

MASTER

ICT for supporting collaboration in the one-of-a-kind industry : "one step closer to realising the virtual enterprise"

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Award date:
2001

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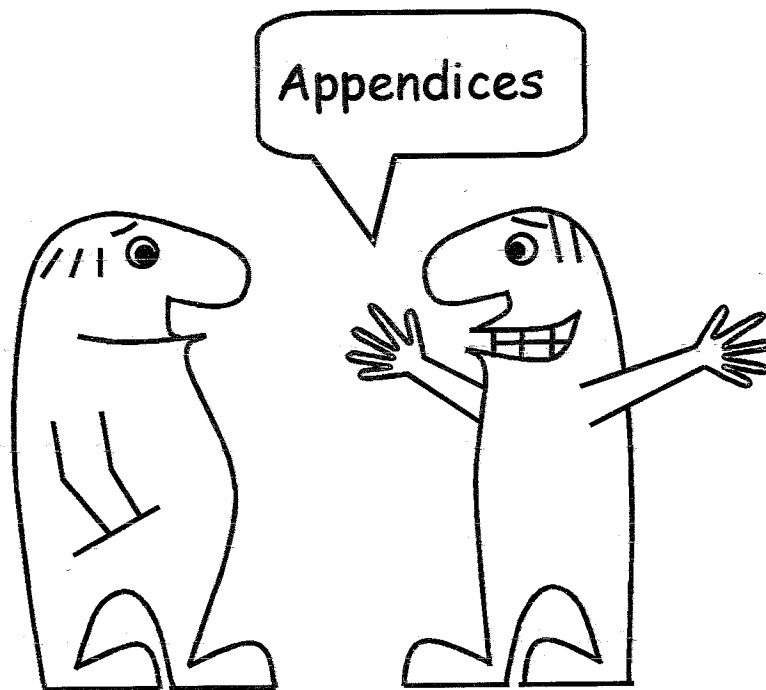
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ICT for supporting collaboration in the one-of-a-kind industry

“One step closer to realising the Virtual Enterprise”



**NIET
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Appendix A: 'Baan's organisation charts'

Invensys

Invensys plc (see figure 1) is a global electronics and engineering company created by the merger of BTR plc and Siebe plc on the 4th of February 1999. In 1999/2000 the revenue was \$11 Bln., and \$1,5 Bln operation profit was made (14% return on sales).

Invensys plc is a global leader (situated in more than 80 countries) in the automation and controls industry, providing innovative solutions and services to customers, with an increasing focus on software, networks and electronics.

With over 90,000 employees, the company's products and services range from sophisticated control systems for automating industrial plants and controlling the environments of buildings, to electronic devices and controls found in residential buildings and light commercial applications, plus complete power systems to protect the world's telecommunications and information technology networks.

With its head office in London, England, it operates in all regions of the world through four business divisions – Automation Systems, Control Systems, Power Systems and Software Systems.

Increasingly, these divisions are working in concert to offer our customers total, integrated solutions.

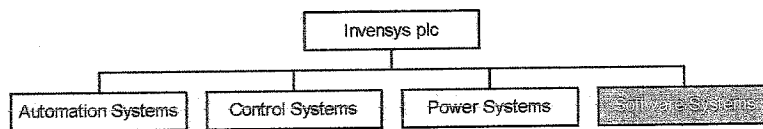


Figure 1 Organisation chart Invensys plc

Software Systems

The Software Systems Division (see figure 2) focuses on delivering software solutions to businesses including everything from rail to chemical, oil, gas, pulp, paper, utilities, petrochemical, food, beverage, dairy and pharmaceutical. It is a global leader in software and information systems, through its ability to provide advanced performance-based contracting, turnkey solutions and complete lifetime services.

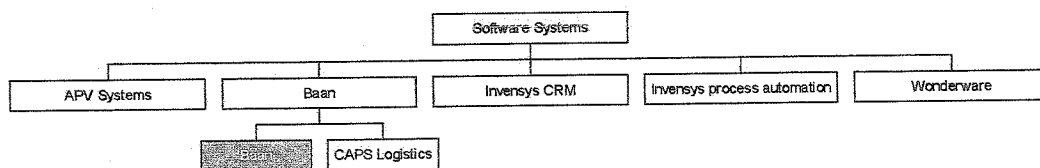


Figure 2 Organisation chart Software Systems

Baan

Baan (see figure 3) is part of Invensys plc's \$2.5 billion turnover Invensys Software Systems (ISS) Division – a global leader in the provision of manufacturing solutions – having been acquired in September 2000.

Baan belongs to the standard software industry, which supports the operational processes of engineering and manufacturing companies. The company's inter-enterprise ERP, Supply Chain Management, Customer Relationship Management and E-business solutions are deployed at more than 15,000 customer sites worldwide, helping customers to drive strategic business growth, improve business processes, reduce operating complexity, and increase corporate flexibility.

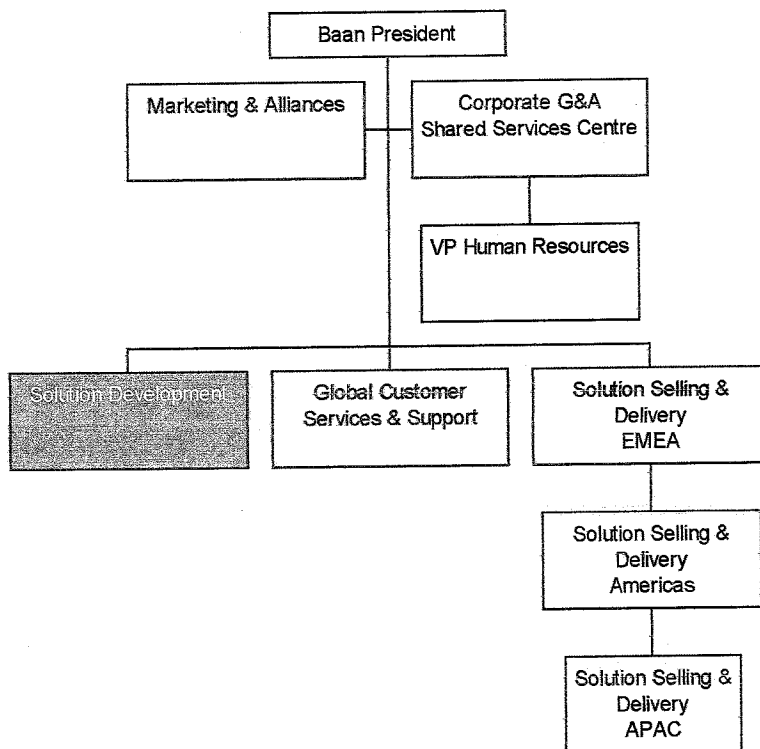


Figure 3 Organisation chart Baan

Baan Development

Baan Development is product line oriented (see figure 4). The following product lines / initiatives will be managed as separate (incubator) initiatives within ISS, and therefore will not be part of the Baan Development organisation:

- BaanFOS (Front Office Solution)
- CAPS Logistics
- CAF (Collaborative Application Framework)
- Nucleus

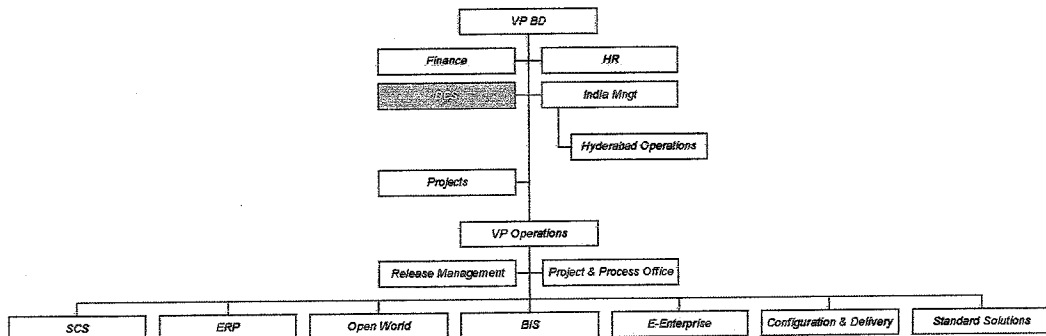


Figure 4 Organisation chart Baan Development

Baan DCS (Development Consulting Services)

Although Baan makes standard software, sometimes solutions have to be customised for important customers. This customisation is taken care of by Baan DCS (see figure 5). This assignment takes place at DCS Research, a small department that functions as a gate to the environment. DCS Research registers what happens in Baan's market and evaluates opportunities for Baan, sometimes resulting in projects with other companies 'sponsored' by the European Union.

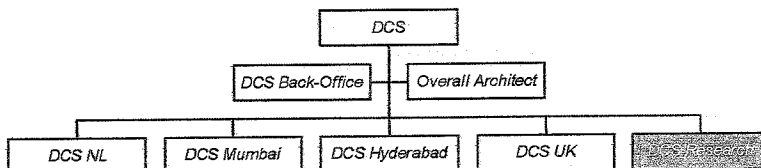


Figure 5 Organisation chart Baan DCS

Appendix B: 'Baan's competitors'

Table 1 shows the total revenue and net income (x 1000 US\$) of Baan and its closest competitors. [NASDAQ]

Table 1 Baan's competitors

Company	Total revenue	Net income	Date
SAP	5,881,202	595,504	12/31/2000
Oracle	10,130,128	6,296,803	05/31/2000
PeopleSoft	1,736,473	145,691	12/31/2000
J.D. Edwards	1,001,065	(15,422)	10/31/2000
Manugistics	267,964	(28,078)	02/28/2001
i2	1,126,325	(1,752,013)	12/31/2000
Ariba	279,039	(792,775)	12/31/2000
Baan	619,143	(309,579)	12/31/1999

Founded in 1972, SAP is the recognised leader in providing inter-enterprise software, and the world's third-largest independent software supplier overall.

It should be noted that Oracle's primary products are database management systems, in a comparison of these companies based on the numbers in the table above this should be taken into account. Furthermore Oracle designs, develops, markets and supports computer software products including network products, applications development productivity tools and end-user applications, enabling the ability to retrieve, manipulate and control data stored on multiple computers, develop web-based client server applications, support operational requirements of on-line processing, decision support and data warehouse environments for high systems availability and performance, perform rapid querying and reporting, and multidimensional analysis of data; and offers wide range of support services, including on-site or telephonic access to support personnel as well as software updates, and application consulting and training in the implementation of its' products.

PeopleSoft develops, markets and supports complete suite of enterprise solutions for finance, materials management, distribution, supply chain planning, manufacturing, and human resources, and industry-specific enterprise solutions to customers in select markets, including communications, financial services, healthcare, manufacturing, higher education, public sector, services, transportation, U.S. federal government, and utilities world-wide.

J.D. Edwards develops, markets and supports highly functional enterprise resource planning software solutions which operate on multiple computing platforms and are designed to accelerate customers' time to benefit, lower customers' cost of ownership, and reduce information systems risks arising from changes in technology and business practices.

Manugistics develops, markets and supports line of operational planning and decision-making software products and services for supply chain management which is the process from raw materials procurement, through manufacturing and distribution to delivery of finished goods.

i2 develops and markets supply chain management software, used in planning and scheduling of manufacturing and related logistics.

Finally, Ariba provides intranet and internet-based business-to-business electronic commerce solutions for operating resources.

Appendix C: 'UML'

The Unified Modeling Language (UML) is the successor to the wave of object-oriented analysis and design methods that appeared in the late '80s and early '90s. It most directly unifies the methods of Booch, Rumbaugh, and Jacobson, but its reach is wider than that. The UML went through a standardisation process with the OMG (Object Management Group) and is now an OMG standard.

The UML is called a modeling language, not a method. Most methods consist, at least in principle, of both a modeling language and a process. The modeling language is the (mainly graphical) notation that methods use to express designs. The process is their advice on what steps to take in doing a design. [Fowler, 2000]

In terms of the views of a model, the UML defines the following graphical diagrams:

- Use case diagram;
- Class diagram;
- Behaviour diagrams:
 - Statechart diagram;
 - Activity diagram;
 - Interaction diagrams:
 - Sequence diagram;
 - Collaboration diagram;
- Implementation diagrams:
 - Component diagram;
 - Deployment diagram.

These diagrams provide multiple perspectives of the system under analysis or development. The underlying model integrates these perspectives so that a self-consistent system can be analysed and built. The following paragraphs briefly describe the diagrams used in this thesis, a longer tutorial to the UML can be found in [Booch, 1999]

Use case diagram

A use case is a set of scenarios tied together by a common user goal. A simple format for capturing a use case involves describing its primary scenario as a sequence of numbered steps and the alternatives as variations on that sequence, as shown in figure 1.

Buy a Product

1. Customer browses through catalog and selects items to buy
2. Customer goes to check out
3. Customer fills in shipping information (address; next-day or 3-day delivery)
4. System presents full pricing information, including shipping
5. Customer fills in credit card information
6. System authorises purchase
7. System confirms sale immediately
8. System sends confirming email to customer

Alternative: Authorisation Failure

At step 6, system fails to authorise credit purchase

Allow customer to re-enter credit card information and re-try

Alternative: Regular Customer

3a. System displays current shipping information, pricing information, and last four digits of credit card information

3b. Customer may accept or override these defaults

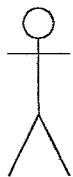
Return to primary scenario at step 6.

Figure 1 Example use case text

In addition to introducing use cases as primary elements in software development, Jacobson also introduced a diagram for visualising use cases. The use case diagram is now part of the UML. It must be stressed however that you don't need to draw a diagram to use use cases. The symbols that can occur in these diagrams will be discussed below.

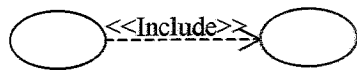


A use case is a set of scenarios tied together by a common user goal.

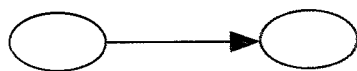


An actor is a role that a user plays with respect to the system. Actors carry out use cases. A single actor may perform many use cases, conversely, a use case may have several actors performing it. Actors don't need to be human, even though actors are represented as stick figures within a use case diagram. An actor can also be an external system that needs some information from the current system.

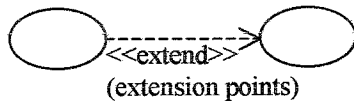
In addition to the links among actors and use cases (shown as lines), you can also show several kinds of relationships between use cases:



The include relationship occurs when you have a chunk of behaviour that is similar across more than one use case and you don't want to keep copying the description of that behaviour.



You use use case generalisation when you have one use case that is similar to another use case but does a bit more. In effect, this gives us another way of capturing alternative scenarios.



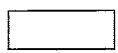
A third relationship is called extend. With this construct, the extending use case may add behaviour to the base use case, but in time the base use case must declare certain 'extension points', and the extending use case may add additional behaviour only at those extension points.

Apply the following rules:

- Use *include* when you are repeating yourself in two or more separate use cases and you want to avoid repetition.
- Use *generalisation* when you are describing a variation on normal behaviour and you wish to describe it casually.
- Use *extend* when you are describing a variation on normal behaviour and you wish to use the more controlled form, declaring your extension points in your base use case.

Class diagram

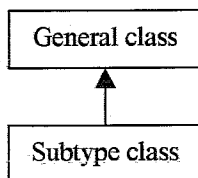
A class diagram show static structure or concepts, types, and classes. Concepts show how users think about the world; types show interfaces of software components; classes show implementation of software components.



A simple notation for a class is a rectangle with the name of the class inside. More advanced notations can include attributes and operations.

Associations (shown as lines) represent relationships between instances of classes. Each association has two association ends; each end is attached to one of the classes in the association. An end can be explicitly named with a label. This label is called a role name. An association end also has multiplicity, which is an indicator of how many objects may participate in the given relationship. The most common multiplicities in practise are:

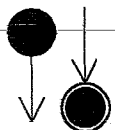
- 0..1 (none or one)
- 1 (one)
- * (many)



Generalisation is used when classes have many similarities but also some differences. The similarities can be placed in a general class, with the differences as subtypes.

