META FORUM 2012

The META-NET Strategic Research Agenda:
Overview, Preparation, Dissemination

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META NET

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The Procedure

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Roadmap

Strategic Research Agenda

Visions

communication to policy makers funding bodies, public

communication in the wider LT community and among other stakeholders

communication within META-NET (META-VISION)

2010 | 2011 | 2012
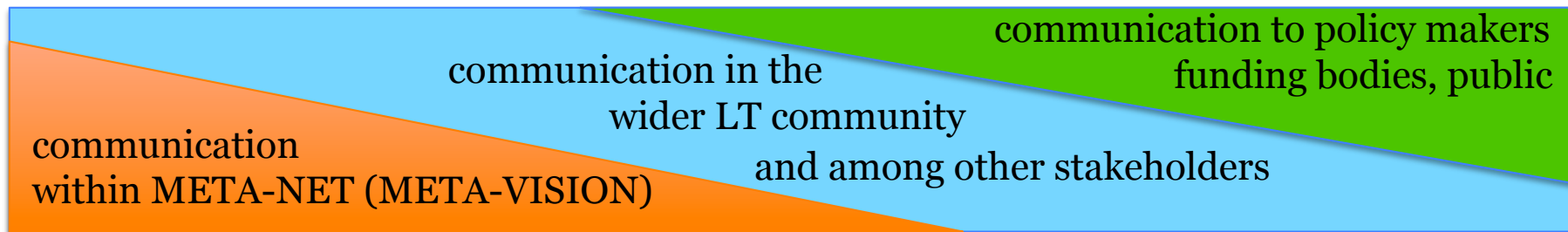
today
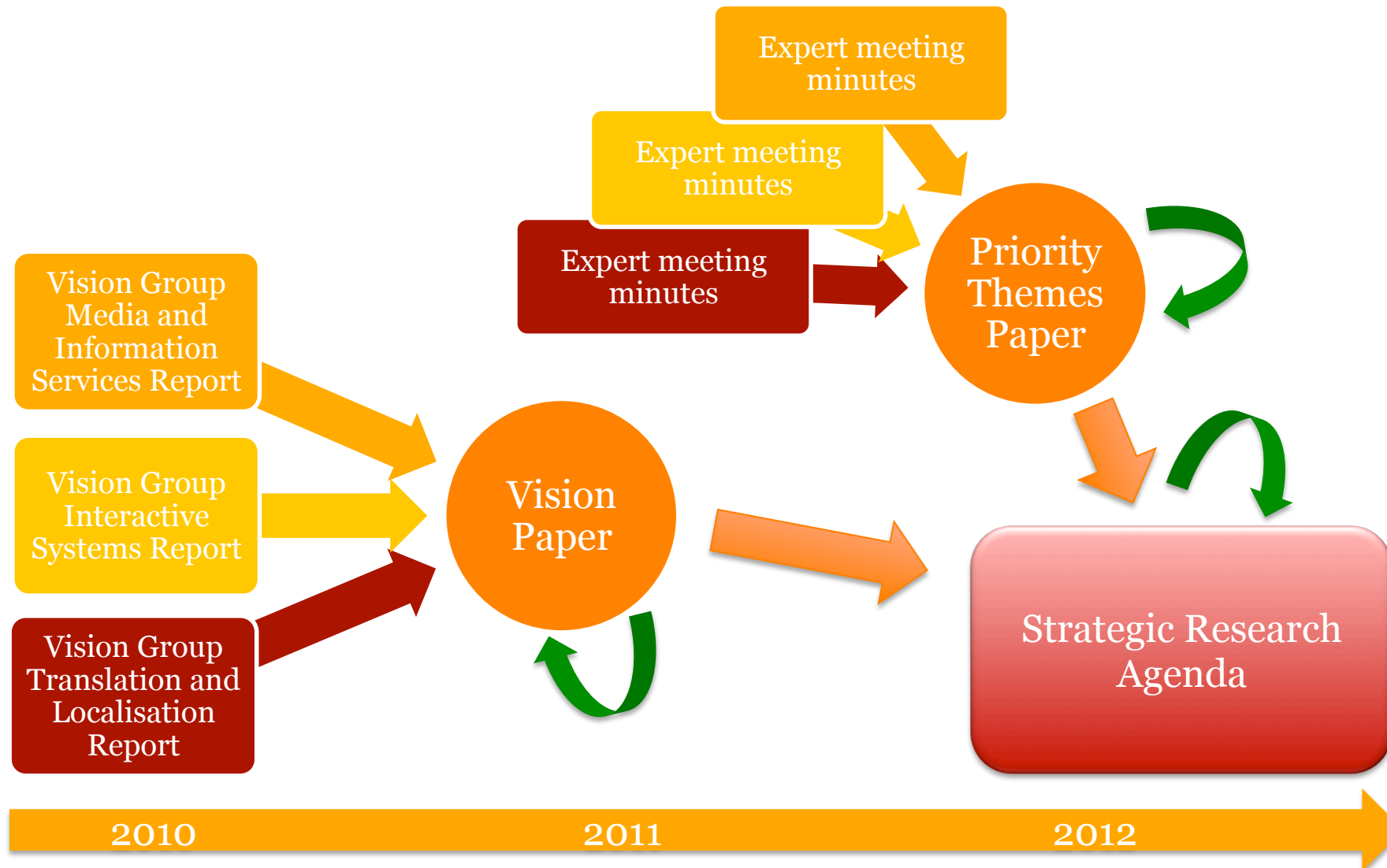
In the SRA, we…

