónica was the first European operator to participate in the 6th Framework Programme (FP6) and that in 2006, Telefónica has spent M€ 588 in R&D, 10.3 % more than 2005.

He explained that geographical distribution (also to China)(is of special importance to his company because of the following reasons:

- Extending and specializing the existing network of Centres of Excellence
- Getting closer to the operators.
- Getting closer to the needs of the local reference clients.
- Technological efficiency.
- Access to public resources.
- Evolution towards Centres of Excellence to attract local talent in the scientific-technological environment.

Concerning international collaboration he listed the following pros, cons and specific issues for Chinese organizations:

- PROS
  - Better results than standalone research
  - Technical exchange, knowledge sharing
  - Different viewpoints (technical, countries, academia/operators/providers)
  - Working procedures

- CONS
  - Working procedures (!)
  - Risk of too much paperwork
  - Difficulties to test the result in operational environments

- SPECIFIC ISSUES FOR CHINESE ORGANIZATIONS
  - Expertise in wireless
  - Leverage the power of the vendors

- Large scale experience and experimentation
- Difficulty to synchronize research plans

11:40 Next Generation/Future Internet
José Enríquez Gabeiras (Telefonica I+D)
http://www.europe.ict-china.eu/fileadmin/filesharing/WS2_Documents/050907_J.E.Gabeiras_NGI.pdf

Mr. Gabeiras noted that the network must evolve to support new challenges:

- The evolution of the network is linked to the evolution of the services
- The new technologie (FTTx, HSDPA, WiMax…) and the incremental use of the video applications (e.g. YouTube) are producing a dramatic increment in the traffic load

So as new requirements for the network he names:
- Scalability
- Cost efficiency
- **Quality of Service**

He summarized:

- QoS is much more than prioritization
  - The most important issue right now is the harmonization of heterogeneous technologies

- QoS **is not** discrimination nor filtering

- The key points to build new business models
  - Mainly based on the value of coordinating heterogeneous networks
  - Preserving the openness of the Internet model
  - Linking QoS to the connectivity, not to the application
  - Allowing the use of the system by any application

Mr. Gabeiras then presented the EuQos Project which is funded with €9.5M over 3 years and started 1 September 2004. It aims at supporting the evolution of the Internet into a multi-service network, taking a pragmatic approach, selling QoS as a new source of revenue and defining business models. The consortium consists of 5 network providers (Prime Contractor is Telefonica), 5 Corporates, 5 SMEs (consultants, small development companies) and 9 Research Institutes.

12:00 EU-China R&D Cooperation in FP7 ICT
Erich Prem (eutema)
http://www.europe.ict-china.eu/fileadmin/filesharing/WS2_Documents/040907Prem_FP7andBeyond.pdf

12:19-12:50 The Procedure for Chinese Partners to Join FP7 Projects

Li Ning (CSTEC)

Li Ning explained the procedure for Chinese partners to join FP7 projects in Chinese language.

14:18 Introduction of Expert Panel Methodology
Ursula Eysin (eutema)

Ursula Eysin explained the methodology of the expert panel which aimed at doing an adapted version of a SWOT analysis.

14:26 Impulse statements of Experts

Mikael Joansson
School of Electrical Engineering, Royal Institute of Technology (KTH)

Strengths
- Good intellectual property
- EU companies in China: should now do more research in China
- Huawei now has research departments in Stockholm: more and more responsibilities in standardization issues
- There seems to be a coherent vision, agreement on technical challenges

Requirements
-Personal Contacts
-Long Term funding

Challenge
-Matching with partners it not easy
-Mutual Trust
-IPR issues / inflow of ideas
-Governance issues

Opportunities:
-China is currently in transition
-Get something running

José Enríquez Gabeiras
Telefónica I+D

Challenges
- Difficult models
- Users are empowered
- Need to maintain the openness of the internet

Opportunities
- Business models around connectivity services

- End-to-end services required
- Much importance must be given to heterogeneous network management: setting certain behaviours, network services etc.
- Large scale experimentation facilities in China

Jorge García Vidal
Computer Architecture Department, Technical University of Catalonia (UPC)

NGI
- Connection of small wireless devices will play an important role in the future - special protocols required, not directly derived from point-to-point connection protocols

China
- Power of the quality research in China: many universities and many researchers
- Size of the power: for EU projects involving Chinese users can be very interesting, also knowing more about the market

Challenge
- Big problem concerning knowledge about the communities and research activities
- Networks of excellence etc. could be very interesting to increase knowledge
- Funding for Chinese partners may disappear in the future

"SWOT"

Strengths
- Experience in proposed topics + ongoing research
- Topics coincide with European interests
- Powerful equipment manufacturers
- Large testing scale
- Architecture (EU side)
- Cooperation between academia and vendors

Challenges
- A not solved problem (core network/periphery); no synergy
- Weakness of existing technology
- Suited business models
- Culture and language differences at user side (tarifs etc.)
- Knowledge of user behaviour
- Service
- Finding partners
- Knowledge of research focuses
- Reverse flow of information

Opportunities
- Networks of Excellence
- Build on Existing Initiatives
- EU-Call Topics are known up to 2 years before issuing
- Build up on existing research topics

Requirements
- Long-term financial perspective (matching funds)
- Platforms to meet and know each other
- Promoting short term visits (2 weeks)
- Right topics
- Publicity
- Filtered information on relevant meetings
- Theatrical workshops with 2/3 topics (in China) (Connected to ITU-activities)
- Chanel for promoting events
- A way to find right partners first (then meet and discuss cooperation/technical details)
- Reverse flow of information

- Jian Lintao from CATR stressed the strong need of getting to know the respective other side better in order to be able to find suitable partners and co-operate in a fruitful way.He suggested that for EU-China co-operation there should be a focus on some selected topics.

- The European side is interested in:
  - Large scale deployments
  - Experimental facilities
  - Wireless arena with the big vendors
  - 4 topics suggested by He Baohong are regarded to be very good

- The Next FP7 call will be focused on large scale experimental facilities.

- Suggested topics
  - Future Internet Architecture
  - Addressing, routing & naming; the core for any network (scalability, QoS/TE…)
  - Evolution to future: compatibility
  - Tariff and accounting; Inter-ISP traffic-related issues

- The same topics are covered in principle.

While the Chinese experts state that in from their point of view the main problem is "How to now all detailed information about the user at any time", the European experts state that this is not about discrimination or filtering.

Participants

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