Behaviour diagrams; the Activity Diagram

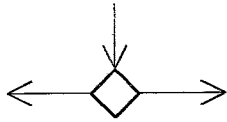
The activity diagram describes the sequencing of activities, with support for both conditional and parallel behaviour.



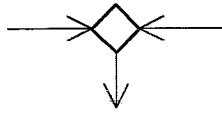
The beginning of an activity diagram is depicted by the symbol shown on the left side, the end is shown next to it.



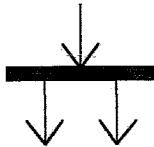
The core symbol in the activity state, or simply activity. An activity is a state of doing something: either a real-world process, such as typing a letter, or the execution of a software routine, such as a method on a class.



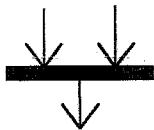
Conditional behaviour is delineated by branches and merges. A branch has a single incoming transition and several guarded outgoing transitions. Only one of the transitions can be taken, so the guards should be mutually exclusive. Using [else] as a guard indicates that the 'else' transition should be used if all the other guards on the branch are false.



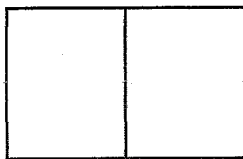
A merge has multiple input transitions and a single output. A merge marks the end of conditional behaviour started by a branch.



Parallel behaviour is indicated by forks and joins. A fork has one incoming transition and several outgoing transitions. When the incoming transition is triggered, all of the outgoing transitions are taken in parallel.



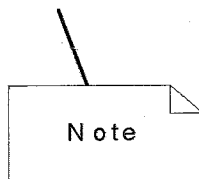
With a join, the outgoing transition is taken only when all the states on the incoming transitions have completed their activities. You can assign a condition to a thread coming out of a fork. The result is a conditional thread. During execution, if the conditional thread is false, that thread is considered to be completed as far as the join is concerned.



To use swimlanes, you must arrange your activity diagrams into vertical zones separated by lines. Each zone represents the responsibilities of a particular class.

Other symbols

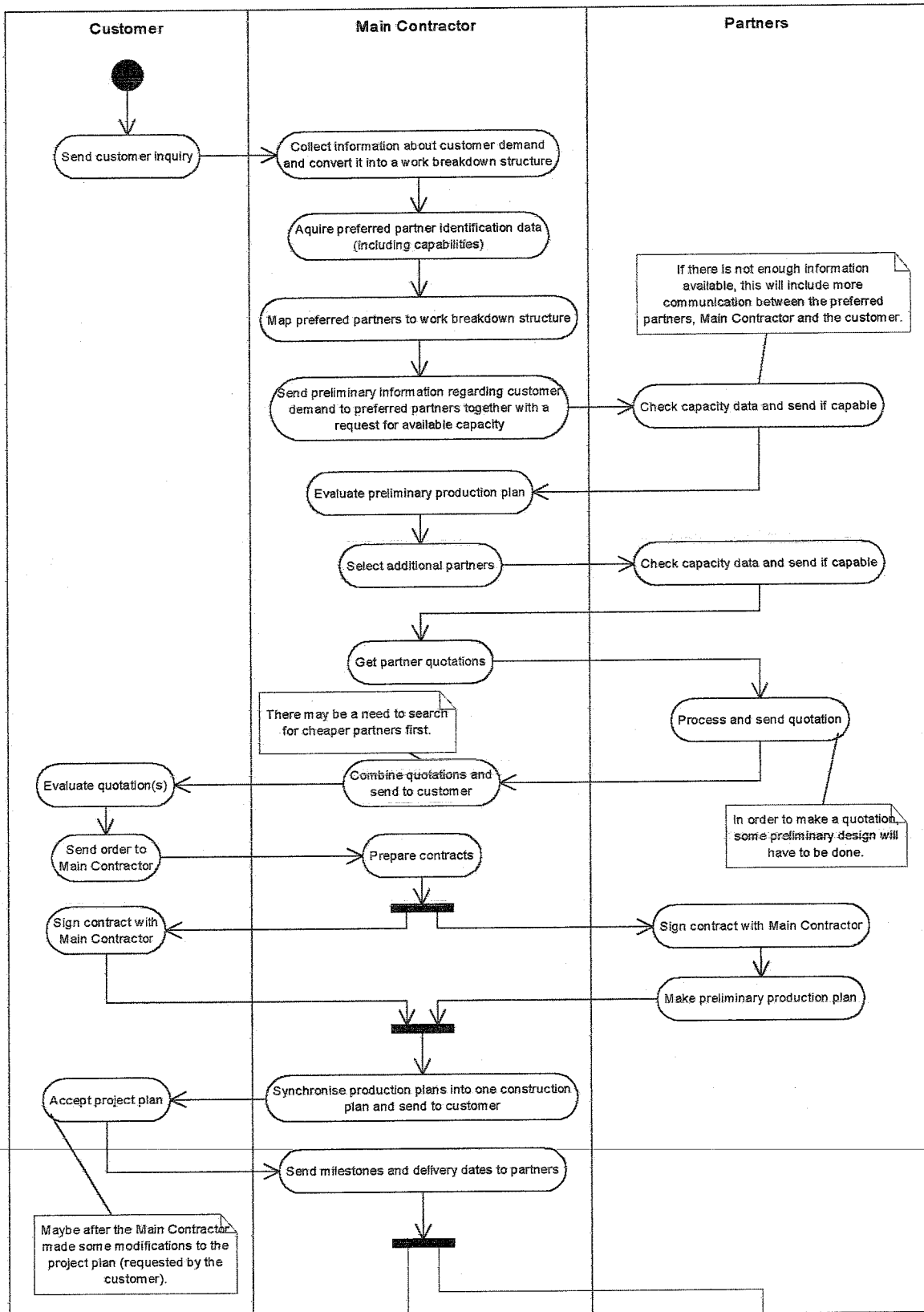
The UML allows you to use anything to describe constraints. The only rule is that you put them inside brackets ({}).



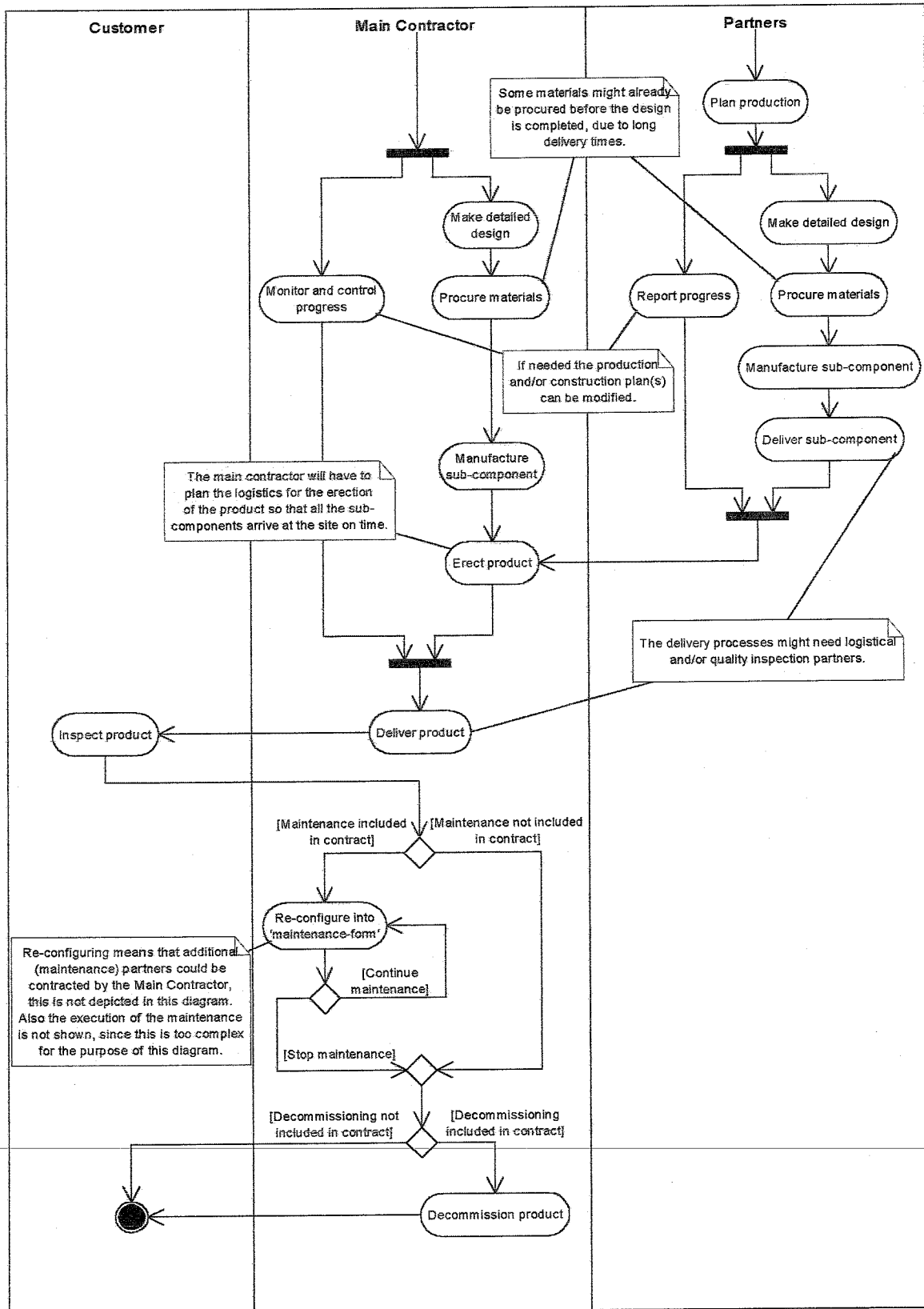
Also notes can be made in any diagram, a message inside a rectangle with a 'folded corner' is used to show this.

Appendix D: 'Order fulfilment process in the OKP industry'

Order fulfilment process (I of II)



Order fulfilment process (II of II)



Appendix E: 'VERAM'

This appendix has been taken from a paper titled 'An architectural framework for virtual enterprise engineering' (by Zwegers A., Hannus M., Tølle M., Gijzen J.W.J., Berg v.d. R.), which is to be published on the e-Business e-Work Conference and Exhibition [Zwegers, 2001].

The purpose of the architectural framework is to structure a body of knowledge that supports future practical work in the area of global engineering and manufacturing in enterprise networks. A part of this knowledge is in fact similar and common every time a VE is set-up or operated, and could be standardised and utilised.

The architectural framework positions elements that support modeling, formation/set up, management and ICT support of VEs, such as reference models, and supporting tools and infrastructures. Interrelations among these elements are indicated. This framework is called "VERAM – Virtual Enterprise Reference Architecture and Methodology". VERAM is a specialisation of the GERAM framework (Generalised Enterprise Reference Architecture and Methodology (ISO/DIS 15704) [IFAC/IFIP, 1999]), focused on virtual enterprise formation and operation.

Figure 1 shows the VERAM framework. Please note that VERAM is about the different tools, applications, models, and so on that can be used during the formation and operation of VEs and networks. This appendix does not state *how* these tools, applications, and models should be used. Guidelines describing how an organisation could use the various components of the architectural framework during virtual enterprise engineering will be developed as part of the ongoing GLOBEMEN project.

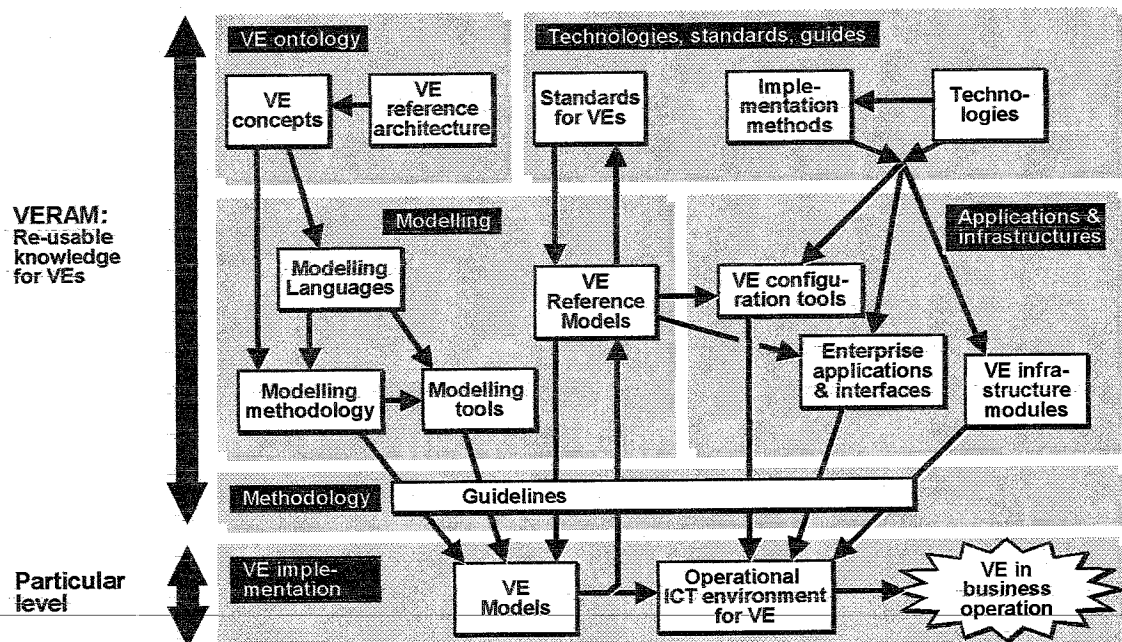


Figure 1 VERAM – Virtual Enterprise Reference Architecture and Methodology

Virtual Enterprise Ontology

An ontology is an agreed (and formal) description of shared concepts in some domain, which has the objective of enabling shared understanding and communication. Ontologies represent a new technology with the purpose to improve electronic information organisation, management, and understanding. An ontology is a conceptual information model that

describes “*the things that exist*” in a domain (hence the name): concepts, properties, facts, rules and relationships. An ontology acts as a standardised reference model to support information integration and knowledge sharing. The role of ontologies is twofold: (i) they support human understanding and organisational communication; (ii) they are machine-processable and thus facilitate content-based access, communication and integration across different information systems. Here, the first role is most important.

Virtual Enterprise Concepts

The Virtual Enterprise Concepts define the virtual enterprise related generic concepts recommended for use in virtual enterprise engineering and integration projects. For example, concepts such as ‘virtual enterprise’, ‘network’, ‘life cycle’, and so on are defined by means of a glossary. Other concepts can be categorised as:

Human oriented concepts to describe the role of humans as an integral part of the organisation and operation of an enterprise, and to support humans during enterprise design, construction and change.

Process oriented concepts for the description of the business processes of the enterprise;

Technology oriented concepts for the description of the business process supporting technology involved in both enterprise operation and enterprise engineering efforts (modeling and model use support).

Virtual Enterprise Reference Architecture

The Virtual Enterprise Reference Architecture (VERA) organises the virtual enterprise related generic concepts recommended for use in virtual enterprise engineering and integration projects. Whereas the previous component *defines* the various concepts, the VERA *organises* them. Essentially, the VERA provides a structural arrangement of virtual enterprise subject matters.

Modeling

VERAM’s modeling part allows enterprises to analyse and re-design the business processes of a VE. During the formation of a VE, but also during reconfiguration of an existing VE, enterprises may acquire knowledge of current business processes by means of modeling. This knowledge is needed in order to analyse the existing processes. Then, the models may be changed to take required modifications into account.

The definition of sound business processes, upon which the further design or selection of needed IT tools and applications is based, is one of the keys to business process integration. Co-operation in virtual enterprises requires that a common understanding exists about shared business processes. Modeling languages are needed to make these business processes explicit. Main areas are modeling of data and modeling of processes.

