User Centered Innovation in Manufacturing: Roadmaps for Development

NMP2-CT-2006-032667

Contract no.: 032667

Work Package 7 - Deliverable 10

Final Project Report

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Foreword:

This is the Final Project Report for the Framework Programme 6 Specific Support Action UCIM. The report follows the planned structure of the project and outlines the sequence of

Work Packages implemented during the execution of the project. The chapters of the report set out the methodologies adopted and the main findings and conclusions of each stage of the project.

The chapters reflect the fact that some iterative work was undertaken as earlier conclusions and findings were revised as a result of later discussion and research. Some diagrams change slightly to reflect the progress of thinking during the project execution.

Chapter 1,the introduction and Chapter 2 outline the detail of the assumptions adopted by the project team in scoping the project.

Chapters 3 and 4 set out the important work of setting the context for UCIM and establishing the operational framework of what should be considered as relevant to UCIM (WP1 Deliverable 1)

Chapter 5 outlines the initial creative work on visions and visualisation of visions for selected industrial sectors (WP2 Deliverable 2)

Chapter 6 describess the main thrust of the project in developing the roadmaps for UCIM. (WP 3 Deliverables 3,4,5 and 6)

Chapter 7 overlays a policy analysis framework on the roadmapping work to outline what policy initiatives are needed to promote UCIM and makes suggestions to the European Commission on research needs and other actions tosupport the development of UCIM.(WP4 Deliverable 7)

Chapter 8 describesthe results of a validation process carried out on the project findings and outlines the over all conclusions of the project.(WP5Deliverable 8)

Chapter 9 is a brief description of the web platform set up in the project as ameans of dissemination of results. (WP6 Deliverable 9)

This final report summarises the project achievements and recommendations and should be read in conjunction with the other deliverables which are specifically referred to and linked in the respective chapters. The full results can be found in the respective deliverables.

1 Introduction

The realization of a customer/ user driven innovation system has been identified by the MANUFUTURE High Level group as a core element of a strategy enabling European industry's transition towards a knowledge-based, competitive and sustainable base. The insight that user and customer involvement into product design is highly profitable for companies has lead to the development of a number of concepts of 'co-design' involving users/ stakeholders all along the design process. Nevertheless it is clear that the envisaged shift towards such user-centered innovation approaches implies major transitions for manufacturing. UCIM concepts directly link in to Collaborative product development, but undoubtedly will have implications for collaborative value chain solutions and agile manufacturing.

Collaborative product development in which manufacturers are in closer contact with users will require collaboration between all players that now play a role between manufacturers and users or will introduce a new intermediary between them and users. In collaborative product development where different suppliers and producers work together other chain solutions must be thought of.

Changes in chain solutions and manufacturing will require specific skills, competencies, technologies, and the like. Within the UCIM project the roadmapping method was applied as a specific foresight method suited to identify needs and requirements to enable collaborative product development. As input for the roadmapping exercise, and, more specifically, the visions that were used as a starting point for the roadmapping workshops, information was gathered on concepts of User Centered Innovation available for and used in industry.

2 Kick-Off Meeting

The kick-off meeting held in Brussels on February 13th 2006 discussed the project plan and decided a range of important methodological steps. It was decided that the typology should be focused and that in UCIM between 5 to 7 such "types" of user involvement will be identified and 2 or 3 of them would be closer described in the roadmaps. It was decided also to ensure that both business to consumer(BtoC) and business to business(BtoB) contexts would be examined.
Selection of sectors was extensively discussed and the furniture sector ws chosen as the BtoC sector and Machine Tools was chosen as the BtoB sector.
The selection of experts was discused and a general profile of experts from industry , academia and research was developed. It was hoped to interest consumer representatives but this proved not to be possible mainly because those approached could not relate the extended time view of the project with their immediate concerns.
There was much discussion also on the involvement of representatives of the SSA LEADERSHIP project in various aspects of the UCIM project as experts and workshop participants. However, numerous contacts with LEADERSHIP went unanswered and in the end no involvement was forthcoming.

3 UCIM concepts

3.1 Identification and characterization of UCIM concepts

To gain insight into the nature and type of concepts which can be used for user centred innovation for the manufacturing industry and based on literature, a total of 32 concepts have been identified and mapped on their context and objectives, to get an idea of their nature.

The characterization of concepts was done through a web-based platform called 'Dynamo'. This platform is essentially an online database that is used to gather information on innovation and future studies. In Dynamo, the UCIM concepts are described on the following characteristics:

Context of UCIM concepts	**Objectives of UCIM Concepts**

• Customer:
  o Target group
  o Needs and societal trends
  o Competencies and skills required
• Type of products
• Type of production processes
• Role of intermediaries
• Research infrastructure
• Technical infrastructure
• Chain infrastructure
• Regulative framework
• Innovation and technology policy
• Method/ interaction
	• Added value chain
	• Type of innovation
	• User involvement
	• Output

Table 1: Characteristics of UCIM context and objectives

On the one hand, UCIM concepts are employed in a characteristic context, reflecting the applicability for specific projects, the requirements in which the concept can be employed and its implications for use.

On the other hand, UCIM concepts have certain objectives to decide which concept to be used at all. First of all, its output must be useful for the firm which employs the concept. Second, the concept must link up in the value chain, the type of innovation to be developed and the involvement of the user must link with the vision or strategy of the firm.

3.2. Clustering and mapping of UCIM concepts

A clustering of UCIM concepts was made based on the type of interaction between manufacturers and users. This was based on the TNO criteria: Role of user/manufacturer, goal of involvement, nature of involvement and direction of communication. The clusters thus identified are:

A. Joint innovation
B. Mediating user innovation
C. Make to order
D. Channel user innovation
E. Do it yourself

In the table below the clustering of the concepts is given:

	UCIM cluster	**UCIM concept**
A	Joint invention (6)	**Co-design workshops** **Design by community** **Field labs** **Participatory design** **Lead user method** **User oriented product development**
B	Mediating user innovation (5)	**Collective customer commitment** **Open development platform** **Open source model** **Toolkits for user innovation** **Virtual customer environments**
C	Personalized make to order (4)	**Custom fit** **E-tailoring** **User centric identity management**
D	Channel user innovation (11)	**Beta testing** **Brainstorming with user** **Brand communities** **Customer communities** **Empathic design/ emotional design** **House of quality** **Living laboratories** **Participatory design** **Scenario based design** **Simulation / games** **Virtual customer environments**
E	Do it yourself (1)	**Personal fabrication/ fabbing/ self customization**

Table 2: Clustering of UCIM concept

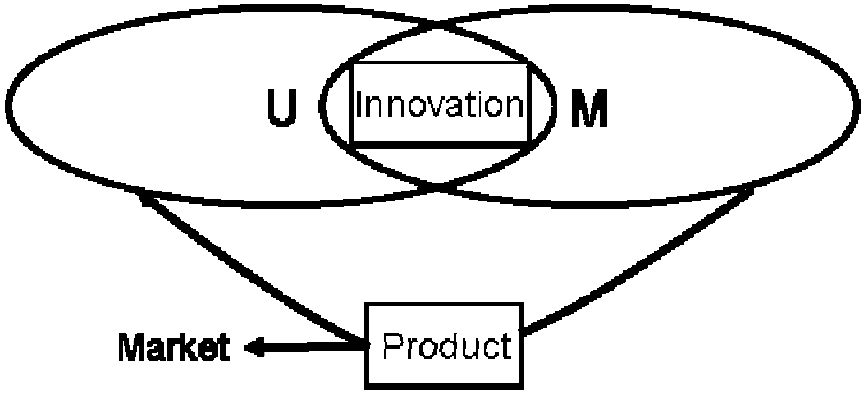
4 Description and examples of UCIM concepts

Based on information gathered, discussion within the UCIM team and experts and examples from different UCIM concepts, descriptions for the UCIM clusters were made. Comparing the different clusters with each other, there were quite some differences in target groups, type of products, production, added value and output.

4.1 Cluster A: Joint Innovation

This cluster of Joint invention concepts most clearly link up with the trends of consumer empowerment and open innovation. They are mainly employed during the Research and Product development phase focusing on a specific target group, being specific experts and lead users as representatives and front runners for the large majority, to create a high technical value involving high investment, and long lead innovation time and is especially suitable for exploitation and inventions by users and leading to mass production. *Cluster A. Joint innovation* requires Open innovation and new research about socio economic drivers and impacts, new communication networks, ICT based technologies and availability of user friendly technical equipment. As ideas or innovations are created in collaboration with consumers UCIM clusters, such as *Cluster A. Joint innovation* and *Cluster B. Mediating user innovation* will especially require a regulatory framework with regard to intellectual property is required.

In short Cluster A can be typified as: Users and manufacturers work together to improve a certain product type to meet better user demands. Afterwards company sells the innovation in the market.