- set the stage and describe the European situation,
  the needs and the language technology research and industry

- discuss the state of IT, predictions and mega-trends

- present our vision for 2020

- select priority themes and flesh them out

- suggest a model for speeding up innovation

- outline proposals for the organization of research and

Strategic Considerations

We need to prioritize themes that

- ❑ ...support technology progress

- ❑ ...lead to solutions that European society needs

- ❑ ...to solutions for which there is also a fair chance of European industry benefitting from marketing them

Priority Themes

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- Translation in the Sky - Understanding everything, everywhere, everytime

- Social Intelligence – Technologies for e-participation and better decisions

- Second Me – Socially aware interactive assistants
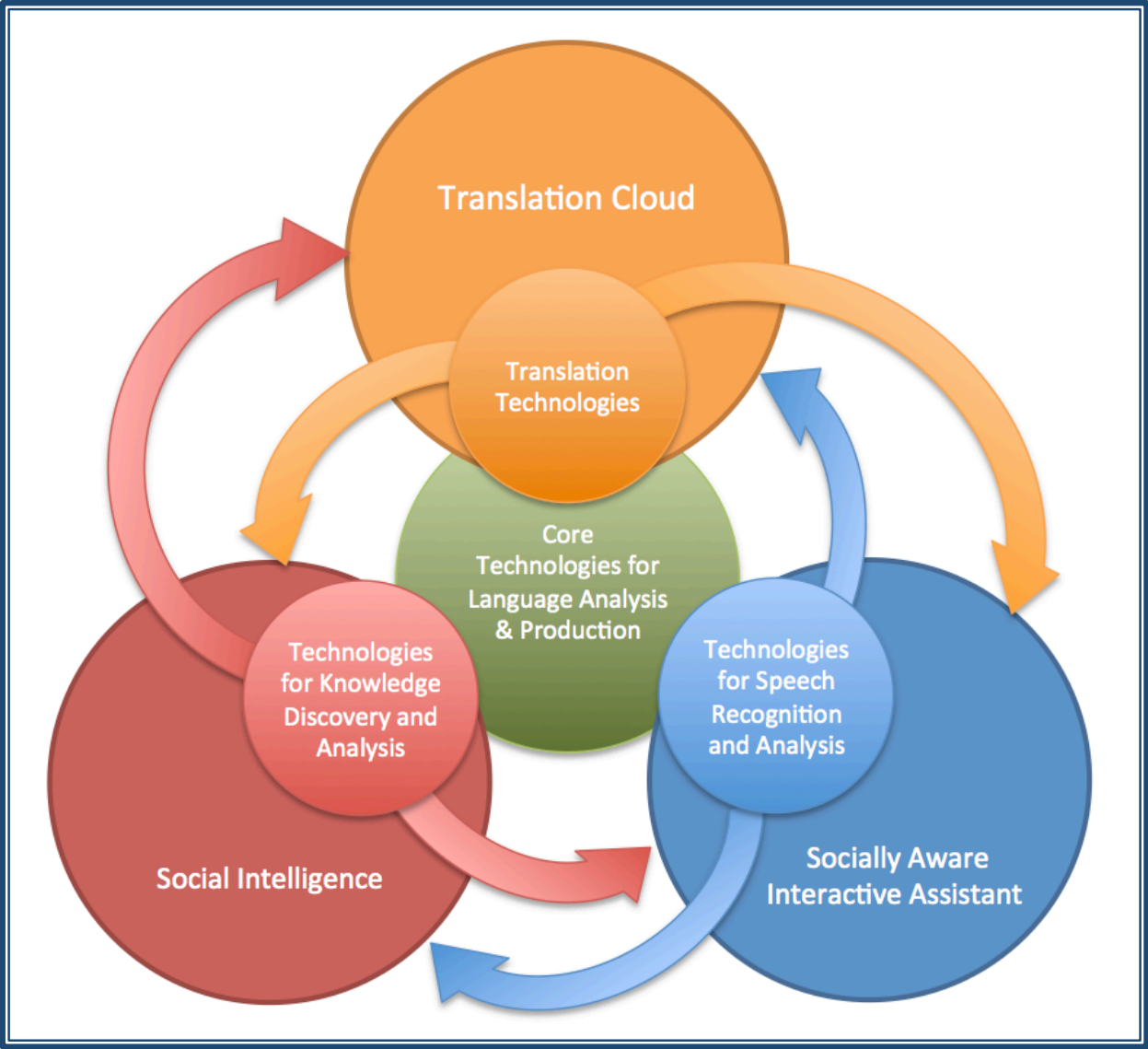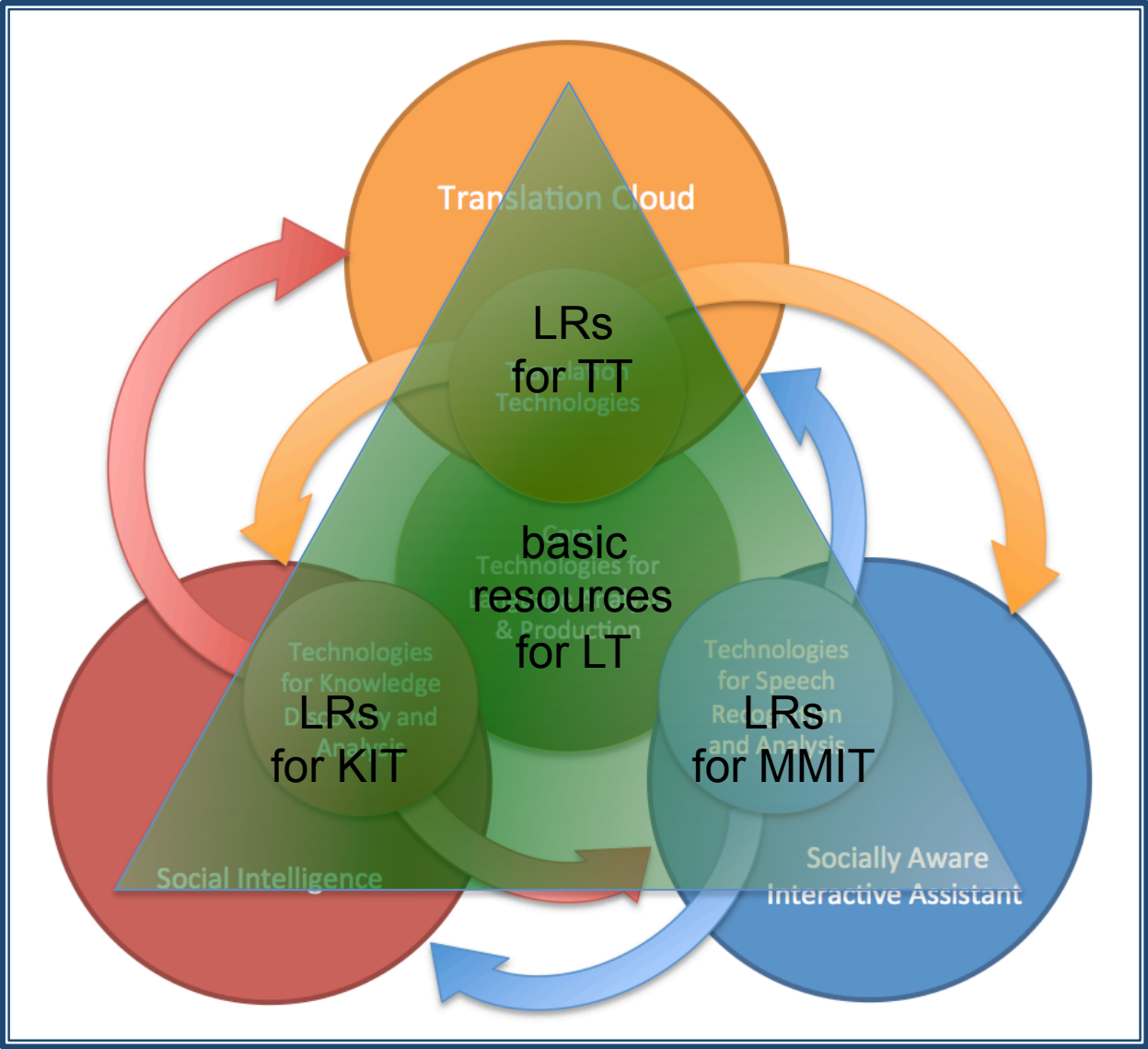
New Points

