Chapter 2 Introduction to the ARIS Platform

In this chapter we give an overview over the ARIS Platform and the ARIS products. The structure of the book is described with advice for different reader groups.

2.1 Business Process Management with ARIS

In the first chapter we discussed the meaning and evolution of Business Process Management. We described the phases of the BPM lifecycle that represent a procedural model for real-life business process management and help to handle all BPM related tasks. The '*ARIS Platform for Business Process Excellence*' from IDS Scheer (Fig. 2.1) provides all the necessary tools to manage these BPM tasks and the related corporate information.

The ARIS products are aligned to the BPM lifecycle and offered in an integrated software solution grouped into four ARIS Platforms:

- **Strategy Platform**,
- **Design Platform**,
- **Implementation Platform**,
- **Controlling Platform**.

The system architecture of the ARIS Platform allows globally distributed organisations to set up common scenarios for designing, analysing, and optimising processes, IT, and software architectures.

Web-based products such as *ARIS Business Optimizer*, *ARIS Business Architect*, *ARIS Business Designer*, and *ARIS UML Designer* can access a centrally managed *ARIS Business Server* from anywhere in the world via a three-tier architecture. These products are designed for use beyond firewall limits utilising low bandwidth connections (e.g. dial-up, ISDN, etc.). Web-based clients can be started directly from within a Web browser or, alternatively, they can be installed as a desktop application manually or by automated software distribution. In both cases, any necessary client updates can be set up and controlled centrally to facilitate the rollout process.

A central database server (e.g. Oracle) is used for data management. All ARIS clients access the database server via the *ARIS Business Server* and thus work with a common database.

The ARIS Platform offers a high level of system scalability and availability. For instance, the majority of modellers can use *ARIS Business Designer*, while a smaller number of expert users can provide central administrative functions (e.g. management of access privileges, available reports, conventions/filters, etc.) using *ARIS Business Architect*.

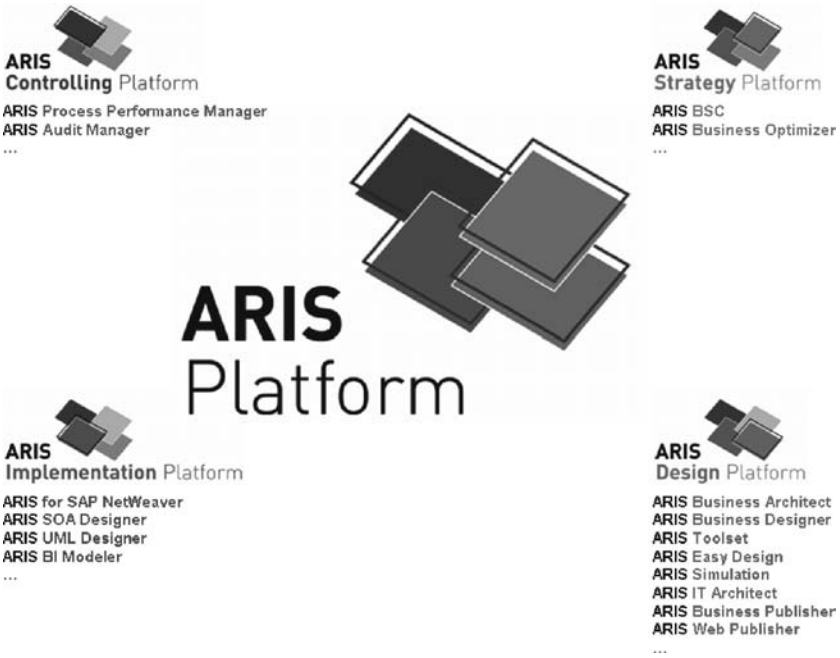

Fig. 2.1 ARIS Platform – Major Products

The Windows-based client products of the ARIS Platform, *ARIS Toolset* and *ARIS Easy Design*, can operate in parallel via the Local Area Network (LAN) on the central *ARIS Business Server*. As these products require higher bandwidth connections, a terminal server, such as Windows Terminal Server with Citrix MetaFrame, is necessary when the products are used in a Wide Area Network (WAN).

The integrated software solution of the ARIS Platform has two key characteristics:

- Central data repository,
- Common language and semantics.

ARIS is based on a database concept offering a central database for all modelling items (e.g. models, objects, symbols, connections, etc.) and all administration information. Everything described, designed and analysed within the different ARIS products is stored in this central data repository.

