

# CAEvolution

Computer Aided Engineering · Business Consulting · Training · Coaching

Applying a holistic view on life cycle management interrelating to human capital, economic, environmental and social aspects as well as to technology and innovation

Customer specific Training Manual for a joined education approach between NAFEMS and CAEvolution GmbH in Munich

June 08, 2015



# Life Cycle Assessment Training

Dear customer

We are an internationally operating management and consulting company characterized by profound insight and proven competency focusing on evolutionary economics, integrated and resilient processes to deliver sustainable results. We understand ourselves as being the interface between the human capital, technology and innovation acting globally with an excellent network.

Being pioneers of the first hour in Life Cycle Management we understand the 'Predictive Life Cycle Assessment\*\*' as an integrated view on a product's life cycle, going far beyond technical aspects only. Clearly, there is a high impact on the whole value chain and as such the life cycle of a finished product it is not limited to product development, manufacturing and application – no, in our view we apply a holistic approach "from the cradle to the grave" striving to further challenge ourselves by sharing best practises and breakthrough technologies.

Thus, Life Cycle Management per se focuses on change management in Engineering through (P)LCA\*. The role of the human being is centric, qualified and motivated staff is critical to turn this endeavor into a mutual success. As a major tool to extend skills and knowledge, we offer a wide variety of training course on peopl(e)volution and technology related topics.

Life Cycle Assessment offers a high potential to strengthen a product's and/ or business' performance encouraging the engineer and end user to assess environmental, economic and social impact of product development from a holistic perspective, and ideally, in a predictive way upfront to the broadest extent possible. Knowing that material data, simulation models and processes are based on assumptions, simplifications or knowledge all input must be understood as context dependent and might change under future scenarios and assessments. Therefore, Life Cycle Management runs through different phases and individual processes which are influenced and steered by different technical instruments such as software or simulation systems.

The earlier instruments of simulation are used, the cheaper and more optimized products can be designed and produced. The following concept of training employs interdisciplinary approaches and offers you a combination of theoretical lecture and hands-on-workshop to integrate your questions and ideas into your training.

I am looking forward to continuing our dialogue and anchoring a cooperation.

With kindest regards

Claudia Sippel  
Managing Director CAEvolution GmbH



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Managing Director CAEvolution GmbH

\*(P)LCA (Predictive) Life Cycle Assessment

# Life Cycle Assessment Training

The proposed concept understands itself as the basis of a common dialogue. Further seminar modules and fixed dates should be subject of our next information exchange.

Processes and procedures, case studies, calculation and simulation are very comprehensive aspects which need to be adopted to your specific interest. Therefore, we feel it is critical to understand your individual requirement frame, your motivation and we are as well asking you kindly to concretize information about your company and specific interests.

Module	Module Title	Duration	Pricing
Part I. Introduction	Module I. 1 - Introduction	1.5 days	Lecture: 3.225 £* Hands-on-workshop: 4.275 £*
	Module I. 2 - Facing the current challenges, trends and new demands for companies		
	Module I. 3 - Life cycle concepts and assessment applying a holistic view		
	Module I. 4 - Reference framework for integrated life cycle assessment		
Part II. Phase of life-crossing disciplines	Module II. 1 - Analysis of selected life cycles	2.5 days	Lecture: 5.375 £* Hands-on-workshop: 7.125 £*
	Module II. 2 - Information and knowledge management		
	Module II. 3 - Process management		
Part III. Phase of life-related disciplines	Module III. 1 - Product management	2.5 days	Lecture: 5.375 £* Hands-on-workshop: 7.125 £*
	Module III. 2 - Production management		
	Module III. 3 - After-sales management		
	Module III. 4 - End-of-life management		
Part IV. Summary & Outlook	Module IV. - Summary and outlook Q & A	0.5 days	Hands-on-workshop: 1.075 £*
Part V. Simulation & Optimization	Module V. - How simulation and optimization can contribute to a resilient business performance, seamless processes and a beneficial product development	On demand	On demand*

\* plus value added tax possibly thereby incurred

# Part I. - Facing the current challenges, trends and new demands for companies

## SELECTED KEY ASPECTS:

### Introduction

- Welcome session
- Presentation of seminar content and structure
- Setting the objectives based on your individual interest

### Actual challenges and new demands on companies

- Global Challenges and consumption of natural (non-renewable) resources
- Understanding of complex systems and requirements
- Economic Challenges and future trends
- Corporate Social Responsibility
- New competitors and the bargaining power of suppliers and customers
- Pressure of competition among existing competitors
- Alternative products and services
- Design elements for corporate development
- Examples for individualizing of products
- Economy of used equipment and tools
- Rising energy prices and raw material costs
- Environmental challenges
- Current dimensions of environmental problems and causes
- Future and Sustainable Development
- Principles and strategies of resilient businesses
- Targets and instruments of environmental policy
- Industrial Ecology and sustainable business performance
- Summary: Consequences for companies

## SEMINAR LOGISTICS:

- Full-day-seminar (1/1), hold in the UK, starting at 9 AM including break
- Seminar fee for Module I. incl. printed handout for reference 4.275 £\* and as hands-on-workshop 3.225 £\*
- Travel costs for the lecturers, costs for training room with video projector, flip chart, food and drinks, accommodation expenses be borne by customer
- All CAEvolution seminars are available as in house training

\* plus value added tax possibly thereby incurred, costs for seminar preparation are access-the-board included in the daily seminar fee and will depend on the concrete professional level of the participants.