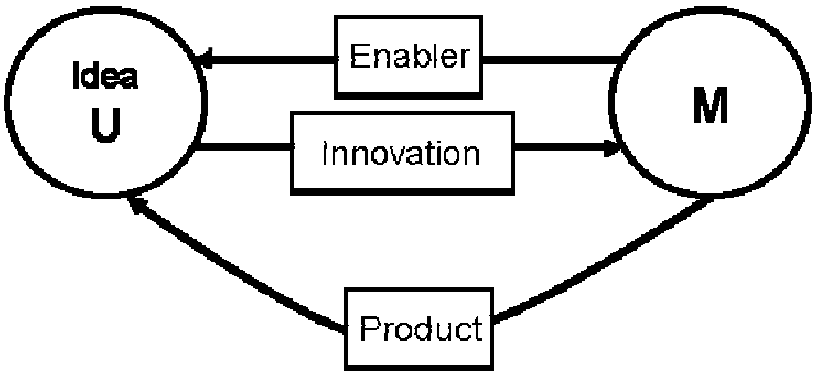


4.2 Cluster B: Mediating/enabling user innovation

Concepts within the mediating user innovation cluster can be used broadly, covering different added value chains and types of output. However, they can be characterized for the application of fast moving good for mass production, often complex production, thus requiring a long term innovation time and product development and research. On the other hand this cluster also allows for business case development and finding new ways to use existing products. The target group is quite specific approached by Internet platforms, requiring new UCIM technologies and tools for consumers and manufacturers, new

communication networks and ICT based technologies, as well as new organizational structures and distribution of work. *Cluster B. Mediating user innovation* is suitable for product development and research. Idea generation by consumers supported by manufacturers is key to this cluster and thus Personal Creativity and Entrepreneurship are especially relevant for this cluster as well as a regulatory framework with regard to intellectual property and product liability.

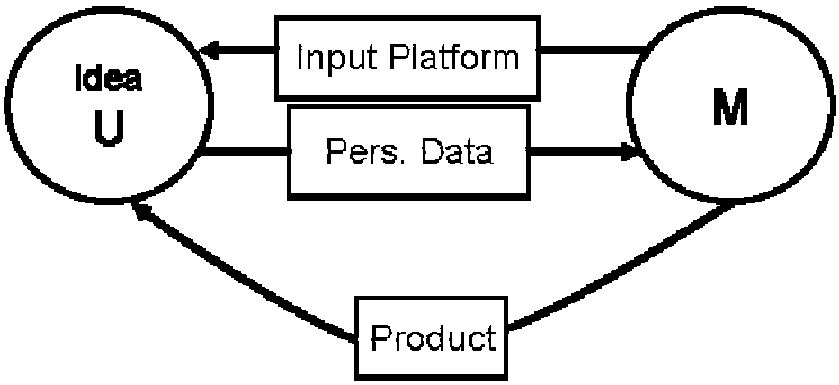
In short Cluster B can be typified as: Manufacturer enables user to innovate by providing the necessary enabling tools. The individual product is produced by the manufacturer according to the users' specifications. New business models are involved.



4.3 Cluster C: Make to order

Personalized make to order concepts are mainly employed for durable products in the manufacturing phase relying on the personal creativity and entrepreneurship of the large majority, random user that want personalized products. Production is often in flexible way targeting on a large group inquired via a web based application on the internet on current and possibly future needs for the functional design purposes and to be translated in tangible product characteristics. This cluster is especially focussing at the manufacturing and distribution and is suitable for business case development, manufacturing: production and assembly and distribution and logistics. *Cluster C. Personalized make to order* most likely will allow new professions and consultants to emerge, and supply chain integration with new organizational structures and distribution of work. Furthermore it requires new communication networks or decentralized shop floors, ICT based technologies and the availability of user friendly technical equipment. It is especially true for this cluster of UCIM concepts aiming at involvement of users in the final assemblage of products, that new technical standards and regulations are important. As for product liability a new situation (division of work) will arise and appropriate legislation must be put in place.

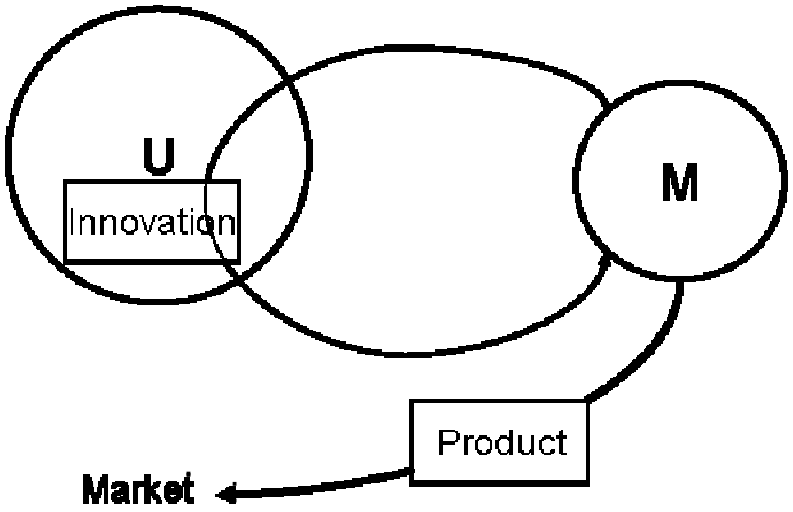
In short Cluster C can be typified as: User sends to the manufacturer personal data (body size etc.) via an interface provided by the manufacturer (e.g. body scanner in a textile shop). The manufacturer assembles and delivers a product that is fully personalised according to the users' specifications.



4.4 Cluster D: Channel user innovation

The cluster of channel user innovation - being a more classical UCIM approach like cluster A - is with regard to target group, type of output and added value chain the most widely applicable of all. Concepts are mainly applicable for durable products for mass production, getting a hold on emotional design and tangible product characteristics in a user environment and giving input to research and product development. New approaches to this cluster will require new internet platforms and changes towards open innovation and ICT based technologies to improve this UCIM approach. Because this approach is the classical UCIM approach, there are no radical changes in the technical and chain infrastructure.

In short Cluster D can be typified as Company captures innovating users' ideas (single users but also user groups) and transforms them into products.

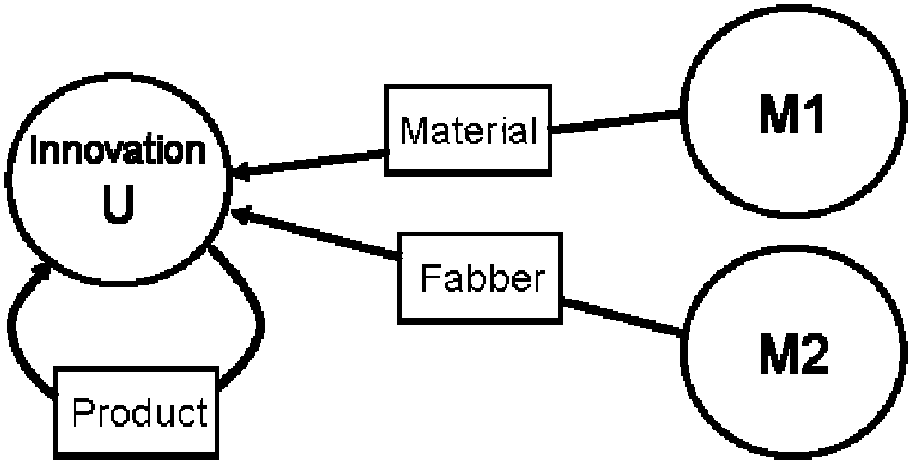


4.5 Cluster E: Do it yourself

Concepts within this cluster aim at involving users in the manufacturing sequences, especially fabrication and assembly. This leads to changes in manufacturing, production

and assembly and in distribution and logistics. It requires personal creativity and entrepreneurship from consumers. As these concepts are not yet common the implications are not yet clear. However, given an open mind, the right infrastructure and collaboration with manufacturers and eventually scientist the innovations could be very radical. This cluster will have major implications for production, when this radical change in participatory product development in which the users actually design, fabricate and assemble their own product is effectuated. It is a UCIM approach involving users in a 'design by' approach and that brings users and manufacturers closest together and requires very flexible and dedicated production. Furthermore, could have major implications for the infrastructure and requires open innovation, new UCIM technologies and tools for users and manufacturers, new research about socio-economic drivers and impact, decentralized shop floors and ICT based technologies, and changes in the supply chain; integration, new organizational structures and new distribution of work. Needing new technical standards and regulations and special attention for product liability

In short Cluster E can be typified as: The user becomes the manufacturer. A number of companies provide material, equipment and complementing services.



A full description of the clusters with examples and a statistical analysis of 16 mapping indicators is provided in the Work Package 1, Deliverable 1 Report which accompanies this Final Project report.