All ARIS products have been developed by IDS Scheer without the need to integrate any 'foreign' software not based on the central repository concept. This ensures every new product added to the ARIS Platform is built on the central repository.

Integration also means everything you model and describe using the ARIS Platform products is based on common language and semantics that can be understand

by all users. The semantics of describing process models and enterprise information is the underlying concept which gave ARIS its name "ARIS – *Architecture of Integrated Information Systems*" and it will be described in more detail later in this book.

2.2 The Strategy Platform

The *ARIS Strategy Platform* includes two major products that can be used during the strategy phase:

- ARIS Balanced Scorecard (BSC),
- ARIS Business Optimizer.

2.2.1 ARIS Balanced Scorecard (BSC)

ARIS Balanced Scorecard (BSC) supports the organisation-wide design and definition of a strategy management system following the principles of '*The Balanced Scorecard'* as proposed by Robert Kaplan and David Norton.

With ARIS BSC it is possible to define organisation-wide strategic objectives and to identify key success factors. It is possible to model and analyse cause-and-effect relationships and to assign '*Key Performance Indicators (KPIs)*' to the strategic objectives. Special reports and analysis enables the calculation and comparison of actual and target values and evaluation of the achievement of the different objectives.

ARIS BSC is used to define and to analyse the structure of a Balanced Scorecard System. Because ARIS BSC is integrated with the common repository of the ARIS Platform, all strategic corporate goals can be directly mapped to the business processes which are also described in the repository. This helps to align the business strategy with the underlying business processes.

2.2.2 ARIS Business Optimizer

ARIS Business Optimizer can be used for calculating and analysing performance indicators of various process management structures defined in the ARIS Platform. It is possible to run '*what-if'* scenarios to provide visibility of the '*as-is*' process, to identify best practices and to evaluate future '*to-be*' process designs.

Because of its flexible calculation engine, *ARIS Business Optimizer* can be used for different scenarios dealing with process-based KPI management:

- Setting up and analysing a BSC,
- Process cost accounting and activity-based costing,
- Product costing,

- Safeguarding strategic ‘make-or-buy’ decisions (target costing, outsourcing, etc.),
- Personnel requirement planning and resource planning.

2.3 The Design Platform

The *ARIS Design Platform* offers all the products needed to support the business process design phase when business processes are modelled, analysed, simulated and the results are published to all employees of the organisation. The ARIS Design Platform includes the well-known product, *ARIS Toolset*, and, in addition, new products such as *ARIS Business Architect* and *ARIS Business Designer* which we will describe in detail in the rest of this book.

2.3.1 ARIS Toolset

ARIS Toolset represents the flagship of the ARIS Platform. First released in 1992, it was a big success and has been continually innovated every year since. It is used for business process modelling in a range of organisations from small companies up to very large global organisations. The worldwide use of *ARIS Toolset* by professional customers has led to multi-language handling and multi-user support facilities being made available in more than twenty different languages. *ARIS Toolset* is recommended by leading tool evaluators and software analysts such as Gartner (www.gartner.com).

The *ARIS Toolset* Windows-based client is designed for anyone involved in projects managing organisational change in terms of BPM and its components enable organisation-wide and global design, analysis, and optimisation of business processes. Although focusing on the design of business processes, *ARIS Toolset* allows the modelling of all aspects of an ‘*Enterprise Architecture*’, such as IT systems, IT landscapes, organisational views, data views, etc.

ARIS Toolset supports professional business process modelling and includes all the necessary project administration features. It has an integrated report engine with development environments for Visual Basic and Java. This report engine enables project managers to analyse all the information about business processes stored in the repository.

2.3.2 ARIS Easy Design

While the *ARIS Toolset* client focuses on the professional business process manager within an organisation, the target group for *ARIS Easy Design*, with its functions for modelling, presenting, and reporting, is the employees in operational departments. In addition, it is suitable for occasional business users who need to

document their process knowledge in the form of graphical models. *ARIS Easy Design* can be used in many situations without prior expert knowledge.

In general, the methods offered in *ARIS Easy Design* are limited to modelling methods relevant for the target group. The objective is to ensure the operational departments possessing process knowledge can independently enter and document their knowledge. The repository-aided process design of *ARIS Easy Design* lets the user perform simple evaluations with the help of predefined reports.