- Big Data, Linked Data, Open Data

- Services & cloud computing

- Mechanisms for Innovation (e.g. showcasing and transfer)

- Shared infrastructures, resources & technologies

- More detail and revisions for priority themes

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Megatrend Cloud Computing

- ❑ "Infrastructures as a Service" (IaaS)

- ❑ "Platforms as a Service" (PaaS)

- ❑ Software as a Service – (SaaS).

- ❑ Especially the latter concept has far-reaching, mainly beneficial, implications for distribution, support, customization, maintenance and pricing.

Sky Computing

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- The most far-reaching and promising development within the cloud computing trend is the *inter-cloud* or *sky-computing* paradigm.

- Although the cloud metaphor originated from the widely used graphical icon for the Internet symbolizing the entire global network outside the user's computer, soon the term became applied to any individual computing service provided on the Internet.

- Clouds are combined into complex services, environments with workflows realizing functionalities that exceed the capabilities of the individual services

- A new line of research and development is dedicated to the creation of sky computing platforms that permit such integration.

Sky Computing and LT

❏ Language technologies are prime candidates for sky computing

- they are often a component of complex applications such as services supporting knowledge discovery, business intelligence or text production.
- Taken into account the large number of languages, language variants and subject domains, a sky computing setup can provide a much larger number of language and task specific workflows through service composition than a traditional software product.

Platforms

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- Large global platforms for novel end-user-services have become the predominant innovation drivers for language technology solutions.

- web-services such as Google search that integrates the new Knowledge Graph concept network, speech-enabled search and web-translation.

- hardware/OS combinations such as iOS 6 for Apple's mobile devices with its speech-activated assistant Siri.

- open operating system such as Android that is expected to extend its current speech and language functionalities in the near future.

- Of a different nature: iOS distribution platforms such as the Apple AppStore

European Service Platform

- creation of an ambitious large-scale sky-computing platform

  European Service Platform for Language Understanding, Communication to be extended to Knowledge, Inference, Emotion...

- central motor for research and innovation in the next phase of IT evolution

- ubiquitous resource for the multilingual European society (an idea suggested by several experts from industry in META-NET Vision Group meetings).

- The platform will be used for testing, show casing, proof-of-concept demonstration, avant-garde adoption, experimental and operational service composition, and fast and economical service delivery to enterprises and end-users.

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An example from another field

- Helix-Nebula for the Earth Sciences

- commercial partners: Atos, Capgemini, CloudSigma, Interoute, Logica, Orange Business Services, SAP, SixSq, Telefonica, Terradue, Thales, The Server Labs and T-Systems.