# Part I. - Life cycle concepts and assessment applying a holistic view

## SELECTED KEY ASPECTS:

### Life cycle concepts and assessment

- Introduction to Life Cycle Concepts
- Analysis of selected life cycles
- Phases of life concepts (flow oriented)
- Life cycle concepts (predictive)
- Integrated life cycle concepts (phases and cycle-oriented)
- Life cycle concepts for technologies
- Life cycle concepts of socio-technical systems
- Coupling of different life cycles
- Life cycle-based management
- Solution modules for a life cycle-based management

### Model and reference framework for an integrated life cycle assessment

- Requirements for an integrated life cycle assessment
- Management models and complex systems
- System theory and cybernetics
- The systemic-cybernetic management perspective
- The model of viable systems
- Discussion of various management concepts
- Reference framework for an integrated life cycle assessment
- Disciplines in an integrated life cycle assessment
- Coupling of life paths and life cycles
- Integration and allocation of disciplines

## SEMINAR LOGISTICS:

- Full-day-Seminar (1/1), hold in the UK, starting at 9 AM including break
- Seminar fee for Module I. incl. printed handout for reference 4.275 £\* and as hands-on-workshop 3.225 £\*
- Travel costs for the lecturers, costs for training room with video projector, flip chart, food and drinks, accommodation expenses be borne by customer
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# Part II. - Phase of life-crossing disciplines, analyses of selected life cycles, information and process management

## SELECTED KEY ASPECTS:

### Analysis of selected life cycles

- Economic life cycles
- Ecological life cycles
- Social life cycles

### Information and knowledge management

- Trends in information management
- Trends in knowledge management
- Current life cycle-oriented information flow and knowledge management
- Phases and prospects of a life cycle-related information and knowledge management

### Process management

- Basics of process management
- Life cycle oriented process management

## SEMINAR LOGISTICS:

- Full-day-Seminar (1/1), hold in the UK, starting at 9 AM including break
- Seminar fee for Module II. incl. printed handout as reference 7.125 £\* and as hands-on-workshop 5.375 £\*
- Travel costs for the lecturers, costs for training room with video projector, flip chart, food and drinks, accommodation expenses be borne by customer
- All CAEvolution seminars are available as in house training

\* plus value added tax possibly thereby incurred, costs for seminar preparation are access-the-board included in the daily seminar fee and will depend on the concrete professional level of the participants.

# Part III. - Phase of life-crossing disciplines, product management, production management, after-sales management, and end-of-life management

## SELECTED KEY ASPECTS:

### Analyses of selected life cycles

- Life cycle phase related disciplines
- Trends in product management
- Life cycle orientation in product planning
- Life cycle orientation in product development
- Basics of production management
- Life cycle oriented production management
- Basics of after sales management
- Life cycle oriented after-sales management
- Trends and conditions of the end-of-life management
- Life cycle-oriented end-of-life management

## SEMINAR LOGISTICS:

- Full-day-Seminar (1/1), hold in the UK, starting at 9 AM including break
- Seminar fee for Module III. incl. printed handout as reference 7.125 £\* and as hands-on-workshop 5.375 £\*
- Travel costs for the lecturers, costs for training room with video projector, flip chart, food and drinks, accommodation expenses be borne by customer
- All CAEvolution seminars are available as in house training

\* plus value added tax possibly thereby incurred, costs for seminar preparation are across-the-board included in the daily seminar fee and will depend on the concrete professional level of the participants.

# Part IV. - Summary and outlook, Q&A

## SELECTED KEY ASPECTS:

Analyses of life cycle paths

- Summary and Outlook
- Discussion and open dialogue
- Seminar evaluation

## SEMINAR LOGISTICS:

- Full-day-Seminar (1/1), hold in the UK, starting at 9 AM including break
- Seminar fee for Module IV. incl. printed handout 1.075 £\*
- Travel costs for the lecturers, costs for training room with video projector, flip chart, food and drinks, accommodation expenses be borne by customer
- All CAEvolution seminars are available as in house training

\* plus value added tax possibly thereby incurred, costs for seminar preparation are accross-the-board included in the daily seminar fee and will depend on the concrete professional level of the participants.

# Part V. - How simulation and optimization can contribute to a resilient business performance, seamless processes and a beneficial product development

## ABOUT KEY ASPECTS:

This part is subject to input from the customer as

- depending on branch
- motivation
- business challenges
- technology and
- methods used
- ...

and will be tailored accordingly.



