EUROPEAN VIRTUAL ENGINEERING NETWORK

EVEN

QUESTIONNAIRE FOR EUROPEAN COMPANIES

IDENTIFICATION OF DEMAND FOR ENGINEERING TECHNOLOGIES AND TOOLS SUPPORTIG THE PRODUCT DEVELOPMENT PROCESS (PDP)

This questionnaire is part of **EVEN project** (European Virtual Engineering Network), funded by the European Commission. The aim of this project is to create a Virtual Institute at first between 13 partners from 11 european countries, that will help European companies, mainly SMEs, to improve and develop their product development processes offering services related to the use of engineering technologies and tools.

We are sur that the services of the EVEN Institute will help you **to improve your Product Development Process**. For this purpose, we would like to know your opinion and identify your needs related to the product development process of your company.

We would greatly appreciate you taking the time to complete and return this questionnaire by e-mail of fax, before June 14th to the following address:

ORGANISATION:

PERSON:

TELEPHONE:

FAX:

All the information included in this questionnaire will be treated **confidentiality**, and it will only be used to carry out an added analysis of the whole group of answers.

1. CONTACT DATA

NAME:	.....
POSITION:	.....
COMPANY:	.....
POSTAL ADDRESS:	.....
	.....
TEL:	.....
FAX:	.....
E-MAIL:	.....
WEB SITE:	.....

2. COMPANY GENERAL DATA

TURNOVER (Mε)				EMPLOYEES			
☐	< 7	☐	41 – 60	☐	0-49	☐	500-1000
☐	7 – 20	☐	MÁS DE 60	☐	50-249	☐	MÁS DE 1000
☐	2140			☐	250-499		

3. TYPE OF ACTIVITY

Please indicate the most relevant sectors (no more than three) where your main activities are focused on, identifying the role of your company into the value chain of the sectors selected.

SECTOR	FINAL MANUFACTURER	SUPPLIER
AGRIFOOD	☐	☐
WATER AND ENERGY	☐	☐
PHARMACY AND CHEMICAL	☐	☐
PAPER, CARDBOARD AND GRAPHIC ARTS	☐	☐
RUBBER AND PLASTIC PRODUCTS	☐	☐
TEXTILE, FOOTWEAR AND LEATHER PRODUCTS	☐	☐
FURNITURE AND WOOD PRODUCTS	☐	☐
METAL PRODUCT MANUFACTURING	☐	☐
MACHINE-TOOLS	☐	☐
MECANIC MACHINERY AND EQUIPMENT	☐	☐
ELECTRICAL EQUIPMENT	☐	☐
ELECTRONICS, COMPUTING AND TELECOMMUNICATIONS	☐	☐
AUTOMOTIVE	☐	☐
AERONAUTICS/AEROSPACE	☐	☐
SHIPBUILDING	☐	☐
OTHER TRANSPORT	☐	☐
CONSTRUCTION	☐	☐
SERVICES	☐	☐
RECYCLING	☐	☐

OTHERS (please, specify):	☐	☐
.....	☐	☐

ACTIVITY AND PRODUCTS

Please define briefly your main activity and also your main products.

Activity:.....

.....

Main products:

- .....
- .....
- .....

4. USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTs)

The objective of this question is to assess the use level of ICTs in your company for the development of activities that require communication with external organisations. For this purpose, please tick the appropiate box (1=Never; 2=Seldom; 3=Sometimes; 4=Often; 5= Daily)

ICTs USE	1	2	3	4	5
E-MAIL	☐	☐	☐	☐	☐
INTERNET	☐	☐	☐	☐	☐
EDI (Electronic Data Interchange)	☐	☐	☐	☐	☐
E-COMMERCE	☐	☐	☐	☐	☐

Please indicate which are the main systems or tools used in your company for the communication and information exchange with external organisations (suppliers, customers, etc.).