2.3.3 ARIS Web Publisher

For an organisation-wide BPM approach it is necessary to document business processes and organisational structures within multiple project groups and carry out analysis across several locations. The results must be distributed quickly to all employees.

ARIS Web Publisher supports world-wide communication of business process via the Internet and Intranet. All information stored in the ARIS repository can be selected for the generation of a static HTML-based process Web site. To view these process models, users only need an Internet browser. The desired process information can be accessed quickly and easily from all locations, and access can be organised by technical topic or role.

2.3.4 ARIS Business Designer

The web-based *ARIS Business Designer* was launched together with *ARIS Business Architect* in 2005 based on Version 7 of ARIS. The development of *ARIS Business Designer* and *ARIS Business Architect* is the result of an ongoing web-strategy of IDS Scheer which will develop all new products based on the Java platform-independent programming language.

IDS Scheer has concentrated a great deal of effort in the user-friendly layout of the new, web-based interfaces for *Business Designer* and *Business Architect*. For instance, individual window sections can now be hidden to provide a maximised modelling area.

The user interface of *ARIS Business Designer* was developed to focus on the needs of employees in operational departments and occasional business users. Only the necessary functions are provided to align with these user roles. *ARIS Business Designer* for the process modeller comprises: the *Explorer Module* for accessing database contents (e.g. groups, objects and models), the *Designer Module* for actual modelling and the *Matrix Editor* for efficient relationship maintenance.

2.3.5 ARIS Business Architect

ARIS Business Architect (Fig. 2.2) offers a web-client with facilities for modelling, analysing, and optimising business processes similar to that which *ARIS Toolset* provides for the Windows-client users. *ARIS Business Architect* offers all the functions needed for the administration of databases, users, scripts, etc. thus providing project managers and BPM experts with an efficient configuration, evaluation, and management tool.

In addition to the *Designer Module*, *Explorer Module* and *Matrix Editor* available in *ARIS Business Designer*, *ARIS Business Architect* offers the *Administration Module* for database/user management via the Web and the *Script Editor* for creating scripts for reporting and analysis purposes. Operations such as *Model Generation*, *Merge*, or *Consolidation* of database contents are performed at server level allowing users to access these functions efficiently via the Internet.

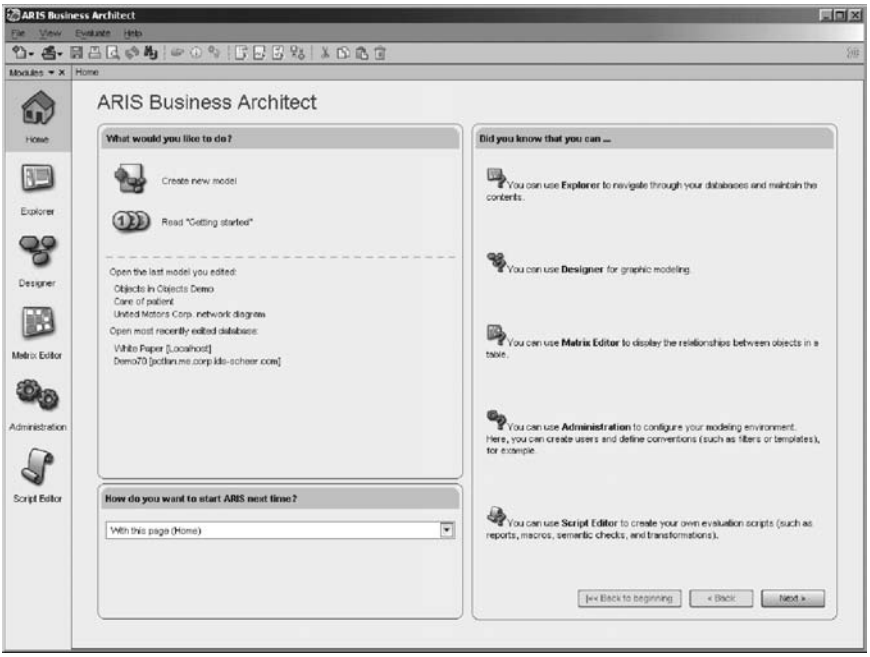

Fig. 2.2 ARIS Business Architect

2.3.6 ARIS Business Publisher

ARIS Business Publisher is the publishing component of *ARIS Business Architect*. It is a new, web-based tool for sharing current process knowledge with all the organisation's employees.