Modeling Languages

(Enterprise) Modeling Languages define the generic modeling constructs for (enterprise) modeling adapted to the needs of people creating and using enterprise models. In particular, enterprise-modeling languages provide constructs to describe and model human roles, operational processes and their functional contents.

The main classes of modeling languages are:

- Process modeling languages, such as SADT, OMT, Petrinets;
- Data modeling languages, such as Entity-Relationship Modeling, Express;
- Process and data modeling languages, such as IDEF, UML.

Most enterprise modeling languages are generally applicable to inter-enterprise modeling as well.

Modeling Tools

Modeling Tools support the processes of enterprise engineering and integration by supporting modeling languages. Frequently, a kind of engineering methodology is implemented in a modeling tool as well. Modeling tools should provide for analysis, design and use of enterprise models.

Numerous modeling tools are available that support IDEF or UML modeling. In addition, well-known enterprise engineering tools exist, such as DEM and ARIS.

Modeling Methodology

Modeling Methodologies support the modeling process by means of guidelines, which guide a user in making models. Modeling Methodologies are usually related to a specific Modeling Language and may be 'embedded' in a Modeling Tool.

Reference Models

Reference Models (or Partial Models) capture characteristics, which are common to many enterprises within or across one or more industrial sectors. Thereby, these models capitalise on previous knowledge by allowing model libraries to be developed and reused in a 'plug-and-play' manner rather than developing the models from scratch. Reference models make the modeling process more efficient.

The scope of these models extends to all possible components of the enterprise such as models of human roles (skills and competencies of humans in enterprise operation and management), and operational processes (functionality and behaviour). Some authors consider models of technology components (service or manufacturing oriented), and infrastructure components (information technology, energy, services, etc.) to be part of reference models as well. However, in VERAM the latter two are positioned in Enterprise Applications and VE Infrastructure Modules respectively.

Reference models may cover the whole or a part of a typical enterprise. They may concern various enterprise entities such as products, projects, companies, and may represent these from various points of view such as data models, process models, and organisation models. The GLOBEMEN Reference Model focuses on the processes executed by an enterprise related to:

- Participation in and management of an enterprise network;
- Formation of a virtual enterprise;
- Operation in a virtual enterprise.

Figure 2 shows that the GLOBEMEN Reference Model consists of various types of models, ranging from IDEF0 process models to UML implementation diagrams.

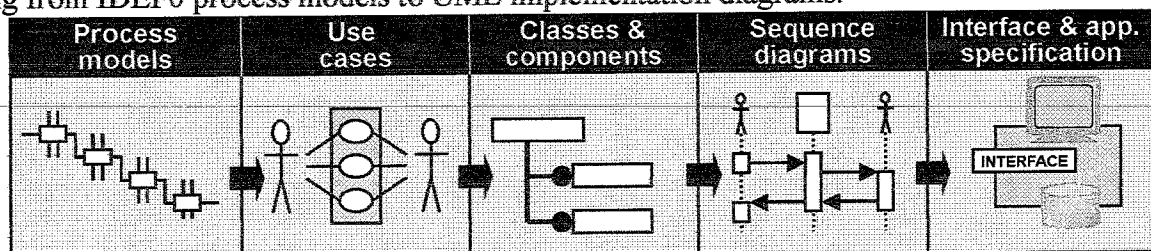


Figure 2 Types of models in the GLOBEMEN Reference Model

Technologies, Standards, and Guides

VERAM's Technologies, Standards, and Guides section contains those factors that affect the way a VE is put into operation. It contains a rather broad set, ranging from technologies to legal aspects. Some of these factors will lead to different contingencies in the VE formation, other factors will lead to different VE implementations.

Standards for VEs

Standards for VEs comprise standards for aspects such as legal issues, security issues, trust issues, and so on. These determine to a large extent the contingencies that define how a virtual enterprise will be put into operation, and thereby affect the VE Reference Models.

Technologies

Technologies are used to realise enterprise applications and infrastructure components. They enable the realisation of enterprise applications and infrastructure components, and thereby enable but in a sense also restrict the execution of business processes. Examples of relevant technologies are communication, integration, and collaboration technology.

Implementation Methods

Implementation Methods define how an individual enterprise might use available technologies to define its Enterprise Applications and VE Infrastructure Modules to support the formation and operation of VEs and inter-enterprise networks.

Applications and Infrastructure

VERAM's Applications and Infrastructure section contains the components that perform or support the business processes as described in the Modeling section. As such, they provide the (technological) realisation of these business processes, enabled by the technology as defined in the Technologies, Standards, and Guides section. These Applications and Infrastructure Modules concentrate on the execution or support of the formation or operation of virtual enterprises and networks.

VE Configuration Tools

VE Configuration Tools are used to set up virtual enterprises. Different types of configuration tools are needed for – for instance – configuration of platforms, projects, and contracts. These tools aim to set up a virtual enterprise quickly, based on proven business models, applications, and platforms. They use VE Reference Models, and define a configuration of Enterprise Applications and VE Infrastructure Modules.

Enterprise Applications

Enterprise Applications are either standard, commercial off-the-shelf systems or bespoke solutions, developed for a particular enterprise. In this context, we focus on functionality provided by Enterprise Applications to join or set up a network, and to form or operate a virtual enterprise. Examples are applications for consortium definition support, distributed engineering, subcontracting, internal trade, certain knowledge management functions, etc. Enterprise Applications provide (parts of) the functionality that is outlined in the VE Reference Models. Therefore, mappings can be made between Enterprise Applications and VE Reference Models. In other words, the mappings indicate what business processes as defined in VE Reference Models are covered by what Enterprise Applications.

VE Infrastructure Modules

VE Infrastructure Modules are used to enhance Enterprise Applications with VE specific functionality. A distinction is made between an Enterprise Application and the enabling technology offered by an infrastructure upon which the Enterprise Application resides. If certain technologies are chosen for Enterprise Applications to implement certain functions, some additional technology (i.e. its functionality is not defined in VE Reference Models) might be needed to enable a proper functioning of the first technologies. VE Infrastructure Modules thereby enable the execution of VE processes by Enterprise Applications.

Discussion

The discussion focuses on how the VERAM framework can be used for the integration of different enterprises into a virtual enterprise. A distinction is made between five levels of integration. Satisfactory integration at a lower level is necessary before integration at a higher level can be achieved. Over the years, the higher levels of the framework have become more relevant.

The lowest level of integration, physical integration, is needed to facilitate co-operating applications and enterprises. Relevant standards at this level of integration are TCP/IP and Ethernet. VERAM follows the technology standards as identified in the Technologies box. Application integration is concerned with the usage of ICT to provide interoperation between enterprise resources. Co-operation between humans, machines and software programs has to be established by the supply of information through inter- and intra-system communication. Application integration is split in two parts. Whereas semantic standards support integration at the level of 'meaning', syntactic standards are meant for integration at the level of 'form'. Syntactic standards enable sources and messages to have similar formats. Standards in this area are STEP Part 21, Java RMI, XML, Corba, and DCOM. Semantic application integration should result in a situation where the output of applications is meaningful to other applications. Examples of standards at this level are EDIFACT, STEP Application Protocols, RosettaNet, and BizTalk. Clearly, the Applications and Infrastructures part of VERAM deals with application integration.

Business process integration is related to the fact that integration in virtual enterprises requires a common understanding about shared business processes. Modeling languages are needed to make these business processes explicit. Examples of standards at this level are IDEF, Petrinets, UML, ER, LOTOS, SDL, VDM, Z, and χ . VERAM's Modeling part is concerned with business process integration. Even if co-operating enterprises speak the same language, they may not understand each other because their business processes may not be aligned. Modeling interactions between members in a virtual enterprise – for example by means of UML sequence diagrams – is a suitable tool to define and analyse aligned business processes. The internal processes do not have to be modelled; just the business processes 'at the interface'.

The highest integration level, inter-enterprise co-ordination, is specific for supply chains and virtual enterprises, in short for all situations in which enterprises co-operate with other enterprises and co-ordination is needed beyond their boundaries. Dedicated guidelines for inter-enterprise co-ordination are needed, e.g. for partner selection, certification or inter-enterprise best practice definition, and so on. As already mentioned VERAM is an intermediate result of the ongoing GLOBEMEN project. The VERAM framework will be refined further throughout GLOBEMEN including guidelines for its use.

Appendix F: ‘Virtual enterprise (related) activities’

Parts of the text in this appendix were formulated by Griffith University in an earlier stage of the GLOBEMEN project. This text has been updated with the last insights from the GLOBEMEN project, the industrial reference group and other (literature) sources used in this research.

Network

This section discusses the activities related to each life-cycle phase of the network.

Network identification

The aim of the network identification phase is to identify the overall purpose of the network. The main outcomes of this phase include:

- A clarification of the overall purpose of the network including which type(s) of market(s) it shall serve;
- An identification of the critical partners to be included in the network;
- A letter of intent between the critical partners.

A specific network is ‘born’ when someone identifies a clear motivation for establishing a network. Motivations could include; cost reduction (specialisation on core competencies in order to achieve economies of scale), flexibility, risk sharing, exploitation of new/expanding (global) markets.

These motivations should be documented together with the market(s) and types of customers that are being addressed, i.e. which types of products/ solutions should the network be able to deliver.

Now its clear why there should be a network, thought should be given on how to accomplish this. Critical partners need to be identified. Partners are critical when they have knowledge/ means that are rare, but also partners that will be heavily involved in the future production/ construction processes can be critical. Critical partners typically include subcontractors, since they deliver substantial parts of the final product, together with tactical suppliers in order to benefit from large quantity discounts.

It goes without saying that some of the company’s existing business partners will also become network partners.

The next step is to establish management commitment by explaining how the companies could benefit from participating in the network. And if the management is committed the potential partners should be invited to a kick-off meeting where the network idea is introduced.

The network idea can be dismissed in all the steps mentioned above, if however the partners agree to commit themselves to the ‘project’ a letter of intent (LOI) is created. A letter of intent is a legally binding contract between the network partners including for instance; overall resource budget, key responsibilities and resource contributions obligated by partners, nondisclosure agreements, termination conditions, and operational procedures.

Figure 1 depicts a more crisp visual description of this phase.

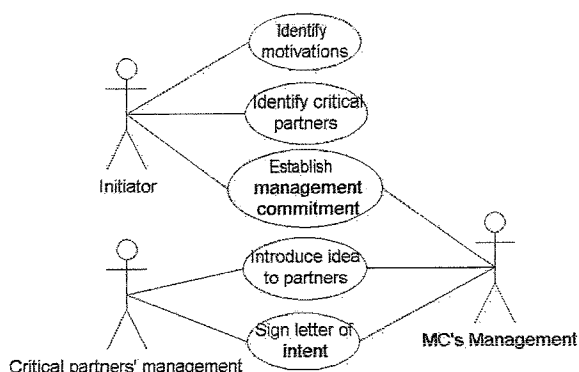


Figure 1 Use case network identification

Network concept

In the concept phase (depicted in figure 2) serves to further clarify the motivation for creating the network, to determine in more detail which types of products/ markets it should aim at. Also the network's mission, vision and objectives are defined in this step.

The main outcomes of this phase include:

- An overview of external factors and the maturity of the network;
- A strategic analysis;
- An agreement on the network's mission, vision goals and strategies;
- A study on the feasibility of the network;
- A management structure for the further set up of the network.

Elaborating on the overall purposes of the network, situational factors need to be determined that have to be taken into account when configuring the network. Situational factors include external factors that the partners in the network cannot influence. Examples are:

- Technology; to which extent are new technologies being utilised by competitors and suppliers. Also, what is the state-of-the-art regarding utilising new technologies smarter?
- Customer expectations regarding time, price, service, life cycle coverage.

The determination of the market situation needs to be mentioned explicitly; a thorough market analysis is critical for these kind of strategic decisions. Of course also statements about the expected future situation have to be made regarding the same topics.

Besides the as-is and to-be situation of the environment also the as-is situation of the network needs to be determined at the same time. This clarification of the as-is situation guides the future preparation of the network. It should help identify the maturity of the network as a whole through assessing the maturity of the individual partners. Accordingly, the clarification should help identify and prioritise tasks to be carried out in the process of preparing and setting up the network.

An important aspect to look at is the technical level (including ICT systems/ infrastructure) of potential partners in the network. The current technical level of the partners influences and to some extent determines the technical level that the network should aim at. Accordingly, the clarification of the partners' current technical level guides the following preparation of the network. However, only to some extent, because regardless of the current technical level of its partners a network might only be competitive if it achieves a high technical level.

Information about the geographic dispersion among partners (number of languages, time zones, cultural diversity) can later be used to identify regions where new partners could be located.

The information gathered above should subsequently be used as input for a strategic analysis, like a SWOT-analysis (Strength, Weakness, Opportunities and Threats), to clearly depict the position of the network.

Based on the motivations, the identified situational factors, the expected future situation, the maturity of the network and the strategic analysis common agreements have to be made regarding the future:

- It is essential that the partners in the network reach a consensus regarding the overall purpose and goals of the network. It is important to ensure that the overall expectations of the different partners are understood and to a large extent aligned in order to avoid that the network partners are aiming at different targets. Mission, vision and goals have to be defined together with critical success factors for the network (e.g. what is crucial in order to survive in the expected future market situation).
- Strategies and network policies have to be defined together with a basic culture including values and beliefs.
- Contractual conditions between partners have to be considered, for example, payment by unit price for each delivery or a more comprehensive contract including risk sharing. Will the network be open, which means that the network is open for inclusion of additional partners, or closed?

When there is consensus of opinion on all these aspects a detailed feasibility study including a cost benefit analysis is the next step. If the result is positive a preliminary project list is created based on the defined concept for the network and the identified paths from the as-is situation to the envisioned to-be situation. Now time has come to set up the overall management structure for the further set up of the network; a project manager should be selected together with project teams, which will carry out the preparation projects in the network requirements, design and implementation phase.

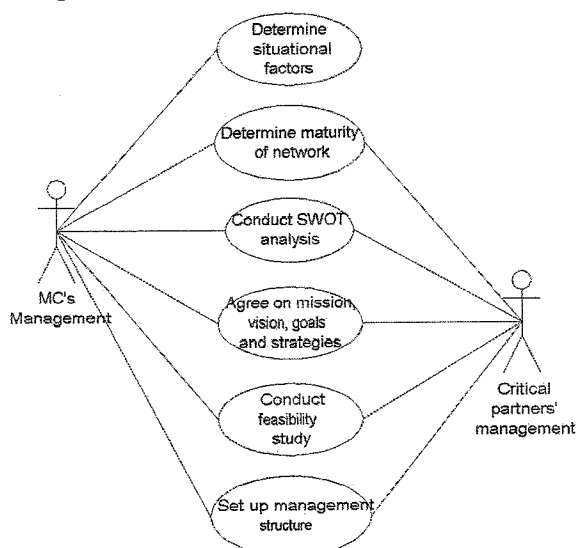


Figure 2 Use case network concept

Network requirements

The purpose of the requirements phase of the network is to clarify requirements concerning the design of the network. One way to carry out the activities in this phase is taking outset in the preliminary project list specified in the previous phase and define a set of projects, where each project focuses on one or more aspects of the network. Each project team should include relevant experts from the different critical partners.

Requirements are unique for every network, therefore this section will briefly point out in which directions requirements are needed:

- Well defined target requirements concerning the overall performance of the network need to be determined, e.g. requirements for the overall lead-time/ cost from first customer contact to delivery of the product, quotation time /cost, production time /cost/ quality.
- Critical core competencies need to be specified.
- Requirements for (ICT) tools and infrastructures to be developed by the network, such as a virtual enterprise configurator, a product configurator, project management tools.
- Contractual requirements need to be further specified. Who owns the property rights for knowledge and/or inventions created by the VE/ network (the individual partner, the VE partners, or all the partners in the network)? How are the VE/ network cost/ profits divided, for example, cost of equipment that is important for the VE/ network but are implemented at one of the partners.
- Requirements for how to select partners to be included in the VE/ network.
- Determine requirements for value chain processes, supporting business processes (including business process (re)engineering). Which business processes should be prepared for the network going into operation? These may include order acquisition processes, product development processes, quality procedures, order fulfilment processes and post sale service processes.
- Related to this requirements concerning standardisation need to be looked into; which standards should the network comply with, which are mandatory and which are by choice? Attention should be paid to (inter)national, industry, de facto and internal standards.
- Organisational and human relationship requirements; for each role determined to be applied in the network job descriptions (including responsibilities) need to be made.