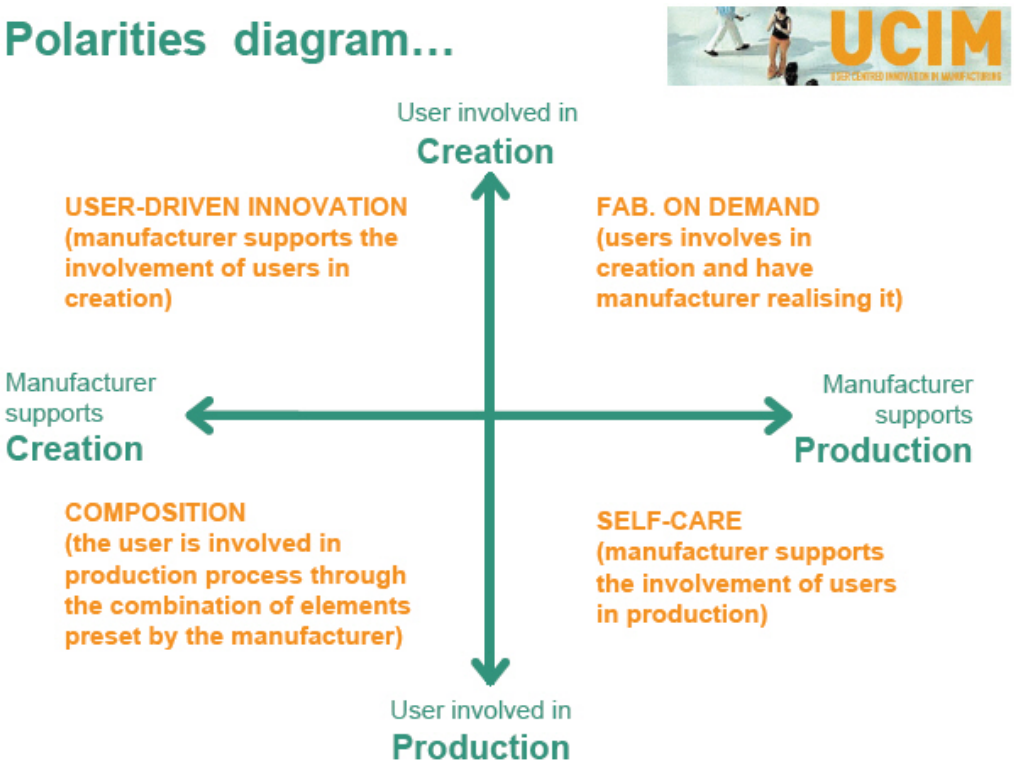
5 Input for roadmapping: Visions and Visualisation

Work package 2 involved the creation of vision statements and visualizations for these visions as a precursor to the roadmapping phase of the project. The initial work for this element of the project was planned and set out at a creative meeting of all the team members held in Seville at JRC-IPTS over two days. Based on the information from UCIM clusters and team discussions it was decided to start the roadmapping by developing a pilot roadmap for the furniture industry. The first vision was a hypothesis for the furniture industry to a time horizon of 2020/2025 and it was based on the following assumptions:

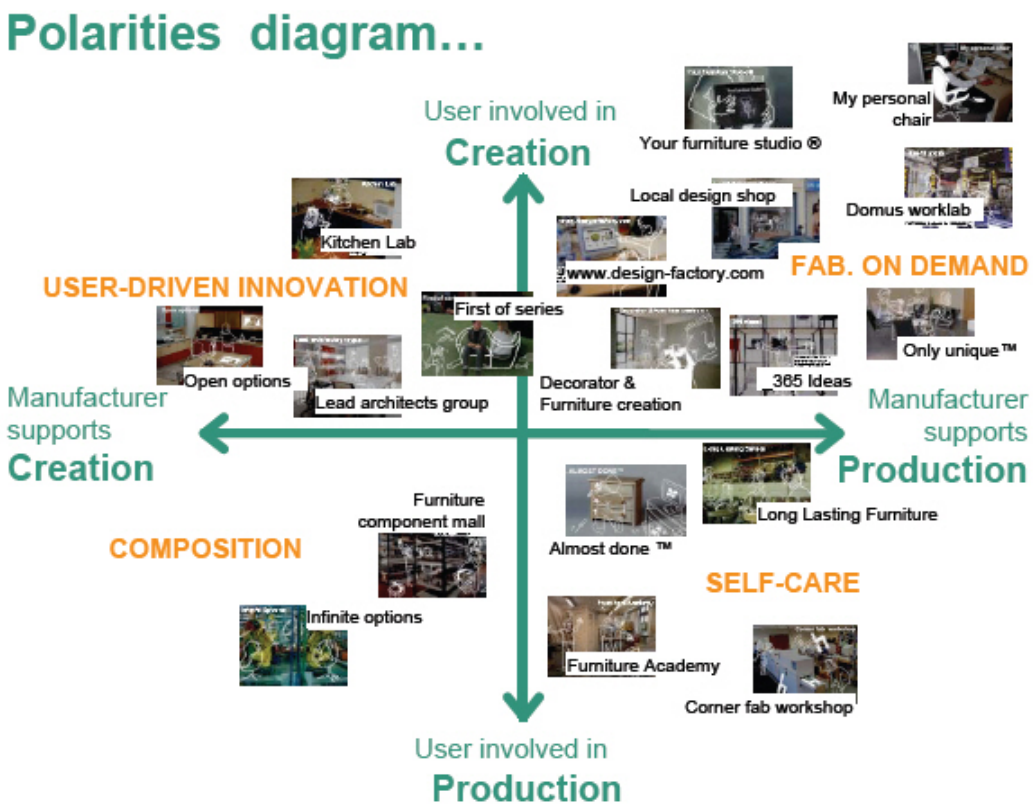
- _a good share of the furniture produced in Europe will be based on the involvement of users in the creation and/or the production process of the product;
- _the European furniture industry will partly comply to the requirement of sustainability;

This hypothesis was intended to give to the European furniture industry competitiveness on world markets.

For each type of interaction identified in WP1 situations were developed illustrating how each type of interaction could be realised in furniture industry in 2020. The vision was based on a series of 18 possible situations of final/intermediate users involved in the conception and/or the production of furniture. In order to assemble these 18 situations into a coherent panorama, a polarity diagram served to distinguish different types of situations depending on involvement for user into production vs. involvement of user in creation on the one hand and manufacturer support to creation/production on the other
The combination of these 2 polarities generate 4 areas described on the following Diagram



The situations were located on the polarity diagram and posted on the UCIM interactive web platform and discussed with experts from furniture industry within a series of interviews as well as through online commenting.



This diagram was used to guide a series of interviews with experts in the furniture industry and some more generalised areas of operational management and strategic management for manufacturing. The results of the interviews were incorporated into a revision of the descriptions of the situations listed and the 18 situations were reduced to 14 as four were considered by the experts to offer little benefit to the industry or the users/customers.

Full descriptions of the situations outlined for the furniture industry are included in the Work package 2 Deliverable 2 Vision Statements and Visualisations of Visions Report accompanying this Final Project Report.

6 Roadmapping Workshops

As a first step of the roadmapping process assessments of the visions and suggestions for roadmap elements had been collected through a series of expert interviews. A scoping document for the first workshop was prepared by the project team. This is contained in Work Package 3 Deliverable 3 which accompanies this Final Project report.

6.1 Workshop 1

The first workshop started from these results to create more consistent pathways towards customer oriented innovation within furniture industry. Together with a group of experts the project team met in Brussels on June 8th and 9th 2006 and:

- Discussed the UCIM visions
- Collected element needed to realise the promising visions
- Aligned these elements to form possible pathways towards these visions (roadmaps)
- Identified barriers hindering these developments
- Brainstormed on possible research projects suitable to support the pathways.

Following a detailed introduction to the project the group examined the 18 situations which had been developed as elements of a future furniture industry and pooled their views on the desirability of the visions and the likely time of occurrence. This allowed three clusters of visions to be extracted.

The group then formed three sub-groups which took a single cluster and in a creative session developed a more detailed description of the cluster. The groups defined elements needed if these situations were to become reality under the following headings:

- Technologies
- professional skills
- Organisational competencies
- Expertise/disposition needed from user
- Other

The groups then positioned the elements on a rough timeline and produced a small text describing a company/ business using all these elements. Finally they described the key elements using a template.

Following a plenary discussion the elements were further developed with barriers to achievement being developed and solutions to removing barriers being suggested.

The workshop also spent some time suggesting research projects that might be considered for the NMP Work Programme for FP7. These suggestions were included in the UCIM Interim Report.

The following is the outline of the three selected scenarios for the Furniture industry roadmap:

6.2 Scenario 1 Own Sweet Home®

Your personal furniture solution

User point of view:

core service:

_a family goes there for a consultation in which they will create and order a new bedroom for their kid…

_they are supported by an adviser/coach in an hour of "creative session" looking for basic models to start with, touching samples of materials, modifying the models on a computer system and finally visiting a 3D visualisation of the bedroom new interior design. If they order it, *Own sweet home* staff will deliver and assemble the pieces at home some weeks later

_from single models to integrated furnishing solutions are based on the design of a system of products as trade-offs between the combined capabilities of the clustered companies and customization services offered to the customers;

Simulation of an advertising campaign showing benefits of scenario options:

_customization can also be made from home accessing the service software on-line;

_web communities debating and exchanging the self created designs are encouraged by the manufacturers

_user can book the coach/advisor to come for a consultation at home;

_users in need of furniture fitting their physical characteristics (e.g. to fit in the space or for ergonomic requirements) can opt to have their data measured on the spot with 3D scanners facilities.