In contrast to *ARIS Web Publisher*, with its static HTML models, *ARIS Business Publisher* transfers the contents of the ARIS repository directly to a Web server where HTML pages are generated dynamically in response to user requests.

The automatic, on-demand, generation of web pages allows flexible representation of the contents of the repository. The published business process can be accessed through role-based or target group-based interfaces.

2.3.7 ARIS Simulation

Simulating business processes delivers, through statistical methods, information about the performance of processes, their weaknesses, and resource bottlenecks.

It is not enough to simply describe business processes. Before you make costly process modifications, you can use the simulated process KPIs (i.e. process cycle times, process costs, etc.) to evaluate various alternatives and apply true-to-life benchmarking.

Windows-based *ARIS Simulation* provides analysis options to provide insight into the dynamic interaction of the various processes stored in the ARIS repository. Through instantiation of the processes, times and costs are calculated via statistical methods. Within the process models there are direct analysis options, such as object animation and attribute animation. In object animation, visual changes to individual objects during the simulation define whether process branches were actually run through. Attribute animation provides more detailed information about the state of individual objects, such as the number of times a function has been carried out at a certain point in time. Additionally, cumulative and detailed statistics provide precise information about a wide range of KPIs supported by graphical representation of the simulation results.

2.4 The Implementation Platform

The *ARIS Implementation Platform* supports the implementation of the designed and analysed business processes into different application systems, target platforms or technologies. With *ARIS Implementation Platform* products, the gap between business processes and IT is closed. The major products of ARIS Implementation Platform are:

- ARIS for SAP NetWeaver – helps design the process architecture for SAP solutions that have been optimally adapted to the organisation’s business processes,
- ARIS SOA Designer – with special ARIS Interfaces supports the seamless implementation of business logic in executable applications,
- ARIS UML Designer – enables modelling with UML 1.4 standard diagrams and the creation of relationships to ARIS business models.

Most products of the *ARIS Implementation Platform* are additional products to the existing design tools such as *ARIS Toolset* or *ARIS Business Architect*. *ARIS Implementation Platform* supports industry standards such as XMI, XPDL, BPEL, BPMN and Web services-related standards.

2.4.1 ARIS for SAP NetWeaver

ARIS for SAP NetWeaver enhances *ARIS Toolset* or *ARIS Business Architect* to provide a rich BPM solution for SAP solutions. It provides ARIS reference models for SAP business processes including all SAP functions and transactions. Based on the reference models, which are synchronised with SAP Solution Manager (a tool for implementing and operating SAP Systems), it is possible to implement or upgrade SAP Systems such as SAP ERP or SAP CRM. The business processes representing the requirements from business departments can be used as a blueprint for further SAP configuration and customisation enabling process-oriented SAP application usage. The rollout of SAP can be supported by user training and help systems based on the modelled ARIS processes. With the BPEL export connectivity, *ARIS for SAP NetWeaver* also provides process orchestration using NetWeaver XI for processes spanning multiple applications.

2.4.2 ARIS SOA Designer

ARIS SOA Designer enables a *Service-Oriented Architecture* (SOA) to be designed based on the organisation's business processes. The business process designs determine the required performance of individual services and the associated orchestration of all the services making up a process.

Through a service browser integrated in *ARIS SOA Designer*, users can identify services for automating business activities. The connection between the technical service description and the business activity to be automated enables the generation of executable BPEL processes out of ARIS EPC models. BPEL processes can be exported for execution in platforms like IBM WebSphere, BEA WebLogic or SAP XI. By merging the business and technical SOA levels in ARIS, dependencies become apparent and can be controlled. At the click of a mouse, users can find out which service is used in which process.

2.4.3 ARIS UML Designer

Whether customising standard software or developing individual solutions, close cooperation between business and IT managers is key for success in all software projects. *ARIS UML Designer* is an add-on tool to *ARIS Business Architect* and combines business process modelling with software development methodologies.

Based on UML diagrams, it provides a consistent, integrated approach to developing business applications from process analysis to system design. *ARIS UML*

Designer is the tool for supporting both 'business process language' and 'software development language' supporting all the diagrams of UML 1.4 (e.g. class diagrams, use case diagrams, activity diagrams, state chart diagrams, collaboration diagrams and component diagrams).

2.5 The Controlling Platform

The *ARIS Controlling Platform* offers two major products to support the controlling phase of Business Process Management:

- ARIS Process Performance Manager – for measuring and analysis of process performance,
- ARIS Audit Manager – for control test and quality check of business processes.