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5. PRODUCT DEVELOPMENT PROCESS (PDP)

Does your company carry out any product development activity?	**Yes** ☐	**No** ☐

If yes, please indicate the stages of the Product Development Process (PDP) in which your company develops some activity.

PDP STAGES	
PRODUCT STRATEGY	☐
IDEA GENERATION	☐
FEASIBILITY ANALYSIS	☐
PRODUCT REQUIREMENTS	☐
PRODUCT/PROCESS DESIGN	☐
VALIDATION AND DEMONSTRATION	☐
PRODUCT LAUNCH	☐

6. TECHNOLOGIES AND TOOLS USED IN YOUR COMPANY

Please assess for the following technologies and tools supporting the Product Development Process (PDP) your interest and current use (Asses from 1 to 5 corresponding: 1=nothing/never and 5=much/always).

Note: At the end of the questionnaire (see Annex I) a brief definition of each of the following technologies and tools is included.

	INTEREST					USE				
	1	2	3	4	5	1	2	3	4	5
ENVIRONMENT WATCH AND STRATEGY										
Product Portfolio Management	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Technology watch and Benchmarking	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Idea Generation	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Market Analysis	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
PRODUCT REQUIREMENTS										
Web based configuration and specification	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Quality Function Deployment (QFD)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Conceptual Design	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Functional Analysis	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Value Analysis	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Optimisation Techniques	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
PRODUCT/PROCESS DESIGN										
CAx (CAD, CAE, CAM,...)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Feature Based Modelling	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Simulation	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Failure Mode and Effects Analysis (FMEA)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Design for Manufacturing, Assembly, etc. (DFx)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Finite Elements	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Complex Calculation	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Rapid Prototyping	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Virtual Reality	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Digital Mockup	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
QUALITY										
Tolerancing Analysis	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Taguchi – DOE	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Quality Management	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Knowledge Management in PDP	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

PRODUCT DEVELOPMENT PROCESS(PDP) SUPPORT										
Stage Gate and Project Management	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Engineering Data Management (EDM)/Product Data Management (PDM)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Support to Collaborative Design (Groupware/Workflow)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
OTHERS (please, specify):										
.....	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
.....	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

7. COLLABORATIONS AND EXTERNAL SUPPORT WITHIN THE PDP

Does your company collaborate or receive support from external organisations in the Product Development Process (PDP) activities?	**Yes** ☐	**No** ☐

If yes, please indicate what kind of organisations and quantify the collaboration/support level (1=Never; 2=Seldom; 3=Sometimes; 4=Often; 5=Usual collaborator)

TYPE OF ORGANISATION	1	2	3	4	5
SUPPLIERS AND CUSTOMERS	☐	☐	☐	☐	☐
OTHER COMPANIES (for example competitors)	☐	☐	☐	☐	☐
TECHNOLOGICAL CENTRES	☐	☐	☐	☐	☐
UNIVERSITIES	☐	☐	☐	☐	☐
CONSULTANCIES	☐	☐	☐	☐	☐
ENGINEERING COMPANIES	☐	☐	☐	☐	☐
Others (please, specify):	☐	☐	☐	☐	☐

Please mark the main obstacles that your company finds when you are going to collaborate or receive support from other organisations.

CONFIDENTIALITY	☐
LACK OF ECONOMIC RESOURCES	☐
LACK OF KNOWLEDGE OF THE SERVICES OFFER	☐
NOT NEEDED	☐
Other (please specify):	☐

8. PRODUCT DEVELOPMENT PROCESS (PDP) ACTIVITIES

Please identify in which stages of the PDP could your company need support from external organisations, assessing this need (Assess from 1 to 5, corresponding: 1=Not needed, 5=Absolutely necessary)

PDP STAGES	EXTERNAL SUPPORT				
	1	2	3	4	5
PRODUCT STRATEGY	☐	☐	☐	☐	☐
IDEA GENERATION	☐	☐	☐	☐	☐
FEASIBILITY ANALYSIS	☐	☐	☐	☐	☐
PRODUCT REQUIREMENTS	☐	☐	☐	☐	☐
PRODUCT/PROCESS DESIGN	☐	☐	☐	☐	☐
VALIDATION AND DEMONSTRATION	☐	☐	☐	☐	☐
PRODUCT LAUNCH	☐	☐	☐	☐	☐

PROBLEMS AND NEEDS INTO THE PDP

Please describe which are the main problems that your company finds in the PDP activities that carries out and that could be solved with external support.