Business point of view:

_a cluster of regional furniture producers organizes itself in a partnership in order to provide on the local market a complete offer for the household emphasising high quality, regionality and environmental standards. The cluster of companies is constituted in order to cover most material and furniture products types involved in the household. According to the orders received, the companies connect to each other on a project base to realise it. All the clusters rely on 3-4 regional points of sale that look like a chain of small branded showrooms & advisory desks;

_the brand works as a franchising at the national or European level but is based on regional clusters of existing furniture companies. The regional system organizer can be an independent new company or one existing furniture producer that takes the leadership to federate the others;

Manufacturing point of view:

_the solution is based on existing companies that evolve in order to have a very flexible production able to make pieces one-by-one at medium-low cost and in full interaction one with the other. For this purpose, network of furniture manufacturing SMEs together with machine tool manufacturers have developed highly agile multi-purpose manufacturing equipment that is affordable even for the smaller network members and for all classical materials of the furniture sector;

_a common furniture data standard is used by all actors in the regional network such as the design software, the machine tools, the ERP system etc…

_a specific software is able to support the "furniture advisor" in showing and shaping customized furniture integrating possibilities and limitation in terms of manufacturing and logistics. The same integrated software is able to co-ordinate and streamline all the production and flow of material between the different clustered companies.

_the basic models that are implemented in the software have been created on the base of an open design concept that enables easy change and offers many possibilities for variation around a limited number of basic models.
_according to transport convenience, pieces of furniture are delivered mounted or almost assembled.

Sustainability point of view:
_local production and co-ordinated logistic within the cluster and the home delivery;
_no overproduction (only on demand);
_longer product lifespan due to both personal involvement of the users and long lasting quality products;
_no/less furniture packaging (i.e. reusable protections like movers practices);
_strong environmental standards are part of the marketing strategy

6.3 Scenario 2 Customize & Carry®

an all range of ready-to-adapt furniture

User point of view:

core service:

_the family visits the showroom, decides for some models and orders them from a PC-point in the showroom. The PC-point allows customers to see the model they choose, change certain parts, try the colours variations, modify certain adjustable components and even add some specific decoration and finally have it processed. The order is checked by production staff and prepared on the spot from semi-finished components. From the cafeteria customers follow their order processed in a mini-production plant on the spot, pick-up their parcels and assemble it at their home.

options:

_delivery & assembling services are available;
_customization software is also accessible on-line to try out from home;
_self-production 3D printing workstations are also available for direct use by customers (i.e. for decoration part or as little work-lab for kids).

Business point of view:

_a medium/large furniture manufacturer in collaboration with machine-tools producers develops a specific offer of semi-finished components and light automated machines. The range of possible customizations is targeted on user main request such as adjusting the dimensions, colours, adding simple decoration… The business model is based on a light customization and an exclusive system of "semi-component-finishing fabbing tools" in order to protect them from copy by competitors;
_the place offers a showroom exhibiting enough models, a stock of semi-finished components and a small machine plant equipped for simple modifications of the components, finishing and pre-assembling and for 3D printing of specific components (if not in stock or designed from scratch).
_the products are based on the design of a system of models that allows maximum variation with reduced number of components and easy/quick processes (i.e. panel cutting with rough edges; use of coloured material…)

Manufacturing point of view:
_a series of specific automated machine-tools have been developed for easy/quick modification and finishing on the spot in a safe and healthy way;
_each furniture is designed as a system including the model, the definition of the semi-finished components or materials, the machine able to adapt them and the software to enable user interaction.
_semi-finished components are made in the classical materials used for furniture (wood, metal, fabric…) and finished with rapid finishing technologies or components are produced directly on the spot with 3D printing technology.
_the multiple results come from the modification/finishing of a reduced number of component allowing a reduced stock and small-medium size shops.

Sustainability point of view:
_work on a limited number of components diversified locally;
_less over-production (finishing on demand);
_more long lasting products due to certain user involvement in the personalisation;
_it is to be noted that the components/fabbing system should be designed to avoid leftovers from finishing on site, maximise recycling and only use safe and healthy processes.

6.4 Scenario 3 Rent a piece®
Adaptable furnishing for leasing
User point of view:
core service:
_the furniture are leased for short/medium period of time answering to the need of a more mobile population with more diverse living patterns or desire to a more frequent renewal of the household interior design. For instance, a family would lease a bed for its new born child and change model when he grows; people often moving will travel lighter not having to care for their furniture; garden furniture will be delivered in the summer period, taken back and stored in the winter; a new trend in families will be to change periodically the furniture in a continuous metamorphosis of the interior design…
_The user can chose and try the furniture from the park of furniture available at the showroom / leasing-points as well as order them on an on-line catalogue.
_The customisation to the user needs exists at two different levels: Along all the leasing period, the pieces of furniture may be exchanged to fit to the evolution of the client requirements. After a period of leasing, each piece of furniture is revised and renewed.
According to the state of the product, the maintenance or re-fabrication process needed is the occasion to customise it according to the next client expectations.
options:
_both picking-up points and home delivery are available;
_the service can be used as a possibility to renew and maintain pieces of furniture over a long period without exchanging it;
_the service is also covering specific markets such as renting office furniture for companies or providing furniture for furnished apartments;

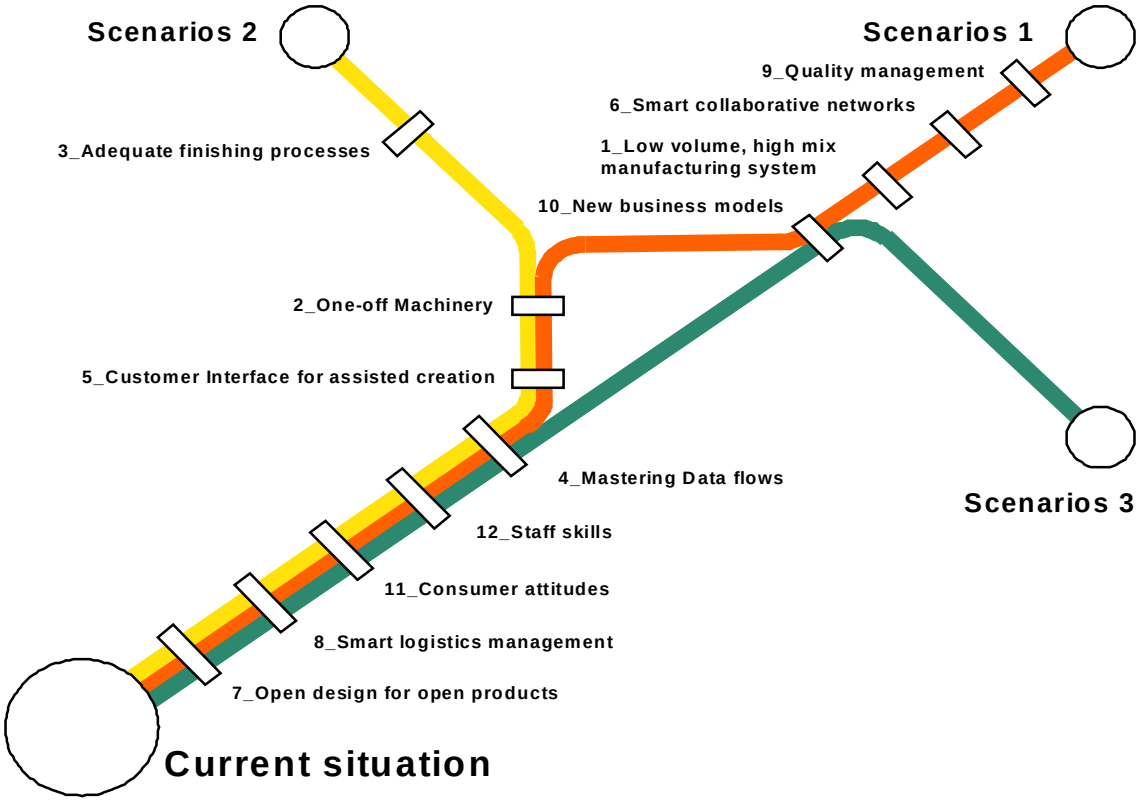
Business point of view:
_the leasing business can be developed aside a current manufacturer activity or be developed from scratch from a third party;
_typical organization is based on a reduced number of productions plants able to perform heavy re-fabrication process and a larger number of distributed leasing points in franchising only managing a park of pieces of furniture and performing simple maintenance operations.
_a range of models is available in several exemplars at each leasing point constituting a park of furniture for leasing;
_the production is most likely to be local in order to facilitate exchange, maintenance and re-fabrication along product lifespan.
_the payment is made according leasing periods or by subscriptions to evolving solutions over a certain period of life (i.e. a kids bedroom per year; garden furniture per season; full house furnishing per renting periods of the apartment…) . Extra charges are requested for anticipation of the maintenance program and specific customisation requests (i.e. changing colour and finishing fabrics, adding components…).
_payment stream is slow at the beginning and would require initial capital but it turn to bring higher margin at the end;

Manufacturing point of view:
_the furniture are specifically designed for easy maintenance and renewal (i.e. easy disassembling, renewal per parts, quick substitution of finishing elements, re-fabrication and restyling possibilities, reuse of certain components at the end of life…). The pieces of furniture are simple and robust. They are not adaptable but can be easily exchanged according to the evolution of users needs. ;
_the furniture are made of high quality and long lasting materials to adapt to leasing conditions (i.e. robust assembling and highly resistant technical parts; use of materials and finishing ageing "well"…). A program of maintenance and renewal is established according to the type of furniture and the average use normally made;
_the renewal and re-fabrication of the products allow a certain level of customisation (i.e. by combination of the various products components, during the renewal of used parts…)

Sustainability point of view:
_longer product lifespan through robust and long lasting furniture and different levels of renewal, re-fabrication;
_the service answers to the desire of the users to renew their furnishing through leasing and periodic renewal instead of production of new pieces.