The use case of this phase looks quite different to the previous two, it does not make much sense to specify the requirement areas in great detail since they may vary a lot from network to network. The main message is that requirements need to be specified in such a way that the mission mentioned in the concept phase is likely to be achieved when the requirements have been converted (designed and implemented) into an operational network.

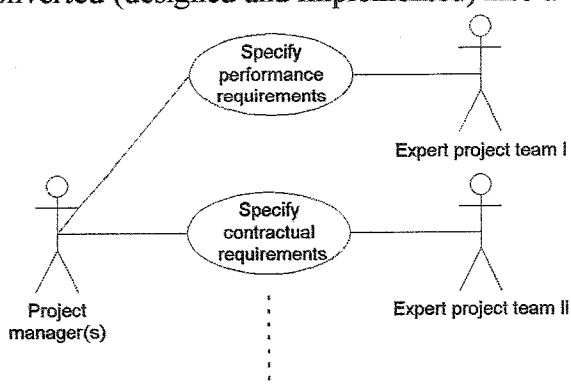


Figure 3 Use case network requirements

Network design

Within the design phase the focus shifts to activities describing how to implement the requirements specified in the preceding requirements phase. Accordingly, the systems, tools, and procedures for which requirements have been specified shall be designed in the network design phase. As such the focus of the design phase is guided by the requirements, and

therefore equally difficult to describe. Still the following activities are part of the design phase of the network:

- Which partners should contribute with which competencies to the network? This activity is an extension of the identification of critical partners in the identification phase. In this activity it is specified which partners are participating in the network as well as which core competencies they are contributing with.
- Develop the preliminary as well as the detailed design of the tools, procedures, business rules and management systems as specified in the requirements phase. For example the order fulfilment process; how is a customer request handled; shall the network establish a common sales department which takes care of customer requests, or can the customer contact an arbitrary partner in the network; shall the network point out an 'objective/neutral' Broker who can handle customer requests?
- Allocate resources to roles.

This results in a similar (to the requirements phase) use case:

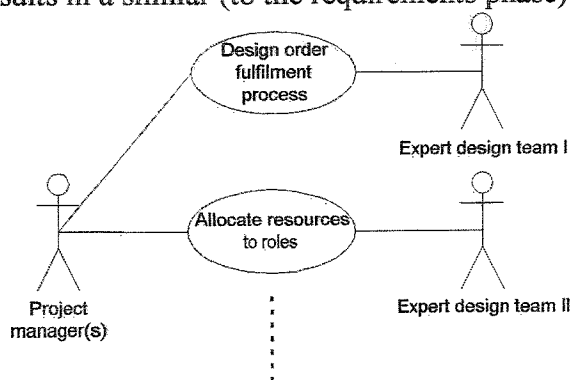


Figure 4 Use case network design

Network implementation

The implementation phase (depicted in figure 5) includes the set of activities that are concerned with building the entity. As such this phase represents the physical manifestation of the requirements and the designs made in the two previous steps. In accordance with this interpretation, the implementation phase includes the following activities:

- Assign authorities to roles.
- Assign competencies to the network.
- The desired level of preparation is being obtained by procuring tools, implementing, integrating and testing them together with their procedures. Also personnel is being trained and documentation written (e.g. templates).
- Finally all the knowledge and experiences from the network set up should be collected for possible future use.

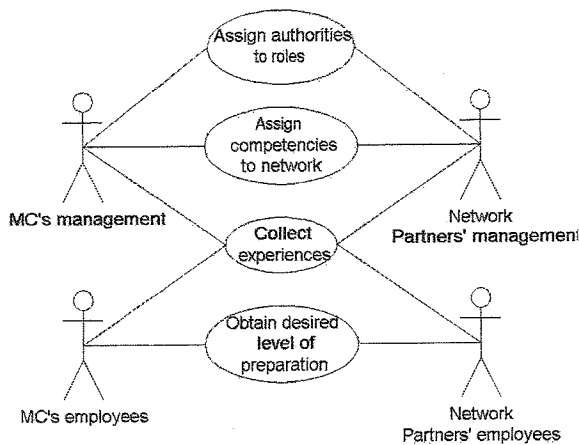


Figure 5 Use case network implementation

Network operation

Now the network has been prepared it can set up different VEs, each creating products and/or services requested by customers, in its operation phase. The network's core activity in this phase consists of the formation of temporary co-operations (virtual enterprises) on receipt of a customer request (it could be that a customer order is being generated by the network itself). Besides this core activity three supporting activities have been identified; marketing, network management and partner management (see figure 6).

VE configuration

A given customer request will be handled by the 'Broker' of the network. It's the Broker's task to collect information about the customer's demand, conduct an initial feasibility study (assessing the network's capability) and inform the network's 'Competence Manager' about the relevant customer needs. Subsequently the Competence Manager selects the partners, based on their available capacity, that could participate in the virtual enterprise to fulfil the customer's needs and appoints a Project Manager (or 'Contract Manager'). When the VE has been formed, the network (i.e. the Broker and the Competence Manager) goes back and awaits another customer request.

Basically the network identifies the need for a virtual enterprise and 'designs' its configuration, that's why these same business processes recur in the VE set-up phases.

Marketing

Because of the temporary nature it's very unlikely you'll find a marketing division in a virtual enterprise. The network on the other hand represents a more long-term co-operation and therefore the Main Contractor will continuously watch the market and look for new opportunities. The description of these marketing activities is out of scope, a lot of the 'traditional marketing' will apply to 'network marketing', it won't be discussed in further detail here.

Network management

The 'Network Manager' (and other members of the network) continuously evaluates the network's performance and considers its appropriateness, concept and level of preparedness. In addition corrective measures are carried out.

The Network manager can at a given time initiate a project group that can focus on one or more of the mentioned aspects (e.g. examine why the quotation time is too long). The need for this type of (re-)engineering projects can be initiated from either a specific need emerging

from an actual VE or, due to a more proactive approach, from future needs. When the need emerged from a virtual enterprise, it should only be addressed by the network if the network assesses that the need is of a general level (i.e. also expected to be relevant/useful for other future VEs).

Partner management

Over time partners will join and leave the network for various reasons. The Competence Manager needs to have procedures for registering and 'deleting' partners in the network so that he/she always has an updated 'list' of network members with their competencies. This person will also keep an eye on the composition of core competencies in the network in order to keep the network 'healthy'.

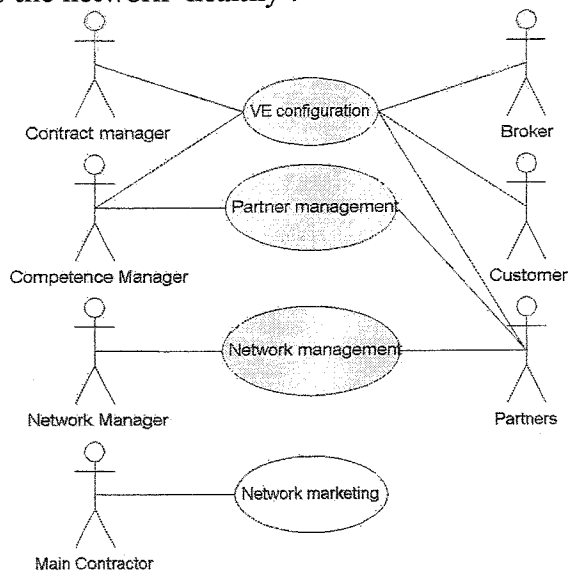


Figure 6 Use case network operation

Network decommission

When it is decided to close down the network, each of the partners should ensure that they capture experiences from participating in the network. Fundamentally, experience collection should be an ongoing process and not only be related to the decommission phase. After dividing possible network assets the network is dissolved (see figure 7).

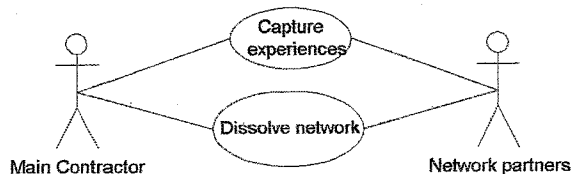


Figure 7 Use case network decommission

Virtual enterprise

This part discusses the activities related to each life-cycle phase of the virtual enterprise.

VE identification

The trigger point for this phase is either that a customer contacts the Broker of the network or that the network by own initiative considers setting up a VE. After this initiating contact the Broker clarifies the customer's need through negotiations with the customer and assesses whether the network can fulfil the customers need. This will be done in a feasibility study that compares the network's capabilities with the customer request.

Figure 8 depicts this identification phase

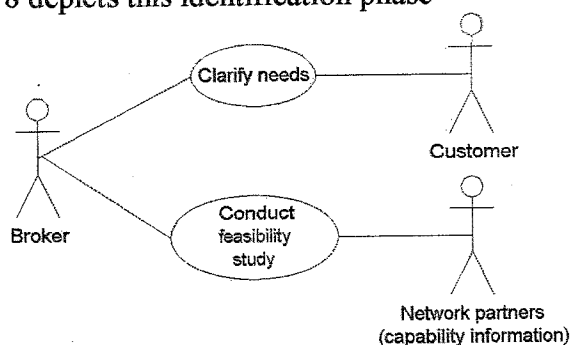


Figure 8 Use case VE identification

VE concept

In this phase the concept of the VE according to the customer demand shall be determined (depicted in figure 9). First the Broker informs the Competence Manager about the need. Based on the available capacity the Competence Manager identifies which critical partners from the network could be included in the virtual enterprise. Subsequently, after evaluation of the preliminary production plan, additional partners are identified. Second a Contract Manager (i.e. the leader of the VE), typically someone coming from the Main Contractor, is selected. The Contract Manager now selects the operational concepts and policies (predefined by the network) to be applied in the virtual enterprise. If there is the need to carry out additional preparation activities this should be clarified in this phase. For instance, regarding the general organisation, shall the VE apply distributed engineering and if this is not prepared enough by the network, what additional preparation has to be carried out?

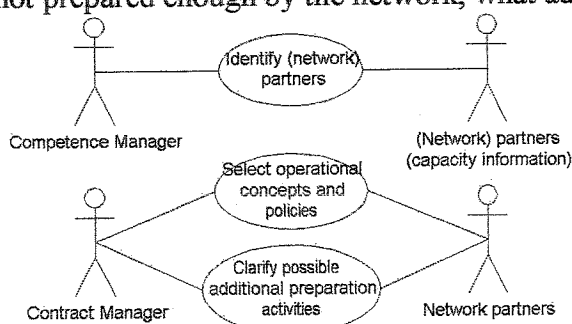


Figure 9 Use case VE concept

VE requirements

The purpose of the VE requirements phase (depicted in figure 10) is to clarify requirements concerning the design of the virtual enterprise including the VE delivery system. That is, specifying requirements for the overall business processes as well as roles and rules for the VE. The primary question in this phase is what the VE should be able to perform in its operation phase.

In analogy to the network, one or more project groups can be formed each focussing on different aspects. The contents and extents of the tasks for the individual project groups are depending on the level of preparation already carried out in the network. The tasks can vary from instantiating already defined models, tools and procedures to carrying out projects from scratch.

However, when a VE identifies a need to prepare additional product-life-cycle (PLC) activities, which have not been prepared by the network, the VE should assess whether the

need is specific for the actual VE, or whether it has a more general nature that could be relevant to future VEs as well. With regards to the last-mentioned it should be determined whether the project should be carried out at the network level or, alternatively, the VE should do the work and be refunded by the network afterwards.

Accordingly the following types of activities could be executed in the requirements phase:

- Determine requirements for value chain processes and supporting business processes; are the processes prepared by the network sufficient, or is there a need for modifications and/or specification of additional processes to be applied in the VE?
- Requirements concerning the overall performance of the specific VE need to be specified. This includes for example time requirements on how fast the VE should set up its delivery system and carry out the various life cycle phases of the PLC requested by the customer.
- Specify requirements for (ICT) tools and infrastructures to be applied and/or developed by the VE, such as a project management tool.
- Also apply/specify contractual and legal requirements concerning for example sharing of cost, risk and profits.
- Organisation requirements:
 - Which core competencies are needed in the VE in order to fulfil the customer requirements?
 - Which types of roles should be applied/created in the VE to create the PLC?
 - How is the chain of command between the partners and the identified roles?
 - Communication issues; specification of netiquette requirements, selection of templates and the creating of mailing lists.

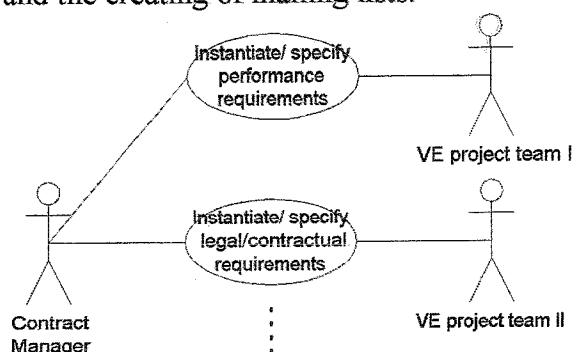


Figure 10 Use case VE requirements

VE design

Just as for the network the systems, tools, procedures, etc. for which requirements have been specified shall be designed in the VE design phase (depicted in figure 11). However, the main difference between the design phase of respectively the network and the VE entity is that the models, tools, procedures etc. are designed more or less from scratch in the network, whereas the same models, tools and procedures might be further instantiated in the VE design phase. Accordingly, the structure of the activities in the VE design phase is given by the requirements outlined in the previous phase. Furthermore, the type and extent of the activities depends on how much has been prepared beforehand by the network.

For instance, the following activities could be considered in relation to designing the VE organisation:

- The contribution of each partner regarding different types of resources (e.g. competencies, types and number of machines and personnel) needs to be determined.

- Partners start making preliminary designs and engineering specifications in order to produce a quotation.
- Preparing and signing of contracts by both the network and non-network VE partners.

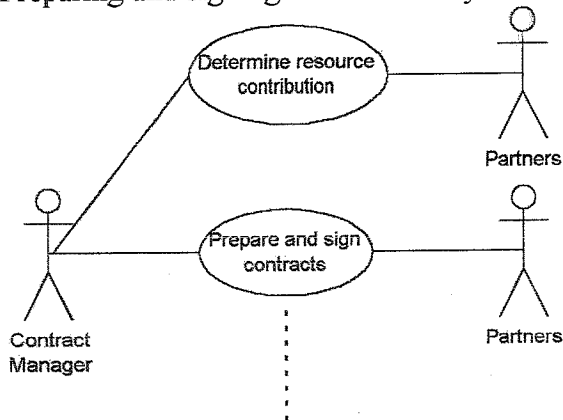


Figure 11 Use case VE design

VE implementation

Again, the activities in the VE implementation phase (depicted in figure 12) are analogue to the type of activities outlined for the network implementation phase. In this phase tools, procedures, etc. are created or installed, tested, specific personnel are assigned to different tasks/ roles and eventual training of these people is carried out.