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- .....
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- .....
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9. SERVICES SUPPORTING THE PRODUCT DEVELOPMENT PROCESS (PDP)

Asses the use level for your company of the following types of services supporting the PDP (Assess from 1 to 5 corresponding: 1=Not necessary; 5=Absolutely necessary).

Nota: A brief explanation of each service is included at the end of the questionnaire.

SERVICES	1	2	3	4	5
COLLABORATION IN SPECIFIC PROJECTS OF PRODUCT DEVELOPMENT IN YOUR COMPANY	☐	☐	☐	☐	☐
TESTS AND SIMULATION	☐	☐	☐	☐	☐
SUPPORT TO PDP TOOLS IMPLEMENTATION	☐	☐	☐	☐	☐
TRAINING AND DISSEMINATION IN TECHNOLOGIES AND TOOLS SUPPORTING THE PDP	☐	☐	☐	☐	☐
CONSULTING DIRECTED TO THE IMPROVEMENT OF THE STRATEGY AND NEW PRODUCT DEVELOPMENT PROCESS	☐	☐	☐	☐	☐
RESEARCH AND DEVELOPMENT IN TECHNOLOGIES AND TOOLS SUPPORTING THE PDP	☐	☐	☐	☐	☐
Others (please specify):	☐	☐	☐	☐	☐

10. DECISION CRITERIA TO USE EXTERNAL SUPPORT TO THE PDP

Please indicate and assess the criteria that your company would consider to decide the use of external services supporting the PDP.

SERVICES	Low	Medium	High
EXPERT KNOWLEDGE IN TOOLS AND TECHNIQUES SUPPORTING THE PDP	☐	☐	☐
LANGUAGE (Your mother tongue)	☐	☐	☐
ADVANCED EQUIPMENT AVAILABILITY	☐	☐	☐
PROXIMITY (Contact points in your own country)	☐	☐	☐
CONFIDENTIALITY	☐	☐	☐
Others (please specify).	☐	☐	☐
.....			

11. OTHER COMMENTS

Please add any other comment that you consider interesting with reference to your needs in the Product Development Process (PDP).

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12. ANNEX I: Technologies and tools supporting the Product Development Process (PDP)