- also the Cloud Security Alliance, the OpenNebula Project and the European Grid Infrastructure.

- These are working together with major research centres in the earth sciences to establish the targeted federated and secure high-performance computing cloud platform.

- SIENA, the Standards and Interoperability for eInfrastructure Implementation Initiative is funded by the GÉANT and e-Infrastructure Unit of the European Commission.

Beliciaries

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- **Language technology providers** will have ample opportunity to offer services stand-alone or integrated with others.

- **Providers of language services** rendered by human language professionals will be able to use the platform for enhancing their services by means of appropriate technology and for providing their services stand-alone or integrated into other application services.

- **Researchers** will have a unique virtual laboratory for testing, combining, and benchmarking their novel technologies and for exposing them in realistic trials to real tasks and end users but also for collecting data and sharing of resourcce.

- **Providers of other services** that can be enabled or enhanced by text and speech processing will utilize the platform for testing the needed LT functionalities and for integrating them into their own solutions.

- **Citizens and corporate users** will enjoy the benefits of language technology early and at no or reasonable costs through a large variety of generic and specialized services offered at a single source.

Our Platform is …

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❑ intended for a mix of commercial and non-commercial services.

❑ It would be cost-free for all providers of non-commercial services (cost-free and advertisement-free) including research systems, experimental services and freely shared resources but it would raise revenues by charging a proportional commission on all commercially provided services.

❑ In order to reduce dependence on individual companies and software products, the base technology should be supplied by open toolkits and standards such as OpenNebula and OCCI.

More...

❑ Thus the service platform will be an important instrument for supporting the entire innovation chain,

❑ But in addition interoperability standards, interfacing tools, middle ware, reference service architectures need to be developed and constantly adapted.