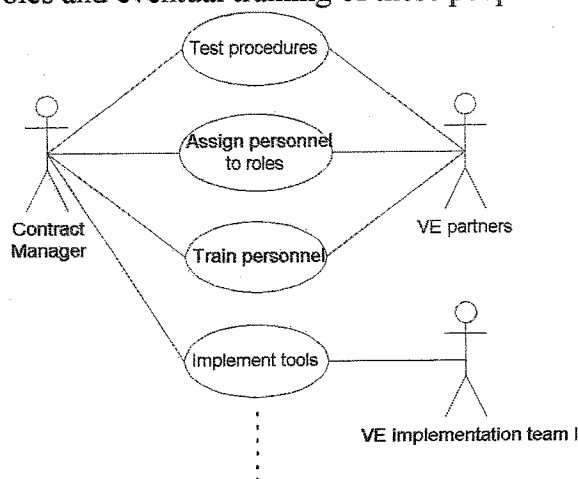


Figure 12 Use case VE implementation

VE operation

In the operation phase of the VE (depicted in figure 13) the actual delivery system is in operation and carries out the PLC-tasks in question. The VE-partners transform the need into a design, implement it, maybe maintain it and/ or finally decommission the product. In order to clarify the VE's operational tasks the PLC will be explained in the next section.

It should be noted that the first phases (up to and including the preliminary product design) have already been passed through in setting up the VE, also not every business partner needs to be active in each PLC phase, therefore the VE reconfigures during its operation phase.

In addition to the mission fulfilment activities, the Contract Manager monitors and controls the VE's activities including considering the appropriateness of the VE's tools, procedures, etc. and initiates appropriate corrective actions.

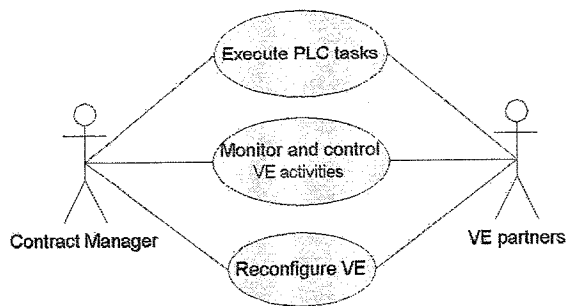


Figure 13 Use case VE operation

Product life cycle

In general the content of the life cycle phases, i.e. the specific activities, does not depend on the type of enterprise producing it. That is, in principle it does not make a difference if the product is produced by a single enterprise, by a conventional rigid supply chain or by a VE. Accordingly, the difference and challenge is not so much in the type of activities, but more in the way the activities are set up, planned and executed. For instance, the design of a product in principle does not depend on the type of enterprise carrying out the design. However, if the design is created in a VE having a distributed design environment, the challenges are, e.g., related to the co-ordination of the work of the different design teams. These type of challenges are related to the VE entity and should be considered when creating the network and setting up the VEs.

Product identification

In the product identification phase the need for the product is identified. The customer will most likely be the one identifying the need, although it could be that the Main Contractor or a network partner identifies a need. This phase also includes a clarification of the need.

Product concept

Just as for the identification phase the customer is most likely to determine the product concept. Key questions that need to be answered in this phase are:

- What is the purpose of the product?
- What is it intended to do?
- In which situations should it be applied?
- Who is the user?

Product requirements

In this phase the customer interacts with the producer in order to come to a shared understanding about the requirements. Specification of product requirements include for example:

- Technical and functional requirements;
- Economical requirements (e.g. cost price);
- Time requirements (e.g. delivery date).

Product design

In this phase the actual product is designed taking outset in the requirements specified in the previous phase. Two overall activities are related to the design phase; a preliminary design (often needed to be able to make a quotation), and if the customer order is received the final design of the product is defined in further detail.

Product implementation

In the implementation phase the product is actually produced, constructed and tested.

Depending on the type of product the implementation can include actual implementation at the customer as well as sufficient training of personnel. Accordingly, the following activities can be carried out in the implementation phase:

- Procure materials;
- Produce product;
- Delivery;
- Test product;
- Train personnel.

Product operation

In this phase of the product life cycle the product is in its operation fulfilling the need of the customer. The VE can be re-configured in order to offer for instance remote support or other maintenance and/ or service activities.

Product decommission

Finally the product is decommissioned, i.e. disassembled, recycled and/or disposed. Also this phase can be supported by a so called decommission VE.

VE decommission

When the delivery system has fulfilled its tasks it is dissolved in the decommission phase (depicted in figure 14). However, before it is dissolved especially the network partners should reflect on the accomplishments of the VE and capture experiences related to it in order to improve the network:

- Identify what the VE did respectively good and bad, as well as why the outcomes were as they were.
- Should some of the specific tools and procedures be generalised (created by the VE) and captured by the network and thereby be applicable for future VEs? If so, should the network pay some kind of development fee to the VE's partners which have created it?
- Would it have been beneficial for the virtual enterprise if the network had prepared additional tools and procedures? That means, is there a need for developing additional tools and procedures to be available in the network for future VEs?

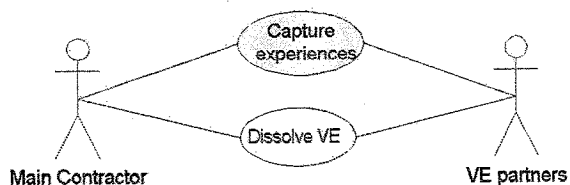


Figure 14 Use case VE decommission

Appendix G: 'Baan's applications I'

Business Intelligence Solutions (iBaanBIS)

Make the right decisions based on the right information at the right time...

iBaanBIS solution consists of:

- **Enterprise reporting (Operational effectiveness)**

o **Seagate Info™ (Create and distribute presentation quality reports)**

Seagate Info™, with the integrated technology of Crystal Reports, is the new enterprise-reporting standard for Baan. Designed to scale from departmental workgroups to global enterprises. It enables users to leverage the full value of all information to improve productivity and as a result help improve profitability.

Seagate Info was designed to address the many complex challenges a company faces in delivering reports to a large number of users, from large data volumes stored in numerous sources to geographically dispersed users with varied skill sets. Seagate Info offers secure and efficient delivery of reports across the enterprise.

- Easy-to-use graphical customisation environment - users can incorporate graphs, maps, logos, hyperlinks and more
- Report on multiple Baan and non-Baan data sources across multiple sites
- Deployment is web-based and scalable
- Native ERP integration for multi-company reporting, enterprise security, multiple language support and more
- Slice and dice multi-dimensional data on the fly for an advanced insight into your business

Seagate Info™ integrates the reporting technology of market-leading Crystal Reports®, giving all users the ability to easily create powerful, presentation quality reports from Baan and other data. End-users can enjoy secure, self-serve access to critical information whatever the data source or functional area of concern.

o **Crystal Enterprise Solutions™ for Baan™ (Native access to Baan)**

Crystal Enterprise Solutions for Baan helps your enterprise leverage the powerful eReporting capabilities of Seagate Info to get the most from all your corporate data sources. It's an add-on solution, which lets companies use Seagate Info over BaanIV or Baan ERP data, and includes everything you need to get started - from drivers, installation instructions and sample reports, to Getting Started and User Guides.

- **Tactical Intelligence (Increased performance)**
 - o **iBaan Decision Manager (Business Information Warehouse)**
 - **ETL Modeler**

A modelling environment called the ETL Modeler is an integral part of this solution, and enables users to design extraction, transformation and loading processes at a high level of abstraction in a graphical user interface:

 - Select tables and fields from various data-sources
 - Define the transformations you want to perform on the raw data from the data sources
 - Define the upload strategy to load the transformed data into a data warehouse

The ETL Modeler supports 'generic concepts' that are important in data warehousing solutions - for example, the support of slowly changing dimensions. You might, for instance, use this feature to choose between various strategies to keep history related to dimension elements - for example, the country where a customer lives. To use these generic concepts, you simply select an option in the modeling phase at design time.

The ETL Modeler also generates extraction generation, transformation, and loading scripts automatically, from a user-defined model. That can mean that no hands-on attention to the technical details of script implementation is required from the user during ETL model design.

The business content available for iBaanDM is developed in ETL Modeler – so you can customize data models to help meet your specific needs, or create your own from scratch.
 - **Decision Manager Console**

The Decision Manager Console supports system administration and management functions for the iBaan Business Information Warehouse:

 - Scheduling various processes
 - Monitoring various processes
 - Checking data quality
 - Cleaning up the data warehouse
 - Maintaining OLAP cubes
 - Generating metadata reports on the Business Content
 - o **iBaan OLAP Navigator (Multi-dimensional analysis)**

iBaan OLAP Navigator provides multi-dimensional analysis at the desktop. It gives end users a range of powerful but easy-to-use tools for slice & dice, interactive filtering and complex formulae calculations and analysis.

Tools are also included for analysis at a workgroup level, allowing knowledge workers to collaborate with colleagues on decision-making and analysis tasks. The Baan OLAP Navigator is also integrated with iBaan Data Navigator.
 - o **Business Objects (Management Reporting)**

Business Objects is a client/server business intelligence software tool with integrated query, reporting, and OLAP functionality for managers.

Business Objects provides non-technical computer users with access to data from the iBaanBIS Business Information Warehouse for analysing and reporting purposes, and enables them to share this data with other workers across an organization. It consists of a number of components making up Business Objects itself and WebIntelligence, an end-user ad hoc query, reporting, and analysis tool which works over the Internet.

Both Business Objects and WebIntelligence consist of a number of integrated modules that enable users to access data, generate reports, perform multidimensional analyses and to share information with other users.

Companies can start with the basic functionality and can add functionality in the course of time by acquiring additional modules. They can also choose complete functionality by acquiring the total Business Objects' business intelligence suite.

- BusinessObjects: a complete e-business intelligence software solution which include query, reporting, online analytical processing for the end user and administration tools that enable information technology professionals to setup and deploy across the enterprise
- WebIntelligence: based on a distributed-component architecture, it helps companies extend their business intelligence capabilities via Internet and extranets to suppliers, business partners and even customers - with the associated cost minimization of Internet-based roll-out.
- Infoview: an e-business intelligence portal that allows users to view, search, open, print, refresh and read reports. Infoview is particularly useful for users who only need a basic level of e-business intelligence functionality, as well as for large companies who want to deploy reports to a large number of users across the enterprise.
- Reporter: a module for ad hoc query and reporting that can be added to Infoview to enable end users to retrieve information and build their own reports, which can include a variety of multi dimensional charts and graphs.
- Explorer: an online analytical processing module that can be added to Infoview to enable end users to conduct integrated multidimensional analysis of data, such as slice and drill directly in reports.

Financials

Improve access to financial information, automate to help reduce costs...

Financials consists of:

- **BaanERP Financials (Dynamic financial management and reporting)**

○ **General Ledger**

At the heart of BaanERP Financials is the General Ledger (GLD). It defines fundamental information about your company structure and the chart of accounts. The accounts and dimensions defined here are used throughout the system.

All transactions made in BaanERP Financials and integrated functional packages are stored in the General Ledger. Transactions that originate in other modules are generated automatically, based on a flexible mapping system that uses fields such as items, business partner, project and area to determine the proper place to post the transaction.

○ **Accounts Receivable**

The Accounts Receivable (ACR) module handles sales invoices and credit notes. It includes full aging analysis functionality, the ability to create Dunning Letters (urging customers to pay their open invoices) and Customer Statements of Account, which tell customers about their open invoices.

Deep reporting functionality is available for ACR data. For example, the Customer Credit Profile lets you compare a business partner's outstanding orders and invoice amounts with their credit limits, while the new Credit Analyst function lets you designate employees to monitor the credit levels of a business partner.

○ **Accounts Payable**

The Accounts Payable (ACP) module helps reduce the time and effort spent handling accounts payable. ACP streamlines the entire process by providing both automatic and manual matching capabilities within specific tolerances. You can specify different methods of payment for each business partner, monitor debts and record invoicing and payment transactions.

○ **Cash Management**

The Cash Management module (CMG) helps your company manage its cash position. It provides cash forecasting reports that consider open orders and invoices from both purchasing and sales.

Within CMG, payment statistics are calculated for business partners and all receipts payments are processed. The system also provides cash flow forecasts to analyse liquidity positions and transaction visibility at the sub ledger level.

○ **Financial Budget System**

BaanERP Financials provides a Financial Budget System (FBS) that allows budgets to be created based on cost assignments, other budgets or actual results. FBS maintains budgets and target amounts and provides comparisons between actual amounts and budgets.

Amounts and quantities entered in FBS are included in displays, reports and financial statements with related variance information. For even more extended

budgeting capabilities, FBS is integrated with the Hyperion Pillar Budgeting System.

- **Financial Statement Reporting**
Baan Financial Statement Reporting (FSR) is a graphical report writer that lets you aggregate and consolidate financial transactions to create financial statements on every desirable entity level, creating maximum flexibility in business performance management.
Actual and budget data can be composed on the same reports for control and reporting purposes. The reports also outputs to Excel for further processing and updates.
- **Fixed Asset Management**
Fixed Asset Management (FAM) is an integrated asset management solution for tracking, depreciation and administrative purposes. Assets can be acquired via Procurement solution or build internally as Construction in Progress project.
FAM contains an unlimited number of books and statutory depreciation methods used in countries across the globe. Deploy several depreciation and revaluation methods to maintain fixed assets from different business perspectives, e.g. a legal perspective, tax perspective or internal perspective.
Once an asset is capitalized, it can be transferred across multiple locations and companies. Standard tax reports for major countries are included with the product.
- **Strategic Enterprise Management (Planning, reporting, consolidation)**
 - **Financial Analysis (Baan Business Intelligence Solution)**
Baan Strategic Enterprise Management Financial Analysis lets your company make the right financial decisions based upon the right information, delivered on time. It frees financial information trapped in existing information systems and opens it up to a new world of financial and business analysis and knowledge management.
Based on the Baan Business Intelligence Solution (BaanBIS), this module allows financial managers to analyse and filter financial data with easy-to-use tools, build their own reports, merge information held in multiple applications into a central store, drill down into successive levels of analysis, and much more.
 - **Financial Consolidation (Hyperion Enterprise)**
Baan Strategic Enterprise Management Financial Consolidation draws on expertise from Baan technology partner, Hyperion. Hyperion Enterprise performs advanced financial data consolidation and reporting on actual and budget data exported directly from BaanERP Financials' General Ledger and Financial Budget System modules.
The data transfer is handled using a dedicated HyperionReady Interface, which provides predefined data extracts from Baan into Hyperion applications. You can also consolidate and report on data in Hyperion Enterprise while continuing to process transactions in Baan Financials.
 - **Financial Planning (Hyperion Pillar)**

Drawing on expertise from Baan's technology partner, Hyperion, the dedicated HyperionReady Interface provides predefined data extracts from Baan that can be used by Hyperion Software applications. You can export actual and budget account balances, as well as dimension information, from BaanERP Financials' General Ledger and Financial Budget System modules and import the data into Hyperion Pillar.

After you complete budget processing in Hyperion Pillar, you can transfer the final budget data back into Baan's Financial Budget System for further use within Baan. You can also budget and analyse your data on your Hyperion Pillar product, while continuing to process transactions in Baan Finance.

- **Central Invoicing (Automated multi-company, multi-site billing)**

BaanERP Financials features a new Central Invoicing package that centralizes billable data from all *Baan applications* and provides automated multi-company and multi-site centralized billing.

Templates allow you to select specific invoice lines from different applications to be combined in one invoice. As a result, your customers will receive one invoice instead of many different invoices, reducing costs and improving service.

The Sales Invoicing module in BaanERP Financials also supports Triangular Invoicing.

- **Procurement (Control supplier costs)**
 - **BaanERP Purchasing (Manage suppliers on price & quality, objectively and subjectively)**

BaanERP Purchasing lets you create and share an approved supplier list across your enterprise. The supplier list tells you who can supply the right items, in the shortest time, at the lowest possible cost.

It combines objective criteria (information on receipts, quality approval, invoicing and purchase order confirmation) with user-defined (subjective) criteria. Integration with Sales and other ERP planning engines avoids duplicate order entry and lets you focus your procurement specialists on more strategic activities.