ENVIRONMENT WATCH AND STRATEGY	
Product Portfolio Management	Techniques and tools to manage the strategic dimension of the product development activities within a company. New product projects evaluation and selection, fit into the business strategy, etc.
Technology Watch And Benchmarking	Technology watch implies activities oriented to search and identify technological trends and specific technologies relevant for the future of the company. Benchmarking: tools to measure and improve processes, products or services in an organisation, by comparing them to the best processes, products and services that may be found.
Idea Generation	Techniques and tools aimed at generating new products ideas systematically
Market Analysis	Techniques and tools to have access to and integrate customer opinions within the development process: conjoint analysis, focus groups, etc
PRODUCT REQUIREMENTS	
Web Based Configuration And Specification	Utilisation of Internet and other advanced IT tools for involving the customer in the development of the product specifications
QFD	Quality Function Deployment. Structured process that provides a mean for identifying the requirements of the client and translating them into product characteristics
Conceptual Design	Techniques and tools to support conceptual design at early stages of the product development process
Functional Analysis	Tool used to determine what the system/product needs to do. It includes consideration of specific design and technical approaches needed to fulfil the functional requirements of the product/system
Value Analysis	Method aimed at reducing the direct cost of a product by identifying and eliminating unnecessary functions, and examining the alternative means to achieve the selected product functions
Optimisation Techniques	Tools that help the designer to search and identify best candidate from a set of alternatives without the need of enumerating and evaluating explicitly all possible cases
PRODUCT/PROCESS DESIGN	
Cax (CAD, CAM, CAE, CAPE)	Computer Aided Design, Manufacturing, Engineering, etc.
Feature Based Modeling	Advanced function in CAD tools that includes not only geometric information but also information of the features
Simulation	Different types of simulations like simulation of manufacturing processes (casting, metal forming, etc), that allow to obtain optimised designs, reducing design time and costs (the simulations can eliminate costly trials during PDP), simulation of product functions, etc.
Fmea	Failure Mode and Effects Analysis: engineering quality method that helps to identify and count weak points in the early conception phase of products and processes.
Dfma	Design for Manufacturing and Assembly. These techniques take into consideration the methods of manufacture and assembly of a product during the design process
Finite Elements	Analysis to predict the effort and deformation internally supported by a piece subjected to different external conditions
Complex Calculation	Design calculations that need the support of High Performance Computers, parallel processing, etc
Rp – Rapid Prototyping	Term that cover a range of techniques which convert a 3D CAD model of an object into a physical model. Complex shapes, difficult and costly with traditional CNC prototyping, can produced in one operation with these techniques. Includes concept modelling (3D printers) as the cheapest solution.
Virtual Reality	3D visualisation of products or processes. It may be used for design or demonstration purposes
Digital Mockup	Computer-based description of a product that is used throughout the entire development process as a basis for making decisions about the development of the product. DMU is concentrated in three areas: description of the structure of a product, visualisation of a product in a three-dimensional geometry system, performance of simulations on the basis of geometric information.

QUALITY	
Tolerancing Analysis	Tolerancing design and analysis is the process of selecting correct tolerances (dimensional and geometrical) of a designed element in order to avoid future manufacturing and assembly problems
Taguchi – Doe	Statistical techniques used to improve the quality of products and process designs, study the effects of multiple factors (i.e.- variables, parameters, ingredients, etc.) on the performance, and solve production problems by objectively laying out the research experiments.
Quality Management	Application of quality management techniques and tools (TQM, Six Sigma, etc) within the product development process
Knowledge Management In Pdp	Application of knowledge management methodologies, techniques or tools within the PDP.
PRODUCT DEVELOPMENT PROCESS (PDP) SUPPORT	
Stage Gate And Project Management	Techniques and tools to manage product development projects. Stage gate approach based on go/kill decision points between critical phases of the development process
EDM/PDM	Engineering Data Management/Product Data Management. Systems to handle data of an evolving product description throughout the technical data flow, from design to commercialisation.
Support To Collaborative Design (Groupware/Workflow)	ITC platforms that facilitate product development activities in distributed environments (partners or team members in different locations)

13. ANNEX II: Services supporting the Product Development Process (PDP)

Collaboration in specific projects of product development in your company	Develop any type of components or products for industrial companies or collaborate with them in this activity by using technologies and techniques supporting the PDP
Tests and simulation	Carry out product tests or simulations for companies
Support to PDP tools implementation	Help companies to implement specific technologies or techniques in their own product development processes to
Training and dissemination in technologies and tools supPorting the PDP	Training courses and dissemination activities (conferences, seminars, etc) on subjects related to product development process improvement and the tools and techniques useful to do so
Consulting directed to the improvement of the strategy and new product development process	Consulting to companies on how to improve their overall product development process. It can include an audit of the PDP, recommendations and action plans
Research and development in technologies and tools supporting the PDP	Research activities aimed at increasing knowledge (with no direct commercial purpose or application) in any of the technologies and techniques supporting the PDP and development of technologies and techniques with application within the PDP. It includes software development.

THANK YOU FOR YOUR CONTRIBUTION