6.5 Roadmapping Pathways:

For each of the scenarios the enabling technologies and organizational factors that support the achievement of the scenarios were identified and set out in the form of a Metro map.



The following enablers were identified in the first workshop.

6.6 Enablers:

- High Mix- Low volume Manufacturing systems
- Technology for one-off production.
- Flexible finishing processes
- Mastering the data flows
- Customer interface for assisted creation
- Smart collaborative networks
- Open design for open product.
- Smart logistics management
- Quality Management
- Business models
- Customer/User attitudes
- Staff skills
- New materials
- Systems and sensors for performance monitoring
- Modelling & Simulation

These were added to and refined in the second workshop and in some instances renamed to reflect changes in emphasis and more precise definition.

The detailed report on the first workshop constitutes Work Package 3 Deliverable 4 which accompanies this Final project Report.

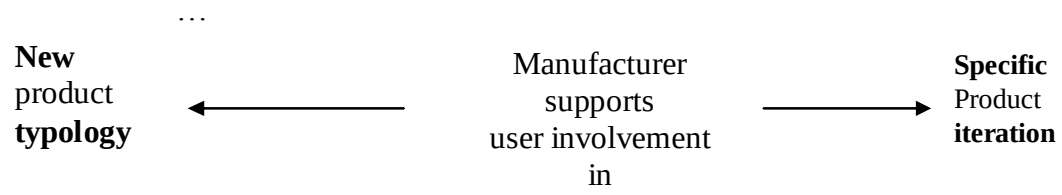
A full description and discussion on these enablers is to be found in the Roadmapping Report Work Package 3 Deliverable 6 which accompanies this final project report.

6.7 Workshop 2

In preparation for workshop 2 further visions applicable to the machine tools sector were developed. In this case the context was business to business and the technical knowledge and competence of the users were generally at a higher level than in the furniture sector.

The polarities diagram for the machine tools sector was revised to reflect the more key role of innovation in the relationship between the parties in a BtoB context.
The team reviewed the 2 polarities used to organize the vision on the furniture sector in order to find a scheme usable for Machine Tools, Furniture and other sectors. The intention is to tempt to consolidate polarities relevant for "user centered innovation in manufacturing" in general and not anymore sector specific polarities. This could allow the differences between the sectors to be shown on the same general scheme (i.e. if the 4 areas of the scheme are covered differently according the sectors considered) and it represented a first step towards UCIM final integration work…

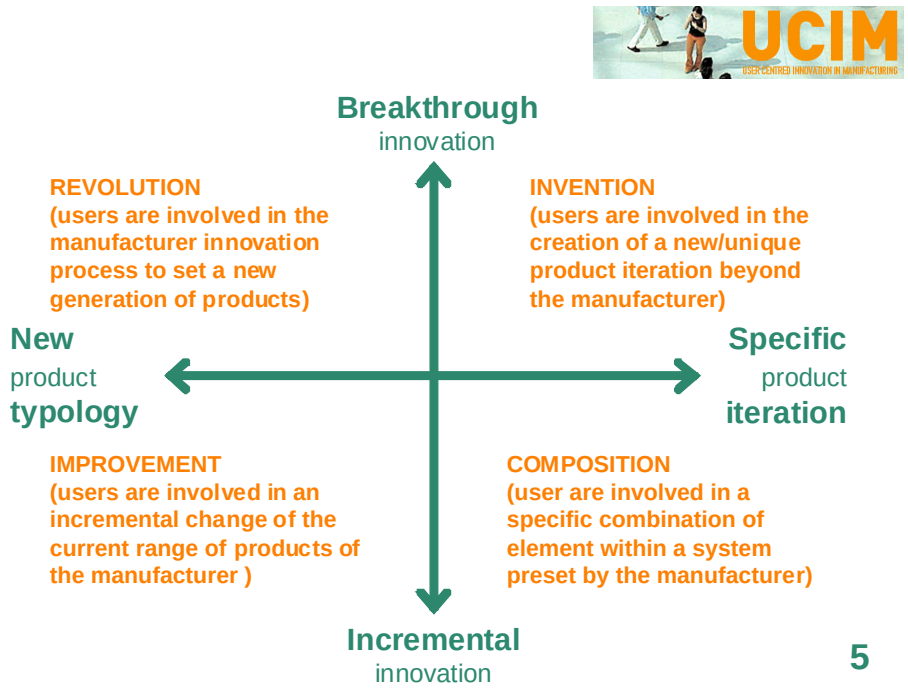
The first polarization to consider across any sector is certainly whether the user part is involved directly in the company innovation process to generate a new typology / generation of products (i.e. user research, observation; joint innovation…) or the user part is involved in a personal differentiation process to generate his own specific iteration of the product (i.e. customisation; do-it-yourself; make to order; combination of components…). The polarity to consider would then be:



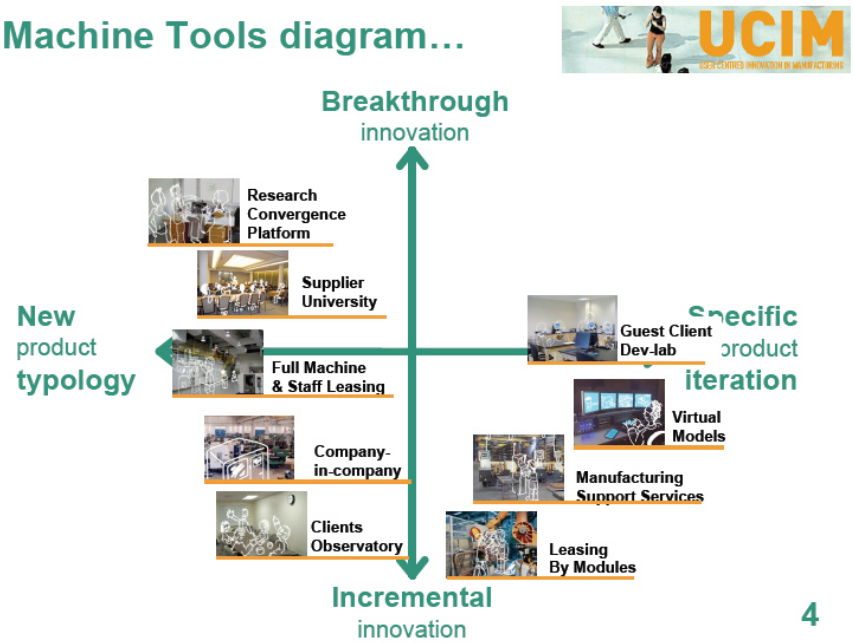
The second polarization to consider is certainly the level of innovation focused either incremental (i.e. user involves in composing their own product, manufacturers observed users practices for improvement…) or breakthrough (i.e. users are inventing unique solutions, manufacturers aims at a revolution in the typology of products…).

The polarity to consider would then be:

Breakthrough Innovation ← Users involvement aims at… → **Incremental** Innovation



A further series of interviews were carried out by the team with stakeholders in the machine tool industry and a series of visions appropriate to the sector developed. These are illustrated in the following diagram.



Full descriptions of the situations outlined for the Machine Tools industry are included in the Work Package 3 Deliverable 5 Scoping Document for Workshop 2 accompanying this Final Project Report.

6.8 Second Roadmapping Workshop:

The second roadmapping workshop held in Brussels on December 6th and 7th 2006 adopted the following approach:

Objectives:
Development of a roadmap towards customer integration in European manufacturing industry

- Generalise sector specific findings
- Identifying the main enablers(additions to those for Furniture)
- Identifying barriers and policy measurers for supporting the desirable visions

The visions for the Machine Tools sector were discussed and elaborated. The list of enablers was reviewed and some additions made. The debate was then widened to establish which visions could be adapted to a more generic form to suit other sectors. This debate led to a revision of the enablers list, maainly in the form of renaming some enablers to more accurately reflect the issues they address.