❑ Many of these may not be generic enough to serve all application areas, so that much of the work in resource service integration will have to take place in the respective priority theme research actions.
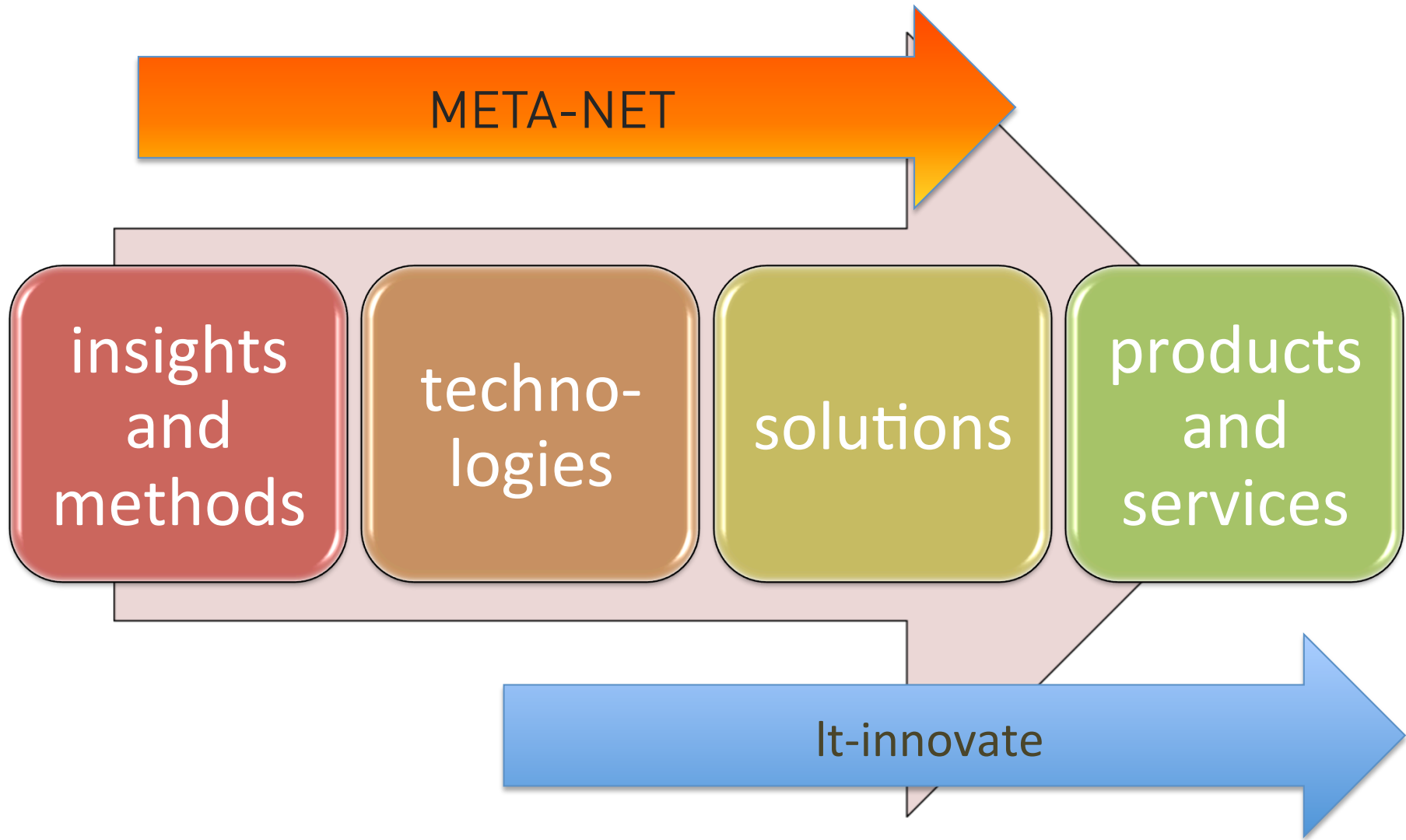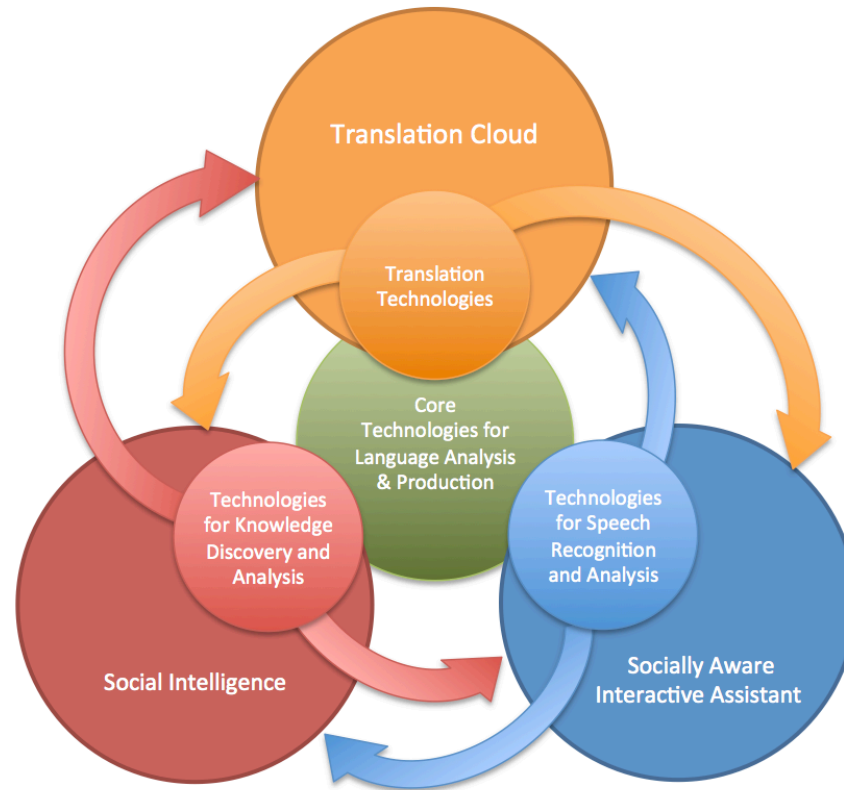
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insights and methods

techno-logies

solutions

products and services

It-innovate

Climate of Innovation

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- Apart from new ways of sharing, development, and distribution, a generally innovative climate is needed.

- mechanisms for
  - encouraging and incentivizing creativity,
  - fostering and rewarding courage
  - accessing and rebuilding capital need

- These should be incorporated into the planned research and innovation actions, new proposals need to be assessed and tested.