2.5.1 ARIS Process Performance Manager

ARIS Process Performance Manager (PPM) offers the automatic analysis and visualisation of real '*as-is*' processes. A visualisation of the running process flow is generated based on time and resource information extracted from the underlying IT systems. ARIS PPM obtains time stamps from the systems by implementing specialised measuring points.

Based on this process information, process performance (quantity, time, cost, quality) for end-to-end processes is made visible and can be measured for every process. Process data can also be aggregated and offered in the form of a 'management cockpit' or 'dashboard'.

ARIS PPM enables continuous monitoring of planned values against actual status ('track and trace') and can be used as an early warning system for success-critical KPIs. Based on the analysis of the process data, the BPM lifecycle can be closed by identifying improvement potential.

2.5.2 ARIS Audit Manager

ARIS Audit Manager provides an audit workflow to ensure an organisation's processes meet the compliance requirements of a wide range of statutory and regulatory standards, such as Sarbanes-Oxley, Basel II, etc.

The *ARIS Audit Manager* workflow tests the process-critical control steps defined with *ARIS Business Designer*. The test workflow ensures the defined process controls are implemented and are working as expected. This helps organisations to identify process faults and potential risks.

2.6 What's in this Book

Our aim in writing this book is to provide a practical 'how-to' guide to using the *ARIS Design Platform* and an easy, but well-founded, start to Business Process Management based on ARIS modelling. Using the guidance in this book we want to enable you to use *ARIS Business Designer*, out of the box, for effective modelling of business processes.

This book is not a substitute for attending any of the ARIS training courses offered by IDS Scheer Academies worldwide (which we strongly recommend). It is a step-by-step introduction to the basic ARIS methods, functions and techniques we believe are most useful.

There are several target groups for this book:

- People having their first contact with the topic of Business Process Management who wish to learn more about *ARIS Business Designer* and *ARIS Business Architect*,
- People working in business departments who want to use *ARIS Business Designer* or *ARIS Business Architect* to describe their business requirements and business processes,
- People who wish to use the *ARIS Design Platform* for the development of organisation-wide BPM systems,
- People with experience and knowledge of *ARIS Toolset* or *ARIS Easy Design* who want to migrate to the new, reworked and optimised web-based ARIS products.

For all these groups we want to offer an easy to understand and practical 'how-to' guide which starts with the basic questions regarding BPM and ARIS modelling without discussing too much theoretical detail. In just the same way that, if you want to learn a programming language like Java or C#, you have to start by learning the basic syntax elements before you can develop your first business application.

We then address the basic modelling facilities of *ARIS Business Designer* or *ARIS Business Architect*. We will not explain the more powerful, but also more complex, features of *ARIS Business Architect*, such as variant handling, model merging, administration features, simulation or scripting. Those will be described in a future book. However, we have made sure there is enough space to provide you with lots of hints and tips regarding the practical use of *ARIS Business Designer*.

Rob has been using ARIS in British Telecommunications plc. for more than eight years and was responsible for implementing ARIS at BT. He had to introduce ARIS, both to process modellers familiar with other tools, and to people with little experience of tools or modelling. He and his colleagues had to work out what standards they needed to define, how to publish them, how to review them and how to overcome natural resistance to change. Although most users had been trained, what they needed above all was an easy to understand guide to how to apply the tool for modelling *their* business.

Eric has been working at IDS Scheer in ARIS product management since 1999 and has had contact with many customers during that time. He identified they had the same needs and questions as described by Rob at BT.

After the success of Rob's first book on ARIS Toolset, *Business Process Modelling with ARIS – A Practical Guide*, we jointly decided, during IDS Process World 2006, to work together on a new book describing BPM with *ARIS Business Designer* providing the following types of information:

- How to establish BPM with ARIS,
- Background to modelling and the ARIS Method,
- Basic instructions for using *ARIS Business Designer*,
- Selected information on using *ARIS Business Architect*,
- How to structure a business process architecture,
- How to set and use standards,
- Hints and tips on *ARIS Business Architect* and *ARIS Business Designer*.

We have tried to mix detailed advice about how to operate key aspects of *ARIS Business Designer* and *ARIS Business Architect*, along with guidance on how to go about process modelling and using ARIS in your organisation. Wherever possible we have stuck to the ARIS Method, but by no means did we use all of it. Our approach won't suite everyone, but if you use it as a starting point you can develop your own style and techniques as you progress.