6.9 UCIM scenarios

Starting from these insights and taking into account the feedback from experts from various sectors four general desirable UCIM scenarios could be identified. These scenarios do not only describe an optimum of user integration into innovation but are also incorporating a prospect for a sustainable and competitive production located in Europe.

UCIM Scenario 1: MyProductValley
Individualised production in local production clusters with a joint space for interaction with the customer or – in the case of less complex products - networks of shops where individual data is captured and personal products are produced within nearby factories.

UCIM Scenario 2: Create and Carry
This scenario envisages shops where some product components are produced on the spot in a back-office workshop and assembled together with standard parts into personal products according to users demand. Some of the individual components can be generated through modification of existing components others completely freely.
The scenario also embraces manufacturing centres where personal products are produced on the spot on demand through fabbing on the base of 3D design information either for individual consumers or for business applications (e.g. spare part production within a technology centre).

UCIM Scenario 3: Leasing My long-term needs
This scenario features provision of individual product service systems that are adapted to customer needs over the whole life time either through exchange of product or through continuous adaptation of one long lasting product.

UCIM Scenario 4: Co-Innovation
Co-Innovation involves close long-term collaboration between manufacturer and (lead) users to innovate according to users needs. The scenario will often involve joint workshops where specific methods and supportive technical equipment are used for joint generation of new products. Another important element of this scenario is proactive observation of the customer to identify user innovation and user needs and continuous uptake of the monitoring results and transfer into innovation activities.

6.10 The UCIM enablers

The enablers identified by the UCIM work can be clustered into the following groups:

Manufacturing4UCIM

- High Mix - Low volume manufacturing systems
- Flexible finishing processes
- One-off manufacturing
- Rapid Manufacturing Technologies

Design4UCIM

- Adaptive product design
- Integrated design
- New materials

Interfaces4UCIM

- User creation interface
- Mutual guidance instruments
- Virtual simulation
- Usage monitoring systems

Collaboration4UCIM

- Smart logistics management
- Smart networks
- Data Flow management
- Network quality management

Company4UCIM

- New business models
- Staff skills

People4UCIM

- User attitudes

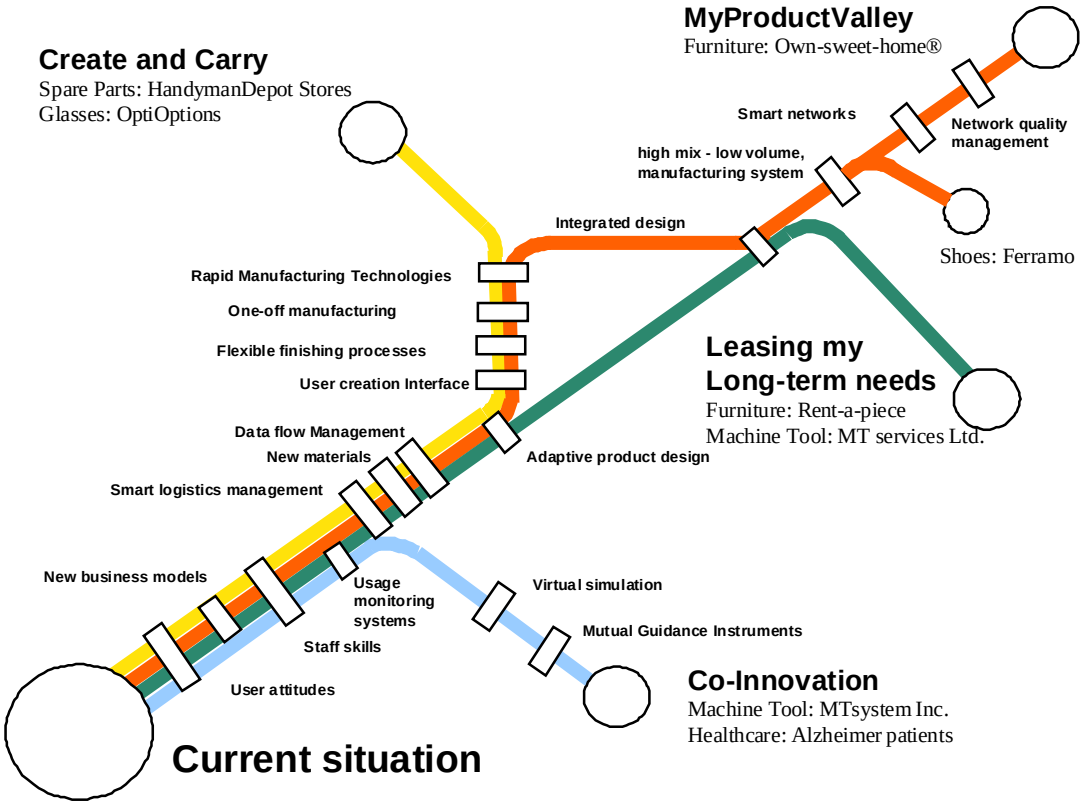
6.11 Conclusion - Pathways towards UCIM

A number of enabling elements for European manufacturing industry to take up user innovation with a benefit for competitiveness and sustainability were identified. The enablers include technological, conceptual and organisational elements.

Some of these enablers are already available for specific fields but need to be transferred to other sectors. Others still depend on major technological advancements or major conceptual development. In some cases such as "reconfigurable manufacturing systems" major research effort is already being under way often supported by European and national funding without particular focus on their function as UCIM enablers. Finally, some of the enablers are depending on societal change and the emergence of new lifestyles and attitudes.

The challenge for research and innovation policy aiming at underpinning desirable UCIM scenarios in a wide range of European manufacturing sectors will be to develop initiatives that align a number of these enablers to be used within UCIM scenarios thus not only advancing knowledge on the single elements but provide learning spaces for manufacturers and their customers on how to best benefit from UCIM. The policy recommendation report will give suggestions.

The original Metro map when further refined by the results of the second workshop appears like this:



A full detailed descrption of the elements summarised here can be found in the Roadmapping report Workpackage 3 Deliverable 6 which accompanies this Final Project Report

7 Policy Analysis

During the UCIM scenario workshops the project team designed various pathways for the involvement of users in different industries and shown some general industry wide characteristics for the adoption of UCIM scenarios. UCIM is relevant for a large number of industries ranging from low to high-tech sectors. Even though different scenarios and roadmaps were developed, all of them have a common feature; they require that technological, organisational and socio-economic development and transformations have to be developed. UCIM requires new technologies, business models and organisational structures along the entire value chain, and hence requires process, product and organisational innovations.

From the perspective of the policy makers, the main question is how one could influence and contribute to this transformation towards manufacturing systems accommodating user driven innovation. Research, innovation and technology (RTI) policy has a wide range of mechanisms and instruments to influence and steer this development.

During our roadmapping exercise, a set of enablers for four desirable UCIM scenarios were identified and their importance and time horizon to become effective have been assessed. These enablers have to be developed or occur so that specific scenarios can be achieved. These enablers serve as departure point for the policy analysis, too. The major question was to what extent can policy influence the development of these enablers.

The following instruments were considered:

- Direct R&D funding (promotion of individual and collaborative R&D projects and programmes, studies, etc.)
- R&D infrastructure (universities, labs, etc.)
- Technical infrastructure (Broadband, net, etc.)
- Awareness raising (information platforms, roadshows, awards, good practice collection etc.)
- Consulting and services (offering services by agencies, etc.)
- Network creation (cluster management, science-industry relations, conferences, Foresight, etc.)
- Education and Training (curricula, etc.)
- Standardisation and Norms (ISO, certificates, labels etc.)
- Intellectual Property Rights (patents)
- Public procurement

By constructing a matrix with the dimension of the enablers and the dimension of the policy instruments, the team set out a framework for developing concrete policy measures and suggestions for projects.