The result is a system that helps you to make the right procurement decisions based on quality, price and delivery.
 - **Baan E-Procurement (Web-based self-service for indirect procurement)**

Using Baan E-Procurement, your company controls and delegates routine purchases to employees or individual requisitioners:

 - Delegation of requisitioning to user departments
 - Automated approval or approval routing for spending limit and budget control
 - Electronic catalogs with contracted prices and content management

The ordering and payment process is streamlined, and you can refocus your procurement professionals on more strategic activities like supplier selection and contract negotiation:

 - Purchasing analysis integration option
 - Integration with back-end ERP systems
 - **Baan E-Collaboration (Do business with partners through personalized web portals)**

Baan E-Collaboration provides personalized web portals through which your business partners interact. Documents like purchase orders, forecasts and shipping notices are published from an ERP system, using XML (eXtensible Mark-up Language), and stored in a document repository:

 - Collaborate on business documents online
 - Synchronize supply chain activities based on real-time web reports
 - Raise information visibility to speed cycle times, improve accuracy and reduce the overall cost of doing business.

The system notifies suppliers, customers or distributors by email and directs them to a secure web site to view, approve or import the documents into their back-end systems.

 - For complex issues, business partners can initiate real-time interaction using Microsoft NetMeeting
 - Self-service lookups provide access to supplier information, purchase orders and current status, purchase order history and current balance and payment history.
- **Cost Management (Handle changing cost structures)**
 - **Cost Accounting**

The cost break down structure in the Baan Cost Accounting (CST) module is composed according to the Bill of Material (BOM), Bill of Operations (BOO) and Bill of Activities (BOA). Surcharges can be added at any level in the structure. The surcharges for overhead costs can be applied at inbound of outbound of the warehouses and the shop floor, so the costs are accurately updated for different overhead surcharges at the time the overhead costs are applicable.

Several reports are included in this component for cost control tracking for shop floor orders, projects and other work orders to provide the user accurate Cost Management capabilities.

The Cost Management (CAT) module adds the capability to allocate overhead and other indirect costs to the existing direct cost break down structure for optimal cost and performance measurement. Those cost-assignment amounts are calculated based on amounts or quantities - for example, a fixed amount to be allocated periodically or the square footage of office space used by a department.

BaanERP Financials uses a parent/child relationship for financial data, which provides the ability to 'drill down' to the necessary level of detail. On each level, the actual, budgeted and allowed costs are reported. Amounts that have been recorded for a particular cost center, project, or other costing dimension can be re-allocated automatically by CAT - for example, for costs like facilities or information services that must be spread over the departments that are supported.

- **Activity Based Costing**

This module lets you assign amounts for Activity Based Costing with cost objects from within BaanERP Financials. Surcharges calculated with Activity Based Costing can be posted back to Baan Manufacturing or transferred to the Item Cost Breakdown structure or Project Breakdown structure as part of the cost of an item or project.

Cost-assignment amounts are calculated using dynamically calculated cost drivers, such as number of order lines, number of receipts on the dock for a certain item or other types of occurrences in operational environments that are indicators for adequately calculating overhead costs.

Manufacturing & Distribution

End-to-end manufacturing management in an open, integrated environment...

Manufacturing & Distribution consists of:

- **Product Configuration (Configure the right product at the right price, first time, every time, in Baan ERP)**

Based on a simple 'Question and Answer' type of exercise, a customer specific variant of the product is composed based on a generic product model that contains all possible selections.

Product models can contain descriptions in multiple languages, thus raising consistency and reducing maintenance by allowing a single model to be used in multiple languages or countries

Fully integrated with BaanERP so that product variants can be used in sales orders, quotations, budgets or projects

Customer specific manufacturing projects are generated based on the wishes of the customer. These projects contain the necessary product as well as process information to build and deliver the product

Customer demand can always be fulfilled by allowing specific changes to be made to the automatically generated Bill of Material or Routing, thus moving smoothly from an Assemble-to-Order / Make-to-Order into Engineer-to-Order type of situation

- **Enterprise Planning (Plan to meet customer expectations, profit, production and lead-time objectives)**

Baan Enterprise Planning is a customer-responsive system, with advanced multi-level available-to-promise (ATP) and capable-to-promise (CTP) capabilities.

It lets you to model the entire supply chain, from customers and suppliers to production and distribution operations. It lets you define preferences and relationships between these entities, creating a supply network that reflects the way your business operates. And it gives you visibility of manufacturing and distribution planning activities across the supply chain:

- Make intelligent decisions based on flow of goods throughout the enterprise
- Visibility extends from original customer requirements to raw material supplies
- Increase responsiveness, cut lead times & inventory, reduce 'nervousness' in the system
- Develop a master schedule using forecasts, actual demand, or both - at any level of the product structure

For companies that require advanced planning and scheduling, Baan Supply Chain Solutions offers additional capabilities that include a high performance constraint-based planning engine, fully integrated with the Baan Enterprise Planning and Baan Manufacturing.

- **Manufacturing (From engineer-to-order to mass production and mass customisation)**
 - Full support for complex multi-site Hybrid manufacturing environments: discrete & non-discrete; Make-to-Stock, Make-to-Order, Assemble-to-Order as well as full Engineer-to-Order
 - Fully integrated with e.g. the Baan Procurement, Finance as well as Sales modules for integrated and seamless process execution
 - Engineering change control automates ECO approvals and implementation while the system's open architecture simplifies integration with popular CAD packages for seamless information exchange between production and engineering
 - BaanERP Manufacturing features a new approach to planning that goes beyond the capabilities of traditional ERP systems: Enterprise Planning
 - Product Configuration is a valuable tool for implementing today's high-product mix, low volume manufacturing strategies. With a minimum of effort and the assurance that the resulting configuration is correct, businesses can create and execute customized products further reducing time to delivery

- **Warehouse Management (Warehousing agility to fulfil customer commitments)**

Once your organization and supply chain have been mapped using Baan Supply Chain Solutions, Baan Warehouse Management looks after the operational and tactical processes within your supply chain:

Baan Warehouse Management is component-based. Each component is used centrally by production, sales, purchase, projects and service departments in your company to inform customers about where goods are located, in what volume, what's available to them, and projected delivery schedules. These components are:

 - Inventory Planning
 - Inventory Handling
 - Inventory Reporting
 - Inventory Analysis
 - Lot Control

Baan Warehouse Management integrates with financial tools to provide greater insight into enterprise-wide costs. It also interfaces to dedicated Workflow Management Systems such as BaanDEM Workflow for especially complex warehousing requirements. If required it is possible to interface Baan Warehouse Management to third-party WMS applications

- **Total Quality Management (Manage and control quality throughout the supply chain)**

BaanERP TQM consists of three main modules:

 - BaanERP TQM for Research and Development (R&D)
 - BaanERP TQM for Quality Assurance and Quality Control (QA/QC)
 - BaanERP TQM for Health, Safety and Environment (HSE)

These modules, combined with BaanERP, provide integrated quality management support for business processes such as:

 - Vendor Monitoring and Inspection of Incoming Goods
 - Laboratory Information Management (LIMS) including connection of on-line laboratory instruments and in-line measuring devices
 - Quality Assurance and Quality Control (QA/QC)
 - Research and Development (R&D)

- Optimisation of Recipes or Formulas
- Quality Tracking and Tracing
- Customer Complaints Tracking

- **Tools (Flexible development environment for Baan applications)**
 - Baan Tools allows the creation of all software components needed, support for complex version control mechanisms, the creation of all related documentation as well as the translation of the applications in different languages. Baan Tools is fully multi-byte enabled.
 - An easy to use report writer is included to create the information needed for your end users. For complex reporting needs the Baan Tools are fully integrated with the state-of-the-art reporting tools of Seagate Software
 - A 3-tier runtime environment allows the applications to be run without adjustments on several platforms and databases. This runtime environment delivers excellent performance and is scalable to thousands of concurrent users
 - The front end of applications developed with Baan Tools can run on the MS Windows platform and in a browser. Baan has developed a special product, called Webtop, which fully utilizes XML and DHTML techniques to present the user with a flexible, intuitive and easy to use Graphical User Interface. Webtop reduces the Total Cost of Ownership by allowing an easy deployment of clients on the network
 - A role-based vertical portal is available for easy access to all business applications the user needs to perform his or her tasks. Worktop for Windows based clients, as well as Webtop for thin clients, can disclose information from all kinds of different business applications
 - Forms within these applications are dynamically generated. This allows them to be adjusted on the fly to tailor for specific users needs, showing only the information needed and raising productivity.
 - The use of electronic messaging techniques (such as e-mail, fax, telex & SMS) is seamlessly integrated into Baan Tools. This allows all Baan ERP applications to take advantage of these messaging techniques
 - For high-level data replication Baan Exchange is available. This tool can replicate directly to the database based on rules or can utilize the business logic of the applications

Migration

Fast, risk-free upgrades...

Baan Migration solutions include the methodology, tools and services you need to ensure a smooth and reliable transition to your specific solution. It makes the decision to upgrade or expand your business easier because it is cost-effective, fast, secure and predictable.

The Baan migration methodology is totally aligned with customer needs following extensive research into the issues and concerns that industry has encountered with migration in the past. This methodology has two aims: to structure the migration process for maximum control and accuracy; and to reduce the time needed for the migration. It describes every part of the migration process including required activities and responsibilities, and can be considered as five distinct phases:

- Migration Assessment - an analysis and complete inventory of your environment, including organization, business process, infrastructure, technical architecture and financial
- Migration Architecture - defines the project plan, as well as the business, functional and technical design
- Migration Preparation - prepares your hardware, software and customisations for conversion; and tests for the conversion
- Migration Execution - executes the live data conversion
- Consolidation and support - stabilizes the new environment via migration support and end user training

OpenWorld

An advanced integration framework for e-Business and integrated enterprise applications...

OpenWorld consists of:

- **Baan OpenWorld (Create a seamless environment for e-Business)**
Baan OpenWorld provides integration between Baan products, legacy systems and third party applications. It's a powerful integration framework that transforms disparate applications into a seamless environment for e-Business:
 - Web-enabled business processes
 - Helps transform your enterprise into an e-Business
 - Makes maximum use of existing messaging technologies

Baan OpenWorld uses an open, message-based architecture with XML (eXtensible Markup Language). This makes it easier to integrate back-end systems and client applications, or extend your systems with new components.

- Addresses business process and application levels of integration
 - Easy automation of central data management
 - Supports collaborative commerce and mobile commerce models
-
- **BaanDEM Enterprise Modeller (Strategic modelling, business process reengineering & automated application configuration)**
Enterprise Modeller is used as an implementation tool, a business process-reengineering tool, and the basis for end-user desktop generation:
 - Reduces implementation time
 - Increases quality of implementation using best practice models
 - Covers most generic production and distribution environments

Enterprise Modeller captures all business process-related logic in your organization. The resulting graphical model gives you a strategic visualization of your business-by-business case and process flow. This model drives the development of your enterprise information systems, business processes and strategy.

- **BaanDEM Workflow (A powerful business process control system running across integrated applications)**
BaanDEM Workflow allows you to start a business process via a certain employee, or automatically, or as a condition of another process. It distributes process activities to authorized users, monitors target dates and deadlines, initiates events at deadline, and provides documents and data related to those activities. BaanDEM Workflow is a standalone software component that can be integrated with BaanERP as well as BaanIV. For existing DEM users, business process models can be easily enhanced with Workflow properties.

Product Lifecycle Management

Manage and control all your Engineering and Product Data Management...

Product Lifecycle Management consists of:

- **BaanPDM (Provides a comprehensive integrated PDM solution for Baan IV and BaanERP 5.0 systems.)**

BaanPDM facilitates comprehensive control of all design data throughout the product life cycle, starting from the initial product design in an organization's CAD system. BaanPDM facilitates the management of complex inter-relationships between all types of product design data. BaanPDM streamlines the engineering-to-manufacturing process by providing an integrated suite of Document Management, versioning and change control, as well as product structure and workflow management capabilities.

- Streamlines engineering-to-production processes in both BaanIV and BaanERP 5.0 environment via the PDM-ERP Gateway product
- Provides secure online access to globally distributed product information repository
- Enables simultaneous up-to-date sharing of identical product information
- Automates engineering approval and change management procedures (ECO/ECN)
- Eliminates multiple data entry points and data redundancy risks

- **BaanODM (Provides a fully embedded Document Management, Change Management and Folder Management capabilities in BaanERP 5.0)**

BaanODM provides embedded document management, folder management, change management and graphical navigation services right within the BaanERP environment. BaanODM allows you to link any entity in ERP to the Document, Folder or Change, which are the classical entities of the Product Definition.

- BaanODM is written in the BaanERP environment, allowing BaanERP users easy access to any document from any Baan entity in a globally distributed setup
- These embedded services allow you to link any Baan entity to any ODM entities without having to define this link type in advance. ODM eliminates data redundancy by providing a data repository for ERP
- Enables simultaneous up-to-date sharing of identical product information

Sales

Increase revenues, create customer loyalty and be responsive to your customers...

Sales consists of:

- **BaanERP Sales (Manage sales strategy, even in complex environments)**
Sales order management is your company's most important point of contact with its customers. BaanERP Sales gives your sales department the tools to sell successfully in increasingly complex environments, to increasingly demanding customers:
 - Manage sales strategy
 - Manage quotes, orders, contracts, prices and discounts
 - Anticipate and respond to changing business conditions

- **Baan E-Sales (Build a business-to-business, unassisted selling network)**
Baan E-Sales delivers product information to customers and channel partners through multimedia catalogs. It features a complete set of administrative tools to manage security, user personalization and catalog content.
 - You customers have 24x7 access to negotiated pricing, inventory availability, accurate order estimates, order placement and tracking
 - Self-service lookups are available to show order history, status and product availability
 - For complex product sales, Baan E-Configuration is available as an add-on, allowing customers to configure and purchase products online according to your business rules

- **Baan E-Configuration (Configure, purchase and deliver 100% accurate products through a web browser)**

 With a minimum of training, and no programming required, Baan E-Configuration lets your product/service experts create models of your product offerings - including all variations, mandatory/optional/exclusive rules, prices and interdependencies. The engine integrates with your Baan or third party ordering system to ensure complete accuracy for simple or the most complex products and services.
 - Any user can configure a product or service online or onsite with a standard web browser
 - Sell a wider range of products without increasing costs or losing control
 - Increase customer fulfilment through choice, quality and service
 - Reduce waste and re-ordering costs
 The user might be an online customer, a business partner, field salesperson or call centre operative. They can experiment with different configurations, compare options, prepare orders and identify spares and accessories through a single, simple web interface.
 You can make different subsets of models available to different audiences, such as distributors and resellers, or different geographies. Flag related accessories and spares in the model to promote up-selling and cross-selling. And when you need to change a product offering, the updated central model is instantly available to all of your users.

- **Baan iCRM (Fully integrated CRM to customer fulfilment from a single vendor)**
 - o **iCRM-Sales (Increase effectiveness and productivity of all sales channels...)**

iCRM-Sales enables management of business opportunities, account information and multiple sales channels. iCRM-Sales increases the effectiveness and productivity of all sales channels, enabling more face-to-face selling time with the customer; better communication among field sales, telesales, and marketing; a shorter sales cycle; and a higher close ratio.

- Supports multiple sales channels including direct, indirect, or partner selling models
- Incorporates specific selling methodologies, such as Kappa, Holden, or Miller-Heiman
- Unique, visual sales funnel representation manages the sales processes and interactions during all phases of the sales cycle

o **iCRM-Marketing (Design, manage and analyse marketing campaigns for multiple audiences and channels...)**

- Campaign management, including budget management & workflow coordination
- Campaign execution, including lead aggregation and lead qualification
- Sophisticated telemarketing capabilities through CTI integration
- Inbound/Outbound customer list management
- Event organization & management, including list creation and event promotion

o **iCRM-Pricer (Model and manage complex pricing structures...)**

iCRM-Pricer is a product that enables other applications, such as iCRM-FrontOffice, to embed complex pricing as part of their functionality.

iCRM-Pricer is made up of components that can be used to create a price model, compute prices based on the model, and provide pricing data to a client application such as the iCRM-FrontOffice worksheet.

o **iCRM-Configuration (Close more business at the point of sale with 100% accurate product configuration...)**

iCRM-Configuration is a revolutionary step forward in sales configuration, allowing sales representatives to quickly assess customer needs and tailor complex product and service configurations to meet those needs. Using the same advanced configuration technology available in Baan's E-Configuration solution for the web, iCRM-Configuration delivers the same benefits across multiple sales channels.