Inevitably, this is *our* pragmatic approach to modelling *your* business in ARIS based on our experience and ARIS user feedback. It is not intended to replace the published information on the ARIS Method or the ARIS product range, the ARIS help files or any training you may receive from IDS Scheer. We have given our own viewpoint on many *ARIS Business Designer* and *ARIS Business Architect* features and, where possible, explained where we have departed from the ARIS Method.

We have described and illustrated *ARIS Business Designer* and *ARIS Business Architect* version 7.02 (as of December 2006). There may be small differences with later versions of ARIS, but nevertheless the basic principles of modelling with *ARIS Business Architect* and *ARIS Business Designer* should remain the same. We have prepared this book with due care and attention, but can take no responsibility for the consequences of any actions readers take as a result of reading this book. If in doubt, consult IDS Scheer AG.

2.7 How to Use this Book

We have written this book with the intention it should be read a chapter at a time. Rather than producing a reference manual of all the ARIS Business Architect facilities, we have tried to describe in a practical way all the important aspects of the tool in the context of the modelling work for which you will be using it.

Each chapter builds on the concepts introduced in preceding chapters, with the more complex material appearing in the second half of the book.

We would not recommend anyone to try to read the book in one go. Using ARIS successfully is based on practice and experience. It is best to read a few chapters and try out the techniques described, moving on to more complex material as you become more familiar and confident.

Of course you can use this book also as a kind of reference book and search for special topics of interest regarding business process modelling with *ARIS Business Designer* and *ARIS Business Architect*.

To draw your intention to hints and tips, and to make you aware of possible problems, we have used the following icons:

Warning – this is a warning symbol. These warnings should not be ignored, otherwise dire effects will be experienced which will influence your work with ARIS. You have been warned so there is no excuse if you go ahead and do so. We take no responsibility for any subsequent loss or damage.

Hint – hints will help you to work more efficiently with *ARIS Business Architect* or *ARIS Business Designer*. Following these hints will speed up your daily work or, at the very least, will allow you to impress your colleagues!

Expert Tip – these tips will give you examples of more detailed, and sometimes more complex, facilities you may wish to try once you have mastered the basics.

FAQ – we have often heard the same questions from different people working with ARIS. We have tried to identify the most common '*Frequently Asked Questions*' and provide you with some answers.

ARIS Business Architect – our explanations aim at users of *ARIS Business Designer* because this is the tool you normally start working with. The same facilities are also available in *ARIS Business Architect*, the expert tool, but we will use this symbol to highlight features only available with *ARIS Business Architect*.

2.8 For New Users of ARIS Business Designer

We recommend readers new to *ARIS Business Designer* should initially concentrate on reading Chapter 2 through to Chapter 7. These chapters describe: the principles of business process modelling with ARIS, the main parts of the ARIS modules, the interface and introduce the *Event-driven process chain* concept.

A good understanding of the basic modelling methods of ARIS and the *Event-driven process chain* is essential for the correct use of ARIS.

Once you are comfortable with these concepts, read Chapters 8 and 9 to enhance your knowledge from 'drawing' a business process to 'modelling and design' of business processes, and to understand working with *ARIS Business Designer* more in detail.

Continue reading Chapters 10, through 15. At this point you should be ready to start using ARIS in earnest to model new process designs, or to capture and model the detail of existing processes.

Once you have been modelling for a while, return to the book and read Chapters 16 and 17. They offer a good overview of how to implement Business Process Management with ARIS in your organisation, how to standardise process modelling with ARIS and which roles will be necessary in your organisation for implementing a BPM approach.

2.9 For ARIS Toolset and ARIS Easy Design Users

Functionality is similar between *ARIS Toolset* and *ARIS Business Architect*, and between *ARIS Easy Design* and *ARIS Business Designer*. However, IDS Scheer has invested a lot of effort into the enhancement and optimisation of the new user interface of their web-based products. We are sure there are many new and useful concepts with which you may be unfamiliar. Furthermore, there are some new facilities in *ARIS Business Designer* and *ARIS Business Architect* you will not be aware of from using the Windows-based products.

We recommend those people who know about ARIS modelling methods and ARIS basics begin reading with Chapters 5 and 6. Leave out Chapter 7, which explains the EPC in detail, and continue from Chapter 8.