7.1 Policy synthesis matrix: UCIM Enablers and corresponding policy instruments

	Generic	**Generic**	**Generic**	**Generic**	**Generic**	**Generic**	**Generic**	**Generic**	**Generic**	**Generic**
Enablers	Enabler 1	Enabler 2	Enabler 3	Enabler 4	Enabler 5	Enabler 6	Enabler 7	Enabler 8	Enabler 9	Enabler 10
	Manufacturing systems	One-off Machinery	Finishing processes	Data flows	Customer interface	Smart networks	Open design	Logistics management	Quality management	Business models
Importance of the enabler	medium	medium	medium	medium	medium	medium	high	medium	medium	medium
Time Horizon of the enabler	Medium-term	Medium-term	Medium-term	Medium-term	Short-term	Short-term	Long-term	Medium-term	Medium-term	Medium-term
Funding of single R&D projects										
Funding of Cooperative R&D projects										
R&D infrastructure										
Technical infrastructure										
Information & Communication										
Consulting and services										
Network creation										
Education and Training										
Standardisation & Norms										
Intellectual Property Rights										
Public Procurement										

	Generic	**Generic**	**Generic**	**Generic**	**Generic**	**Generic**	**Furniture**	**Machine Tool**	**Machine Tool**	**Machine Tool**
	Enabler 11	Enabler 12	Enabler 13	Enabler 14	Enabler 15	Enabler 16	Enabler 17	Enabler 18	Enabler 19	Enabler 20
	Consumer attitudes	Staff skills	New materials research	Simultaneous product and process innovation	Concurrent engineering	Consumer and User research	Consumer-manufacturer interface for idea generation	Systems and sensors for Performance Monitoring	Modelling and Simulation	Guidance kits
Importance of the enabler	high	high	high	high	high	high	medium	high	High	medium
Time Horizon of the enabler	Long term	Long-term	Medium-term	Medium-term	Medium-term	Short term	Short term	Long-term	Long term	Short-term
Funding of single R&D projects										
Funding of Cooperative R&D projects										
R&D infrastructure										
Technical infrastructure										
Information & Communication										
Consulting and services										
Network creation										
Education and Training										
Standardisation & Norms										
Intellectual Property Rights										
Public Procurement										

The matrix shows that classical R&D funding plays a crucial role for nearly all enablers, although the focus has to be on collaborative R&D projects. However, considering the

importance of the enablers there is evidence that for crucial enablers such as new business models (enabler 10) or consumer attitudes (enabler 11) the scope for policy actions is limited, and must go beyond classical R&D promotion

7.2 Policy initiatives in the context of UCIM

This section serves to give an outline on policy initiatives in favour of user centred innovation approaches that are already in place. Such policies are situated within the wider framework of RTI (Research, Technology, and Innovation) policy measures.

In practice, policy initiatives combine some of these approaches. The first group of initiatives are often found to be part of larger R&D funding schemes such as the EU Framework programme. The other types of policies are often part of the wider framework of policy measures aiming at fostering demand for innovative products and services (demand oriented innovation policy measures). However, any demand oriented innovation policy measure will not automatically foster UCIM type of approaches. Tailored approaches are needed to foster the specific quality of user producer interaction.

The following are some relevant ongoing policy initiatives found which contain specific UCIM elements:

- Lead market policy
- Public procurement for innovation
- User producer dialogues within Foresight activities.

The team focused on European level initiatives but also some national ones.

7.2.1 Lead markets for UCIM

Under the Finish presidency in 2006 an independent expert group (Aho report) investigating possible measures to reinforce EU research and innovation performance strongly pointed to "markets for innovation as the central driver to bring about R&D and innovation to create the value that can then support our quality of life". As a central part of their recommendations, the expert group suggested a bundle of measures to create European "Lead markets".

Within the envisaged European lead markets, the flow of knowledge between different innovation actors will be greatly enhanced. In particular, there will be strong linkages between lead customers and providers of innovative solutions resulting in a high responsiveness to newly emerging demands and awareness of future challenges. Accordingly, the European lead markets form a favourable environment for any type of user driven innovation to be taken up by companies.

The Lead market initiative is based on the recognition of customers as the major driver of innovation. It is acknowledged that customers and in particular lead customers are not only passive buyers of new products but actively express their demand and engage with companies into a learning process in order to define innovative solutions best serving their needs. This joint learning process is also a crucial element of some of the forms of user driven innovation that were identified in the UCIM project, in particular cluster A – joint invention. The UCIM findings showed that to be able to engage into a fruitful dialogue both customers and suppliers need specific new competencies.

The Lead market initiative is based on the recognition of customers as the major driver of innovation. It is acknowledged that customers and in particular lead customers are not only passive buyers of new products but actively express their demand and engage with companies into a learning process in order to define innovative solutions best serving their needs. This joint learning process is also a crucial element of some of the forms of user driven innovation that were identified in the UCIM project, in particular the Co-Innovation scenario. The UCIM findings showed that to be able to engage into a fruitful dialogue both customers and suppliers need specific new competencies.

Supplier companies will be enabled to engage in a dialogue with customers and thereby better understand customer needs and to benefit from user driven innovation of the Co-Innovation type. Some suppliers might even be inspired to develop platforms for users to innovate to better interact with the "intelligent customer" in public procurement.

7.2.2 Public procurement for Innovation

In September 2005, an expert group explored options for good practice and policy in "procurement for innovation" for the European Commission.
The European Commission followed up the recommendations of this group with several activities such as:

- Development of an Handbook on research and innovation public procurement (under way)
- Investigating possibilities for stimulating innovation through reference to standards
- Supporting the forming of cross border network of procurement authorities (INNO-Net)

Moreover, within the lead market initiative (see above) concrete measures for using public procurement for innovation within the lead market areas are foreseen:

- Coordination and bundling of innovative procurement initiatives
- pre-competitive public procurement initiatives

From the point of view of UCIM the initiatives toward public procurement for innovation are of high relevance as they offer potential to strengthen the capability of companies to engage into customer-supplier dialogue, which is a critical enabler for the uptake of user innovation.

7.2.3 Foresight for UCIM

A central characteristic of user driven innovation is the continuous dialogue between customers and suppliers of product service systems on emerging demands and possible solutions to fulfil it. While public procurement can help to strengthen the ability of companies to engage into this dialogue, other policies are aiming at establishing such a dialogue among the relevant actors within a certain innovation arena. This kind of policy that is primarily aiming to enhance the capability of an innovation system for change by establishing linkages and knowledge flows as well as stimulate joint learning and experimenting has been discussed as "systemic innovation policy instruments". Of particular relevance for enabling UCIM type of approaches appear such systemic instruments that initiate future oriented dialogue among users and providers of innovation such as certain Foresight processes.

Foresight initiatives contribute to enabling in particular UCIM scenarios such as CoInnovation, where companies systematically learn from lead customers but also may serve to raise awareness of the existence of innovating users communities.

7.2.4 National initiatives

Of particular interest is the activity in Denmark. The Danish Government's 2005 strategy for the next 4 years states that, “strengthening user-driven innovation" is a national priority. In response, a group of researchers from Copenhagen Business School in Denmark and MIT Sloan School of Management in the US – supported from Danish Ministry of Economic and Business Affairs – now establish the Danish User-Centred Innovation Lab at Copenhagen Business School. The goal of the Danish User-Centred Innovation Lab is to help bring Danish firms to the world forefront with respect to the profitable exploitation of leading-edge user-centred methods for product and service development.

7.3 Implications and suggestions for DG Research

The UCIM project set out to advise policy makers how to support European manufacturing industry in meeting the challenges of user driven innovation. In particular, UCIM aimed to propose EU level research underpinning UCIM concepts in favour of sustainable and competitive manufacturing in Europe. Based on the results outlined above that capture the range of required policy measures and the results of discussions within the Expert Workshops the project team propose **five UCIM support activity areas** which could be adopted or co-ordinated by DG Research (see chapter 7.3.1.). The activity areas are thematic fields where research and other complementing measures could focus on, in order to support user centred innovation in European industry. In each area, a number of measures to foster technological and organisational innovations towards UCIM as discussed above are synthesised. In addition, we recommend **eight action lines** to be adopted in support to user innovation (see chapter 7.3.2).

7.3.1 UCIM support activity areas

Manufacturing system for UCIM

Measures: Direct funding of research and technology development, R&D infrastructure

User interface for UCIM

Measures: Direct funding of research and technology development, support of adequate R&D infrastructure, awareness raising, education and training, public procurement with government acting as user/innovator Research should include real life experiments with different groups of customers/users. Attitudes should be monitored by social science research.

Adaptive product and service design

Measures: Direct funding of research and technology development, direct funding of development of concepts and business models, R&D infrastructure, awareness raising, education and training, standards, IPR to facilitate user product modification

Smart and open networked production

Measures: Networking/Foresight including users and manufacturers, consulting services**,** direct funding of development of organisational competencies, standards, direct funding of research and technology development for ICT

User attitudes

To better understand user attitudes towards active involvement into innovation processes we recommend interdisciplinary in-depth research taking into account a wide range of different innovation settings and cultural contexts. This type of research should also be integrated into some of the technical development projects.

7.3.2 UCIM actions

Across the areas for support outlined above we recommend the following generic actions to be taken in support of user centred innovation approaches.

1. **Real life learning for UCIM**
   Establishment of attractive UCIM pilots to raise awareness among users and create learning spaces for companies and other actors
2. **Orienting research towards UCIM**
   Integration of users and user research into publicly funded R&D projects

3. **Make the case for UCIM**
   Collection and documentation of experience with UCIM applications establishment and promotion of success stories best practice and transfer of concepts between sectors
4. **Open up knowledge for UCIM**
   Fostering of debate on IPR revisions in favour of user innovation
5. **Align actors for UCIM**
   Targeted set up of user-producer-dialogues in dedicated innovation areas through local clustering and in particular Foresight initiatives. This could be aligned to Lead market initiatives.
6. **Purchasing for UCIM**
   Public procurement with a view to promoting user involvement.
7. **Tailoring UCIM**
   Develop tailored UCIM strategies for companies with the aid of innovation researchers taking the Danish experience as a model
8. **Find out more about UCIM**
   Launching of additional socio-economic research to explore in more detail the nature of change towards user centred innovation for various sectors, products cultural contexts as well as its social and economic impacts and the emerging requirements for innovation policy.