- Unique constraint-based configuration engine
- Real-time validation
- Customer needs Analysis
- Automatic quote and proposal generation
- Advanced pricing and discounting
- Designed for back-office integration
- Marketing encyclopaedia / electronic catalog
- Multiple language and currency support
- Remote synchronization

o **iCRM-CustomerInteraction (Revolutionary communications control - inbound, outbound, e-mail, Web Chats, Web Callbacks, fax, voice mail...)**

iCRM-CustomerInteraction is a revolutionary innovation in call centre communications and control, extending the boundaries of the customer-agent interaction to support a wide range of contact types in a completely integrated environment.

iCRM-CustomerInteraction's patented solution provides Total Interaction Management (TIM™) through the most comprehensive set of tools on the market for inbound and outbound calls, e-mail, Web Chats, Web Callbacks, fax, and voice mail.

- Routing
- Queuing
- Tracking
- Reporting

The iCRM-CustomerInteraction solution transforms the call centre into a true business interaction centre with features unique to the industry.

Service

Automate field service to increase customer satisfaction, productivity and profitability...

Service consists of:

- **ERP Service (Automate field service operations)**
BaanERP Service optimises the allocation of technicians and parts to control preventive maintenance and repairs to customer equipment. It supports call centres, including entitlement verification and problem resolution. It manages service contracts & warranties, spare parts inventory and tools in warehouses and service trucks:
 - Integrates service with other enterprise functions
 - Enables Product Lifecycle Management
 - Easily adapts your processes to changing business needs

- **E-Service (For proactive support operations)**
Baan E-Service gives your support operation a proactive makeover, using the Web to dramatically improve the service level you offer. Giving your customers the ability to log problems, initiate service requests and monitor their status at any time over the Internet:
 - Improve customer satisfaction
 - Increase productivity
 - Increase revenue per field service engineer

- **E-Service Remote (Web-based proactive service in the field)**
Once an engineer has service order information they are able to operate independently, storing information about jobs in progress on a notebook computer, PDA or desktop. Order completion data is uploaded to your central point of control after completion of one or more jobs. This reduces the time for processing service reports in your back-office, resulting in increased productivity, faster invoicing and better cash flow.

- **Customer Interaction (Revolutionary communications control - inbound, outbound, e-mail, Web Chats, Web Callbacks, fax, voice mail...)**
Customer Interaction is a revolutionary innovation in call centre communications and control, extending the boundaries of the customer-care representative interaction to support a wide range of contact types in a completely integrated environment.
 - Handles customer requests from the arrival of an interaction to the final wrap-up
 - Identify customers and their needs through interactive voice response (IVR) and e-mail parsing
 - Ensure an optimal path for every interaction with Intelligent queuing and data-directed routing
 - Create a complete, customisable picture of call centre operations for all levels of management using web-based administration, real-time monitoring, and the comprehensive decision management

- **Service Scheduler (Advanced planning and scheduling of service & maintenance operations)**
Service Scheduler is the next generation of interactive planning and scheduling systems for equipment-related service & maintenance. It lets you take a new, more professional approach to planning and dispatching - giving back the freedom for growth where you were previously constrained by the limits of your control.

- Service Scheduler makes the process of planning and dispatching quick, easy and hassle-free
- At a glance, Service Scheduler gives your dispatcher full insight into work at hand
- It matches the process of planning and scheduling with customer expectations and equipment criticality
- Integrating resources and skills availability into the dispatching process
- Service Scheduler supports planning with analysis of forecasted work by timeframe, job type, skill requirements, and geographic territory...
- ...so you have the right workforce capacity in place, every time

Supply Chain Solutions

Agility and customer-centricity across the supply chain...

Supply Chain Solutions consists of:

- **Strategic Supply Chain Network Design**

o **BaanSCS Designer (Model your supply chain)**

Designer is an easy-to-use, graphical strategic decision support tool that lets you model a global supply chain network:

- Consider transportation, inventory, and manufacturing dependencies when locating and sizing facilities
- Incorporate the complex costs, revenues and constraints of your unique supply chain
- Allocate appropriate resources, analyse service levels, define optimum transportation and inventory strategies

o **BaanSCS Coordinator (Combine financial objectives & resource constraints in supply chain planning)**

Coordinator is ideal for supply chain problems involving seasonal changes in demand and resulting production changeover costs and setup times. It lets you optimise the tradeoffs between production, inventory and transportation over multiple time periods.

Flexible, time-phased modelling allows you to incorporate the unique costs, revenues, and constraints of your manufacturing and distribution processes. Point and click integration with BaanSCS Designer lets you establish a tactical plan based on an optimal supply chain.

o **BaanSCS Planner (Develop manufacturing plans to meet customer demand)**

Planner allows companies to consider the costs, resources, capabilities and constraints of suppliers, manufacturing facilities and distribution centres, along with demand forecasts, to develop a manufacturing plan that meets customer demand profitably and efficiently:

- Continuous synchronization of manufacturing, distribution & demand
- Simulate scenarios, consider constraints, and analyse results
- Easily recreate your plan as conditions change

- **Demand Management**

o **BaanSCS Demand Planner (Collaborative demand plan development, plan monitoring, and event planning)**

Use Demand Planner to forecast demand for events, promotions, and new product releases. The system is capable of analysing and modelling thousands of different demand patterns. This makes it particularly valuable for companies that produce multiple and/or competing product lines.

- Minimize stock-outs, maximize sales
- Enhance customer-centricity
- Improve the bottom line

A partner product, Demand Partner, extends the collaborative planning process to the Internet. Demand Partner enables real-time trading partner collaboration, and supports internal coordination with marketing, sales, logistics, and

manufacturing. Remote users access Demand Planner's facilities through an Internet browser, with no additional software.

- Remote access improves internal and external collaboration
- Maintain stock in the right place at the right time
- Minimize inventory

- **Supply Chain Planning & Order Fulfilment**

- **BaanSCS Planner (see above)**
- **BaanSCS Order Promising (Maximize order fulfilment capabilities, schedule on-time delivery)**

Order Promising gives planners real-time access to essential data needed to make accurate order commitment decisions. You know immediately which orders you can fulfil completely, and which orders can be fulfilled in part or at a later date.

- Order promising is the most important customer commitment you make
- Order promising capability is a competitive differentiator...
- ...and a necessity for e-business

Order Promising gives you a best-case scenario to stabilize production schedules based on Available-to-Promise, Capable-to-Promise, and automatic order reservation for your various customer channels.

With on-line access to ERP and planning systems, Order Promising allows businesses to accept or refuse orders decisively, and establish reliable performance by providing accurate dates and quantities for delivery.

- **Factory Scheduling & Execution**

- **BaanSCS Scheduler (Schedule and coordinate plant activities with market demand)**

Scheduler matches customer orders with resources to generate a production schedule based on current resource availability. Powerful models simultaneously process the capacity, availability, qualifications and interdependencies of employees, machines, tools and materials:

- Change production schedules in response to customer demand
- Identify potential problems and production bottlenecks
- Promote efficiency for mass customisation

- **Logistics Planning**

- **BaanSCS TransPro (Optimize transportation planning and operational decision-making)**

TransPro lets you manage even the most complex transportation plans with scaleable, intelligent planning tools. It is the only transportation system that can weigh common carrier costs against true dedicated/private fleet costs.

Interactive map-based graphics allow users to visualize transportation plans.

This makes it easy to understand and change a plan, illustrate costly orders and underutilized resources, and quickly identify opportunities to improve your operations.

TransPro features a wide variety of rating data structures and a memory-resident rating engine for fast, flexible costing of shipments.

- **BaanSCS RoutePro (Effective vehicle routing and scheduling reduces costs, improve service)**

RoutePro is a suite of components that address strategic and operational routing requirements:

RoutePro Designer

- Strategic tool with powerful routing analysis features
- Optimize fixed or master routes, design and align customer territories, size fleets
- Analyze customer service frequency
- Play out the effect of strategy changes on dispatch operations before actual implementation

RoutePro Dispatcher

- Operational tool for the routing and scheduling of transportation assets
- Usually private or dedicated trucking fleets
- Adapt plan from RoutePro Designer to daily fluctuations
- Or build routing plans from scratch
- Dispatch fleets, monitor and react to changes
- Track and measure performance
- Capture information for strategic route planning

RoutePro Residential

- Industry Template optimized for routes that cover a large number of customers in a concentrated area

RoutePro Replenisher

- Extensive routing and optimization tool for companies that manage their customers' inventories

RoutePro Vessel

- Industry Template optimized for routes built over marine shipping lanes

o BaanSCS BidPro (Standardize the carrier bidding process to save time and money)

Easy-to-use graphical modelling and analysis tools reduce expenses associated with high-volume transportation services, and let you form smart partnerships and service contracts with selected carriers.

- Powerful analysis and optimisation capabilities
- Accurately evaluate bids and associated business constraints
- Rapid ROI through cost savings in the short term
- Increased customer satisfaction boosts long-term profitability

Using a BidPro Excel template, shippers organize transportation requirements, including inbound and outbound shipping lanes, expected volumes, and performance expectations.

Shippers then email the template to carriers, who complete the worksheets with their bids. BidPro imports the bids into the model for analysis, enabling users to select the bids and carriers that meet service requirements at the lowest total cost.

- **Collaboration (Work with supply chain partners to get the right product to the right place at the right time)**

Collaboration is essential for effective supply chain management, and is a cornerstone of e-Business. Getting the right product to the right place at the right time depends on how well your company collaborates with its supply chain partners, locally, nationally and internationally.

Many companies use planning systems to help manage the supply chain, but generally these are used to optimise specific functional areas. Baan's Collaboration Solution takes collaboration to the next level: it lets you optimise supply chain performance across different functional areas, locations and trading partners for your whole 'extended enterprise'.

- Integrate with e-Commerce
- Extend your supply chain beyond your enterprise
- Share and build information repository
- Increase the speed of material flow from supplier to consumer

BaanERP Project

BaanERP Project manages every aspect of your Company's projects and contracts...

BaanERP Project consists of:

- **Project Definition**

Define a project and all the related project data, such as classification information, Contractual data and Invoicing, Budgeting and Planning methods to maintain project status:

- Use project templates to quickly create new projects - supports copying of project-related data from a source project to an existing target project or a new project
- Financial fields decide the specific integration with the general ledger and its dimensions in Baan Finance
- Link asset numbers with asset extensions for internal projects
- Manage the project archiving process
- Define project-specific resources, such as Project Materials or Equipment, when budgeting, costing, planning and scheduling must be limited to a single project

- **Project Budget**

Defines the Project Element Structure to model the breakdown of a project in its constitutive components:

- Bottom-up budgeting functionality, based on the assignment of resources to project elements and activities (resources include Material, Labor, Equipment, subcontracting and Sundry Costs).
- This functionality is supported by multiple coding systems, overhead allocation and integrated Budget Cost Analysis functionality
- Top-down budgeting functionality, based on the definition of top-level budgets, management reserves and allocation of distributed budgets to lower levels of the project breakdown structure
- Top-down and bottom-up budgets can be compared easily to ensure a good match between resource allocation and budget allocation
- Manages Budget Versions, Baselines and time phased budgets (Budgeted Cost of Work Scheduled) supported by various earned value methods, including % complete, Apportioned Effort (AE) and Level Of Effort (LOE)
- Contractual Extensions: Customer Change Orders can be budgeted and accounted for separately through the use of Extensions. This allows separate invoicing of costs incurred

- **Project Planning**

- Define activities, milestones and Charge Elements (the Work Breakdown Structure, or WBS)
- Charge Elements can be linked to the Organizational Breakdown Structure (OBS) to define responsibilities
- Define your execution plan for the project with alternative scenarios that can be used to simulate alternative execution strategies
- Record Multiple Schedule Baselines to keep track of the evolution of the project schedule
- Completion of manufactured project assemblies or subassemblies can be tied to Milestone progress, for vertical integration between the manufacturing schedule and project schedule

- Activities at any level of the Charge Breakdown Structure can be linked to projects on an external, PC-based scheduling system, such as Welcom Software's Open Plan Professional and Microsoft Project. Schedule and resource assignment data are seamlessly exchanged.
- Trigger project installment invoicing via activities and milestones
- Analyze time-phased financial performance of active or simulated projects through graphs that detail Budgeted Costs (BCWS), simulated cash flow, commitments, Actual Costs (ACWP), Earned Value (BCWP) and actual as well as planned revenues
- **Project Requirements**
Manages the generation of Materials (purchased, manufactured or from inventory), equipment and subcontracts:
 - Uses an advanced Project Requirement Planning (PRP) engine, integrated with Baan's Supply Chain Planning (SCP) engine, to generate planned orders for the Project Supply Chain (warehouses, business partners or production sites) according to existing stock levels, procurement policies and manufacturing capacity
 - Planned Orders are generated automatically on the basis of material resources assigned to the project. Warehouse replenishment orders, purchase orders or purchase requisitions are generated after confirmation and release of the Planned Orders
 - Items that need to be manufactured can be linked easily with the Project Control System module in Baan Manufacturing
 - Generic items can be configured easily through Baan Configurator modules
 - Materials can be delivered directly on site for immediate installation, or temporarily stored in a staging project warehouse
- **Hours Accounting**
 - Set up Rates and Labor Wage Components
 - Register Hours Accounting transactions
 - Set up Hours Budgets and reconcile actual hours with budgeted hours by week, month, quarter or year
- **Project Progress**
Stores all information concerning the actual execution of a project. Costs and revenues are stored in a project cost ledger that provides a high level of detail for each transaction:
 - Actual Material Costs and Commitments (on Order and Accrued Costs) are automatically updated through integration with Baan Order Management and Warehousing Modules
 - Actual labor hours and costs are updated through integration with the Hours Accounting Module
 - Surcharges can be recorded manually, or automatically generated on several levels
 - Confirmation process lets you control actual costs and commitments on the project in detail
 - Actual revenues, costs and commitments are updated to the general ledger in BaanERP Finance
 - Multi-level registration of production completion, including partial or total completion of activities and milestones

- Supports Cost of Goods Sold and Revenue Recognition per project
- **Project Monitoring**
Monitor the performance of each project through on-line queries or reports:
 - Monitor project-specific Cost Breakdown Structures and report of revenues, budget and cost data against standard and project-specific cost objects
 - Performance Measurement includes Budgeted Costs (BCWS), Actual Costs (ACWP), Earned Value (BCWP), Cost Variance (CV) and Schedule Variance (SV) - calculated for each project and for each level of the WBS
 - Several progress reports are available for project managers, cost account managers and department managers
- **Project Invoicing**
The Project Invoicing Module is tightly integrated with Baan's Central Invoicing Module to provide contract invoicing functionality, tailored for project environments:
 - Select an invoicing method for each project. Invoice amounts are then calculated (with full multi-currency support) and posted to the Central Invoicing Module, from which the invoice can be released to AP and sent to the customer
 - Invoicing Methods supported include Fixed Price (installments based on progress, milestones or a predefined schedule) or Cost Plus (Cost Reimbursement or Unit Rate)
 - Customer Advance Payments and Retention Transactions can also be accounted for
- **Master Data Management**
Manage data that is not project-specific, such as:
 - Company resources
 - Item Master
 - Organizational Breakdown Structures (OBSs)
 - Cost Elements
 - Surcharges
- **Baan Service Integration**
 - Transfer a Project Structure into a Service Configuration

Appendix H: 'Baan's applications II'

iBaan Collaboration

iBaan Collaboration content helps customers build collaborative applications using open components that can be configured for a specific business and technology environment...

iBaan Collaboration consists of:

- **Supply Chain Monitor** (visibility and intelligent monitoring of extended supply chain activity)

Supply Chain Monitor provides intelligent visibility and activity monitoring across the extended supply chain. Users can configure their own views, drilldowns and alerts to create a custom application to support their specific role in the value web. Supply Chain Monitor updates its display in real time with events and alerts from multiple systems, including enterprise resource planning, transportation management systems, advanced planning systems and manufacturing execution systems.