# Expertise in management and training

## CLAUDIA SIPPEL

Claudia Sippel was born in Dresden, Germany. In 2003 she received a degree from Cambridge University in Business English. Besides working across the cities of Frankfurt am Main and Dresden as well as in Scandinavia she has settled in Munich since 2001. In her role as the CEO and Managing Director of CAEvolution GmbH (founded in March 2003) she focuses on sustainable business growth throughout the whole value chain always placing people first and centric. She is a specialist in international project management on an operative and strategic level spanning various classes of businesses and branches. Besides her profound expertise working for multinational enterprises as well as for Pan-European and Asian customers, she contributes to European funded projects and manages assignments, i.e. related to CAE-technology, general in-depth process optimization, market studies and business development, infrastructure and facility management. Her long-term experience makes her a valued advisor and trusted partner to top executives, stakeholders and decision makers.

In 2012, she published together with the authors Dr.-Ing. Hans Sippel and Dr.-Ing. Martin Kuessner the book "Predictive Lifecycle Assessment". Being a pioneer in this matter, she is spreading the message to apply a holistic approach on the value chain taking into consideration a product and process from its "cradle to the grave".

Her motivation is to drive innovation, getting inspired by diversity and change management as well as balancing and keeping the momentum of great achievements and lasting results.

She is contributing to honorary assignments for national and international institutions, fulfilling several memberships like VDI Germany, WEConnect International, national institutions and initiatives aiming at building up organizations and businesses today - for tomorrow.

Her philosophy "Nothing great in the world has ever been accomplished without passion." (G.F. Hegel) is being underlined by the awareness that the human capital is THE key differentiator for a business; skilled and motivated staff is most critical to turn an endeavor into a mutual success. Encouraging and growing people by professional education and customized coaching enables the individual, team and organization to deliver sustainable results.



Claudia Sippel  
Managing Director CAEvolution GmbH

# Expertise in management and training

## ANDRÉ HENSCHKE

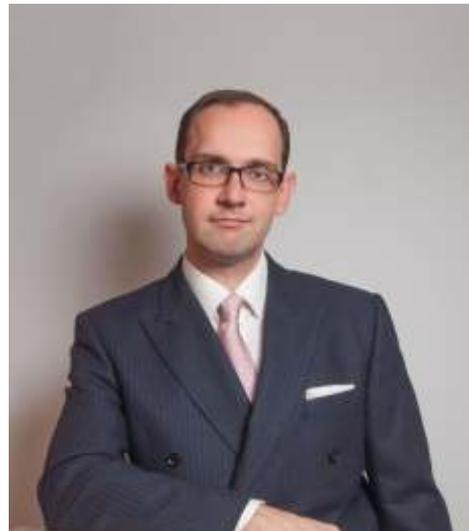
André Henschke was born in Goerlitz, Saxony, Germany and studied business administration and strategic management. For more than twelve years, he has been in his role as the CEO of „Henschke Consulting“ and works as an expert and interim manager for product development, production management and strategic studies.

Since 1999, he is entrusted (by Prof. Dr.-Ing. habil. Prof. E. h. Dr.-Ing. E. h. mult. Dr. h.c. Dr. h.c. Reimund Neugebauer, President of Fraunhofer Gesellschaft (Fraunhofer society of applied research, Munich, Germany)) as a manager of research & development projects in field of machine tool and software development, project management and training. He is a docent

- at the Dresden University of Technology (TU Dresden)
- at the German TÜV Rheinland
- at the DIU - Dresden International University
- at the SME's University of Dresden University of Technology
- at the EIPOS eV (European Institute for Postgraduate Education at the TU Dresden eV).

His contributions on scientific studies and analyses for the Chemnitz University of Technology, Dresden University of Technology and the Fraunhofer Society expands his field of activity for more than 15 years. Since 2004, he has established numerous international partnerships and projects, for example in UK (Oxford/London), Poland (Wroclaw), Spain (Madrid), Sweden (Stockholm / Uppsala / Gothenborg), USA (Los Angeles), Brazil (Sao Paulo), Chile (Santiago de Chile).

He is one of the founders of the "Friends of the Green Vault association", which is the finest art collection of Saxony and treasure of the former Kingdom of Saxony, he is Chancellor of the Order of St. Henry and is the spokesman of the Award of Industry and economics, which is awarded annually in Leipzig at the Federal Administrative Court of Germany.



## André Henschke

Expert and interim manager for product development, production management and strategic studies

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# CAEvolution

Computer Aided Engineering • Business Consulting • Training



## CAEvolution - Competence in process management and training

CAEvolution develops, consults and educates decision makers and specialists sector neutral on international level. CAEvolution provides long-term experiences in attending small and middle sized companies and concerns.

### Consulting

- > Structured process consultation & process optimization
- > Market analysis/ studies
- > Sales & Marketing of high-end CAE tools

### Training/ Seminars

- > Computer Aided Engineering
- > Predictive Life Cycle Management
- > Strategy- and Decision-Management

### Project Management

- > Capturing and implementing new technology trends
- > Applied research within publicly funded projects
- > Project Management Office (PMO)

### Interim Management

- > Top Executive Consulting
- > Cross functional & cross industrial experience