7.3.3 Alignment of efforts for transition

The UCIM project has highlighted that the uptake of user driven innovation by European manufacturing industries requires concerted technological and organisational innovations. This will require a complex process of transition affecting not only companies themselves but the whole system of production and consumption. It is obvious that this complex process cannot be triggered by research policy alone, but requires a concerted proceeding between policy actors concerned with issues such as innovation, industry, regional development, consumer protection, education, and information society. Therefore, most of the recommendations discussed in this report encompass elements that can only be realised by co-operation and co-ordination between DG RTD and other DGs.

The concept of strategic niche management offers a useful approach for managing change within such a complex transformation of the industry as triggered by UCIM. The concept involves the creation of a protected space (the "niche") where innovation actors can learn about a new solution not only with respect to new technological developments but also patterns of use and skill requirements.
Finally, more research and Foresight is needed to understand the nature of the transition process and in particular the impacts on sustainability that could not be fully covered within this project.

A full description of the policy analysis and recommendations can be found in the UCIM Policy Analysis Report Work Package 4 deliverable 7, which accompanies this Final Project Report.

8 Validation Process:

In line with the projet proposal a Validation Workshop was organised with external experts and the project team. The workshop was held in Vienna on April 17th 2007. The purpose of the workshop was to:

1. Discuss and assess the different industrial scenarios ("shops") with the expert group with respect to competitiveness and sustainability.
2. Discuss, elaborate and prioritise the different enablers with the expert group.
3. Develop for the most critical enablers policy measures and R&D projects to ensure their widespread diffusion.

8.1 Workshop Results

8.1.1 Assessment of scenarios

Six industrial UCIM scenarios were assessed. For each scenario strength and weaknesses regarding competitiveness and sustainability as well as potential for transfer to other sectors were identified with the following results:

Own-sweet-home® is based on a regional cluster of existing furniture producers using a very flexible manufacturing system and collaborating in a close network to offer a complete range of models that the customers can adapt and customize to meet their needs and tastes (cf. figure 3).

Rent-a-piece is a chain of leasing points renting furniture for short-medium periods of time. They ensure regular maintenance and light renewal of products along leasing as well as complete re-fabrication in the regional production plants of the brand.

MTsystem Inc. is a machine tools producer working very closely to its clients companies organizing frequent collaborative workshop with them, sharing their virtual modelling system to customize flexible machine tools solutions and also to capture permanently clients' needs and orient their machine tools development strategy.

MTservices Ltd. is an intermediate agency set up by a group of different machine tools producers to organize leasing services on the basis of the different machine tools they produced. Responding to the needs of a large pool of clients they play also the role of an observatory following evolution of the demand of user companies to orient new product development of each machine tools producer.

Ferramo are high fashion shoe stores that offers customisation services for every collection: all models are available in standard sizes but can also be adapted to fit to physiological feet shapes of each specific customer. They just need to provide their previously made measurement on their personal data card and a customized pair of shoes is produced for them in a week time

Opti-options are an optician's shops in which you can personalize existing models on-the-spot to your own taste. From a large choice of sample models displayed, simple changes of features like colour, finish or certain removable pieces of the model can be customized on the spot in a back office workshop.

HandymanDepot stores have 3D printing corners that work as a universal on-place object creator and producer, in which you can download the blueprint of an object from internet and have it produced on the spot. Spare parts are often available to customers in that way providing access to on-line data bank of companies that in return do not have to manage stocks.

For each scenario the group set the Pros, Cons/Challenges and the possibilities for transfer to other sectors.

8.1.2 Assessment of enablers

The following ranking of enablers resulted from the voting (number of votes):

- New business models (12)
- User attitudes (10)
- User creation interface (6)
- Managing data flows (5)
- Staff skills (5)
- Adaptive product design (5)
- Usage monitoring systems (4)
- Smart logistics management (4)
- Smart networks (3)
- Customer guidance interface (2)
- High mix – low volume manufacturing systems (2)
- Virtual simulation (2)
- One-off manufacturing (1)

The following arguments were put forward (summary):

- **New business models**: "is the prerequisite for all UCIM concepts"; "have to cope with retailers in many applications, e.g. furniture"; "requires collaboration and communication"; "is the only way to differentiate other than from cost competition"; "is the prerequisite for profiting from technical innovations"
- **User attitudes**: "difficulty of shifting the ways of market/user behaviour towards what they qualify as needs"; "problematic if ideas of users are changing too quickly, which can hardly be influenced"; "limitation of personalisation: many people want to buy brands/designs instead of personalized goods"; "industry must better understand these attitudes"; "what happen with the rather passive users who are not convinced that an active attitude is useful?"
- **Customer creation interface**: "is a combination between a technical interface and a personal support", " the speed and accuracy of customer information defines the concept owner and the one who manages this best is the winner"; "will also influence user attitudes"; "can be mastered in the B2C case for not too complex products"
- **Managing data flows**: "Mastering data flows requires standards, which must often been developed between competitors"
- **Staff skills**: "unlocks all the other enablers"; "is essential to master the necessary organisational changes to implement UCIM", "changing staff attitudes to share information with colleagues and customers takes trust and skills"
- **Adaptive product design**: "is the fundament to integrate the user in the innovation process"; "often possible only if all participants will co-operate"

- **Usage monitoring systems**: "monitoring deals with both technology and user attitudes, also on the organisational level, which should be solved simultaneously"; "requires the identification of critical control points"
- **Smart logistics management**: "is the backbone for UCIM concepts and an increasingly important cost factor for production"

8.1.3 Developing policy measures

The most important enablers were clustered into thematically related groups. Participants discussed policy measures and R&D needs for each group of enablers with the following results:

Group 1 **Customer creation interface, Adaptive product design, Usage monitoring systems,**

Group 2 **Smart networks, Smart logistics management, Data flow management**

Group 3 **Business models, User attitudes, Staff skills**

8.2 Conclusion

The UCIM results were largely confirmed by the workshop participants. Potential to further develop the concepts outlined by UCIM was identified. A number of research needs and supportive measures needed to underpin the UCIM enablers were highlighted. In some aspects cautioning remarks were made and substantial challenges highlighted.
The full details of the Validation Process are included in the Validation Report Work Package 5 Deliverable 8 which accompanies this Final Project report

9 Dissemination: Web Platform

To support dissemination UCIM developed an open web platform based on a blog structure and hosted on SDS servers. This web space has a blog-like structure allowing the posting of the progress of the research as articles with text, image and animations. Each article has a "comment" button that allows external visitors to post their comments and thus interact with the research consortium.

This platform was set at the beginning of the research and progressively updated. It was used during the SSA to support the various activities of the project and in particular:

_sharing material and documents within the UCIM consortium;
_supporting interviews with experts and providing them temporary access to visual support while answering questions on the phone;
_receiving feedback form invited external experts logging with their password, browsing the content and leaving comments;
_stimulating invited experts before the different workshops organized during the project;

Particular attention was paid during the UCIM project to provide visual material in order both to trigger discussion with experts and to stimulate their participation to the different UCIM activities. In particular:

_initial story-script and sector scenarios in furniture and machine tools were visualised through series of drawing on still pictures featuring a new situation in a given context;
_scenarios were illustrated with advertisement-like visuals simulating the communication of situations imagined in UCIM;
_roadmaps showing the various enablers towards the achievement of each UCIM scenarios were visualized graphically;
_an interactive trailer was developed to present a general scenario showing an overall picture of a more UCIM-like manufacturing in Europe. The results of the in-depth investigation in Furniture and Machine Tools have been extrapolated to other sectors. The metaphor to set the vision is a series of places such as shops, offices, production ateliers, companies workshop places… a sort of "UCIM-Street" showing extensions of UCIM more convincing scenarios in other sectors. Concretely the UCIM Street shows different situations of "diffused UCIM" in life.

All the material listed here has been organized on the UCIM web-platform in order to make it accessible as a digital magazine and exchange place for social innovation and micro-scenarios.

As requested by the Commission, most of the platform was protected by a password. Public part were used temporary to facilitate access of external experts during interviews.

The dissemination was supported during the SSA and can be continued if the opening of the access is decided. The web space where the UCIM results are posted will then be accessible to external visitors that in return will be able post comments on it.

It is intended that the platform can be visited by more and more experts, first invited and progressively by spontaneous visitors interested in the subject of UCIM. This process is intended to start an open web platform where exchanges take place beyond the interaction triggered by the consortium.

The full description and utility of the UCIM Web site can be found in the Work Package 6 Deliverable 9, which accompanies this Final Project Report.
The web address is: http://www.sustainable-everyday.net/UCIM/UCIM_site/UCIM_HOME.html
Login: User Name: ucimsite
Password: ucimpass