- Significant increase in the velocity of information - helps shorten decision cycles and lead times across the value web
- Consolidation of data and easy access to information helps synchronize business users
- Real-time monitoring and notification of supply chain performance enables management by exception

Users can also make complex queries on the current status of various business objects. These queries are sent to the appropriate status servers or applications tied to iBaan Collaboration, and the results are returned and displayed in the Monitor.

- **Collaborative Supply Planning** (synchronize direct material requirements with dynamic demand through multiple tiers of suppliers)

Collaborative Supply Planning accelerates the flow of information - and as a result material -between business partners in the extended supply chain. The template supports collaborative planning for direct materials at the operational and tactical planning levels. Business partners can share information and negotiate supply at the forecast, capacity, production schedule, purchase order and material release stages. Agents for the RFQ/Quote process enable supply chain partners to respond rapidly to urgent requirements.

- Significant improvement in the velocity of information, and as a result in material flow among partners
- Extended visibility of demand helps improve partners' planning processes, allocation of financial resources and reduction of costs
- Increases your ability to respond to market dynamics, react faster to shifting customer needs and to cope with inevitable day-to-day disruptions in the supply chain

The result can be a dramatic improvement in the ability of business partners to balance supply and demand - allowing them to capitalize on more market opportunities with fewer wasted resources.

- **Collaborative Inventory Planning** (improve flow of material and information between enterprises)

Collaborative Inventory Planning supports a real-time, vendor-managed inventory process between a company and its corporate customers. A customer

tells their supplier about material or product requirements, and gives information about material or product inventories such as on-hand inventory, inventory targets and storage constraints. The supplier then assumes responsibility for managing the replenishment of material or product into that customer's network. This application template is designed to help reduce inventory, improve manufacturing and transportation efficiencies and increase the level of customer service provided by all business partners involved - and can help achieve:

- Real-time information sharing and alerts improve supplier response time, leading to more flexibility and agility in manufacturing
- Significant reductions in working inventory and improvements in customer service
- Significant improvement in the velocity of information and material flow
- Increased trust and more profitable relationships with business partners

An advanced Key Performance Indicator (KPI) engine maintains a real-time projection of inventory, and a replenishment agent constantly monitors inventory for problems. When a problem is detected, the agent automatically generates a recommended replenishment plan and sets up a negotiation session between the partners for its approval.

- **Collaborative Logistics Management** (inter-enterprise collaborative logistics planning)

Collaborative Logistics Management helps you synchronize and accelerate the logistic parts of the fulfilment process. This component supports collaborative planning between a shipper, its carriers and its customers. It gives logistics personnel real-time visibility and monitoring of product movement and handling and web-based load-tendering.

- Web-based load tendering helps extend a shipper's reach to a broader set of carriers
- Significant improvement in the velocity of information - helps reduce logistics costs
- Real-time information sharing and alerts help improve shipper response times, reduce lead times and improve customer service

Collaborative Logistics Management helps improve the agility and flexibility of shippers, reduce transportation lead times and costs, and raise the quality of service given to customers.

- **Collaborative Manufacturing Planning** (synchronize and accelerate information and material flow between multiple manufacturing sites)

Collaborative Manufacturing Planning synchronizes and accelerates the flow of information and material between multiple manufacturing sites. It includes synchronization of outsourced contract manufacturing sites. This component helps synchronize production schedules and material flow in a multi-tier manufacturing process, that can lead to reductions in inventory, improvements in manufacturing efficiencies and reductions in decision cycles and delivery lead times for customers.

- Significant improvement in the velocity of information and material flow through a multi-tier, distributed manufacturing environment
- Enhanced visibility of demand reduces disruptions to the shop floor, improves the planning process and helps lead to increased shop-floor efficiencies and cost reductions

- Improvements in access, quality and timeliness of information make it possible to reduce decision cycles and delivery lead times

- **Collaborative Forecasting** (improve inter-enterprise demand projections to drive supply chain planning processes)
Collaborative Forecasting is an inter-enterprise application component designed to improve the demand projections used to drive supply chain planning processes.
 - Make significant reductions in forecast errors - improve planning across the value web
 - Improve synchronisation between front-office and back-office processes.
 - Improve inventory turnover and reductions in obsolete and over-aged products
Collaboration occurs between a demand planner (forecaster) and internal or external parties who can add value in refining demand projections. These parties could include distributors, sales people or actual customers. Early identification of trends and potential problems improves agility and response time to customers.

- **Collaborative Demand Fulfilment** (inter-enterprise collaborative demand management synchronized with constraint-based fulfilment)
Collaborative Demand Fulfilment is an inter-enterprise application component. It is a tool designed to help improve the ability of an enterprise to make and deliver on commitments to customers - significantly improving customer goodwill.
 - Identify and propagate demand through the enterprise to improve agility and response time to customers
 - Improve asset utilization through constraint-based planning
 - Improve synchronization between front-office and back-office planning processes
Collaborative Demand Fulfilment supports collaborative planning between customers, customer service representatives and supply chain planners.

iBaan Webtop

iBaan Webtop is a new thin client architecture for BaanERP - gives users easy access to complex ERP data via a web browser.

iBaan Portal

Users can personalise their desktop working environment with information from multiple sources with the new iBaan Portal.

Appendix I: 'Baan solution checklist'

Solution	iPlan	iBuy	iSell	iMake	iMove	iService	iAccount	iBaan OW	iBaan Coll.	iBaan BIS	(A/E)
Manager	Ronald Teijken	Manuel Pumarada	Luuk Kornelius	Michel Chouinard	Marc Bles	Remco van Delden	Piet van den Bossche	Frank Hendriksen	Marc Bles	Bram van de Groep	
BIS	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁			X	
Seagate Info tm	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁			X	
Crystal Enterprise Solutions	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁			X	
ETL Modeler	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁			X	
Decision Manager Console	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁			X	
iBaan OLAP Client / Data Navigator	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁			X	
Business Objects	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁			X	

Solution	iPlan	iBuy	iSell	iMake	iMove	iService	iAccount	iBaan OW	iBaan Coll	iBaan BIS	(VE)
Financials							X				
General Ledger							X				
Accounts Receivable							X				
Accounts Payable							X				
Cash Management							X				
Financial Budget System							X				
Financial Statement Reporting							X				
Fixed Asset Management							X				
Financial Analysis							X				
Financial Consolidation							X				
Financial Planning							X				
Central Invoicing							X				
Cost Accounting							X				
Activity Based Costing							X				

Solution	iPlan	iBuy	iSell	iMake	iMove	iService	iAccount	iBaan OW	iBaan Coll.	iBaan BIS	(VE)
Procurement		X									
BaanERP Purchasing		X									
Baan E- Procurement		X									
<i>IBaan E-source</i>		X (Q4)									

Manufacturing & Distribution											
Product Configuration				X							
Enterprise Planning	X										
Manufacturing				X							
Warehouse Management					X						
Total Quality Management				X							
Tools											

Solution	iPlan	iBuy	iSell	iMake	iMove	iService	iAccount	iBaan OW	iBaan Coll.	iBaan BIS	(ME)
OpenWorld	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁	X			
Baan OpenWorld	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁	X			X
BaanDEM Enterprise Modeler	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁	X			
IBaan B2B Server (was E- Collaboration)	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁	X			X
Product Lifecycle Management				X							
BaanPDM				X							
BaanODM				X							
Sales			X								
BaanERP Sales			X								
Baan E-Sales			X								
Baan E- Configuration			X								
iCRM-Sales			X								
ICRM-Marketing			X								
iCRM-Pricer			X								
ICRM- Configuration			X								
ICRM-Customer Interaction			X								

Solution	iPlan	iBuy	iSell	iMake	iMove	iService	iAccount	iBaan OW	iBaan Coll.	iBaan BIS	(ME)
Service						X					
ERP Service			X			X					
E-Service						X					
E-Service Remote						X					
Customer Interaction						X					
Service Scheduler			X			X					
Supply Chain Solutions											
BaanSCS Designer	X										
BaanSCS Coordinator	X										
BaanSCS Planner	X										
BaanSCS Demand Planner	X										
BaanSCS Order Promising	X										
BaanSCS Scheduler				X							
BaanSCS TransPro					X						
RoutePro Designer					X						

Solution	iPlan	iBuy	iSell	iMake	iMove	iService	iAccount	iBaan OW	iBaan Coll.	iBaan BIS	(VE)
RoutePro Dispatcher					X						
RoutePro Residential					X						
RoutePro Replenisher					X						
RoutePro Vessel					X						
BaanSCS BidPro					X						
Collaboration					X						

BaanERP Project											
Project Definition											
Project Budget											
Project Planning											
Project Requirements											
Hours Accounting											
Project Progress											
Project Monitoring											
Project Invoicing											
Master Data Management											
Baan Service Integration											

Solution	iPlan	iBuy	iSell	iMake	iMove	iService	iAccount	iBaan OW	iBaan Coll.	iBaan BIS	(ME)
iBaan Collaboration	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁		X		
Supply Chain Monitor	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁		X		
Collaborative Supply Planning	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁		X		
Collaborative Inventory Planning	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁		X		
Collaborative Logistics Management	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁		X		
Collaborative Manufacturing Planning	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁		X		
Collaborative Forecasting	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁		X		
Collaborative Demand Management	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁		X		
iBaan Webtop	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁				X
iBaan Portal	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁	X ₁				
(iBaan ERP 5)	(X ₁)	(X ₁)	(X ₁)	(X ₁)	(X ₁)	(X ₁)	(X ₁)				

Remarks:

X = Core product of a solution.

X₁ = Non-core product of a solution, but essential.

Other products:

iAccount

- Hyperion Enterprise
- Hyperion Pillar

iMake

- Wonderware Factorysuite 2000 Intrack

iSell

- Baan DbSync
- Baan Knowledge Manager
- Baan Proposal
- Baan eCustomer Interaction
- Baan Outlook Interaction
- Baan Active Workbench
- Scribe Migrate for Baan Front Office

Appendix J: 'Baan's press release'

FOR IMMEDIATE RELEASE:**BAAN TO DEVELOP C-PROJECT VIRTUAL ENTERPRISE SOLUTION
TO EXTEND SUPPORT FOR ONE-TIME SUPPLY CHAINS**

- Builds on iBaan collaboration strengths using technology developed as part of EU-funded IMS Globemen project

Baan, the global provider of B2B collaborative commerce solutions, has announced that it is developing a new virtual enterprise collaborative solution – C-Project - building on its participation in the major European Union-funded IMS Global Engineering and Manufacturing in Enterprise Networks (Globemen) project. Through its powerful iBaan solution, Baan is already a leader in helping organisations in manufacturing, logistics, service and engineering markets to implement Internet-enabled integration, information and collaboration solutions worldwide. Now, with C-Project, the company is extending its collaborative capabilities with support for the new generation of organisations that are increasingly looking to manage the inter-enterprise delivery of information, goods and services across the one-time supply chains of constantly-changing Virtual Enterprises.

C-Project will become a core product for Baan's solutions approach for the Virtual Enterprise. It will provide organisations with the capability to manage the collaborative design, building and maintenance of dedicated supply chains for one-time product manufacture – such as the building of a ship, construction or heavy equipment building.

C-Project will handle the rapidly changing partnerships and new participants – each with their own levels of access to the virtual enterprise – as well as providing support for joint planning with and management of sub-contractors, and the operation of private marketplaces.

“Until now, most B2B enterprise solutions have either tended to focus on functional business areas such as sales or procurement, or addressed an extended enterprise operating across more stable business environments with scheduled and repeat events flowing through the supply chain,” commented Martin Ollus, from VTT, the technical project leader for the European Union's element of the worldwide Globemen project. “With Globemen we're starting

to address the changing requirements of manufacturers in the 21st century. For the first time, we're looking at how project-based Virtual Enterprises can come together, combining distributed core competencies and teams from many different partners, which form, reform and dissolve based on actual market needs and opportunities.

"We encourage the commercial development of Baan's C-Project approach, which uses a globally networked IT infrastructure to enable advanced yet temporary collaboration between main contractors, business units, subcontractors and suppliers. This temporary element differentiates a Virtual Enterprise from other more established co-operative relationships – such as supply chains and extended enterprises," he continued.

Rene Hollebrandse, Baan's Industry Director for Industrial Machinery & Equipment, added: "We're finding that the move towards Virtual Enterprises, and the need to support one-time supply chains is particularly strong in market sectors such as Construction Contractors and Heavy Equipment Builders who have a history of operating in ever-changing consortia and collaborating with many different subcontractors or business units. In addition, many of these organisations will need to operate in a number of these one-time supply chains at any given time, so we're developing C-Project as the core product for our next generation solution for the Virtual Enterprise. This builds on the EU-funded work we've carried out that focuses on Sales, Engineering and Inter-Enterprise Delivery across the Virtual Enterprise."

Odense Steel Shipyard in Lindø, Denmark, has a track record of innovation, building some of the world's first supertankers and developing the new generation of postpanamax container ships, including the 6,600 teu Sovereign Mærsk – the largest container vessel in the world. According to *Name, Title*, Odense Steel Shipyard: "We have concentrated on the latest methods and high efficiency in order to minimise our material costs, labour costs and overheads. In recent years, we have focused on the assembly of bought-in components, and we increasingly rely on sub-contractors and suppliers. During a period of one year, we place between 20,000 and 25,000 orders, so we welcome the introduction of approaches such as Globemen and solutions such as C-Project from Baan, which will support our ability to operate in Virtual Enterprises."

Globemen – Global Engineering and Manufacturing in Enterprise Networks - is part of the international IMS Intelligent Manufacturing System. Its goal is to define and develop the architecture for globally-distributed product lifecycle management, project and manufacturing management. Globemen solutions are created and demonstrated using state-of-the-art information technologies to support efficient human networking and collaboration in global, multi-cultural environments. For more information, please visit the Globemen web site at <http://globemen.vtt.fi>

The new iBaan suite of Internet-enabled collaboration solutions addresses manufacturing organisations' growing demand for tighter integration and full visibility across their supply chains. The suite combines proven Baan technology with important new developments that enable customers to take significant steps towards the seamless integration of systems and processes, provide end-users with personalised and easy to use information, and empower businesses to collaborate with their customers and suppliers over the Internet.

About Baan:

Baan helps companies to compete in the 'networked economy' with its ever-increasing demands for more information, integration and collaboration. Through its powerful new iBaan suite of Internet-enabled solutions, Baan is ideally placed to support organisations in the manufacturing, logistics, service and engineering industries as they move to integrate their complex processes, collaborate more closely with customers and partners, and provide employees with build-to-order shop floor data and supply information. Baan has more than 15,000 customer sites worldwide, and is part of the Invensys Software Systems Division - a global leader in the provision of e-business/automation solutions.

For more information, please visit <http://www.baan.com>

About Invensys plc:

Invensys is a global leader in the Automation and Controls industry. With its head office in London, England it operates in all regions of the world through four focused divisions – Software Systems, Automation Systems, Power Systems and Control Systems. With over 80,000 employees, the company's products and services range from advanced control systems and networks for automating industrial plants and controlling the environments of buildings, to electronic devices and controls found in residential buildings and light commercial applications, plus complete power systems for the telecommunications and information technology industries.