CIMdata PLM Leadership
Private PLM Certificate Program
Knowledge to Improve PLM Projects in the age of Digital Transformation

For nearly forty years, CIMdata has been working in the Product Lifecycle Management (PLM) industry while helping companies define and execute major components of their digital transformation. Our consulting services and research expertise are known around the world for best practice-based content and insight. CIMdata has leveraged its knowledge and experience to create the PLM Certificate Program as a central part of CIMdata PLM Leadership—the PLM industry's most comprehensive non-biased education offering for today's PLM professionals who are at the center of their enterprise's digital transformation activities.

CIMdata PLM Leadership is comprised of a set of well defined, assessment-based PLM education certificate programs, short courses, and webinars. The certificate programs are delivered through a series of education sessions, and are intended to ensure that those who participate in a PLM project all have a strong understanding of PLM concepts and industry leading best-practices, and how it is a critical component of an enterprise's digital transformation.

These certificate programs are available to industrial companies who are considering, evaluating, implementing, and/or enhancing their PLM-enabling solutions, as well as to PLM software and service providers. These programs are also offered in a number of different configurations (see www.CIMdata.com[1]), including the configuration described herein.

Private PLM Certificate Program

CIMdata's Private PLM Certificate Program leverages CIMdata's internationally recognized 5-day *PLM Certificate Program for Industrial Organizations and PLM Solution Providers*. This assessment-based certificate program satisfies the main PLM education requirements of small to large enterprises. The program also provides primary PLM education to PLM solution providers (i.e., PLM software and services organizations) and their employees who are responsible for marketing, developing, selling, and delivering PLM solutions and associated implementation services. The Private version of the program provides organizations with an exclusively presented series of educational seminars that may be tailored to their specific industry and/or topical needs.

> *"Wish I had this BEFORE we implemented our PLM solution. It will be good for continuous improvement."*—Anonymous Attendee

The Private PLM Certificate Program is delivered through a series of education sessions. Sessions are 3.5- to 7-hours in duration. Furthermore, the delivery of the program's content is tailored, within the given time restrictions, to address any industry-specific issues of interest to the participants.

The certificate program is delivered over three or five consecutive business days. Each day runs from approximately 8:30am to 4:30pm with one mid-morning break, a lunch break, and one mid-afternoon break. The students in the course are also expected to take part in team exercises that require additional time following each day's formal education sessions.

> *"The PLM course provides a great overall view of the business value of PLM. It will expand your knowledge so you can extend PLM benefits in your organization."*—Dan Miles, Tata Technologies

The certificate program includes a combination of lectures, industry case studies, group exercises, and tests.

Successful completion of a 5-day program leads to a *Standard Certificate of PLM Leadership* and 3.0 CEUs*,* and the successful completion of a 3-day program results in a *Core Certificate of PLM Leadership* and 1.8 CEUs.

Target Audience

The target audience for the Private PLM Certificate Program includes, but is not limited to:

- Program Champions and Sponsors
- Mid-Level Business Managers
- Digital transformation leaders

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1 http://www.cimdata.com/services/education/plm_certificate.html

- Functional Directors (i.e., IT, engineering, supply chain, NPD, etc.)
- Business Subject Matter Experts
- Project Leaders
- PLM Project Team Members
- IT Professionals
- IT Managers

Target Industries

The Private PLM Certificate Program has been designed to be industry independent. However, industry-specific content (e.g., process discussions, examples, and cases studies) can be easily added to support a specific company or industry group.

Certificate Program Outline

The following outline can be modified or extended to include any of the Advanced Classes described later in this document.

Day 1: Session 1: PLM: Key Concepts & Learnings

Day 2: Session 2: PLM Benefits & Potential Value
Session 3: PLM Strategy & Solution Definition

Day 3: Session 4: PLM Solution Evaluation & Selection
Session 5: PLM Implementation, Monitoring & Continuous Improvement

Day 4: Session 6: PLM Process Development & Testing
Session 7: Integrating PLM within the Enterprise

Day 5: Session 8: Expanding PLM Across the Value Chain
Session 9: Configuration Management's Role in PLM

Course Delivery

A team of internationally experienced, senior-level CIMdata consultants will deliver all course material in English. All presentation materials are provided to each participant in a printed notebook, as well as in a fully searchable set of PDF files provided on a USB thumb drive.

> *"Very worthwhile, will definitely help move our own PLM initiative forward."*—Allen Heindel, Crown Equipment Corporation

Pricing

The Private PLM Certificate Program is priced on a per request basis. The price is based on the type and number of sessions chosen and the number of students.

CIMdata consultant travel and expenses as well as meeting location, equipment provision, and snacks and lunches are in addition to the course pricing.

Notes

- A maximum of 25 students can attend a Private Certificate Program session.
- Any travel expenses incurred by participants are the responsibility of the attendee and are not handled by CIMdata.
- Special prices are available for companies that would like the courses to be customized for their employees. These prices depend on the company's customization requirements, the number of people that will attend the program, and the agreed upon schedule. The Host Company has the option to select from the set of Advanced Sessions CIMdata offers or to ask CIMdata to deliver a more tailored set of presentations.
- All program configurations expand on key elements presented in Session 1—PLM: Key Concepts & Learnings.

About CIMdata

CIMdata, an independent worldwide firm, provides strategic management consulting to maximize an enterprise's ability to design, deliver, and support innovative products and services by identifying and implementing appropriate digital initiatives. For nearly forty years, CIMdata has provided industrial organizations and providers of technologies and services with world-class knowledge, expertise, and best-practice methods on a broad set of product lifecycle management (PLM) solutions and the digital transformation they enable. CIMdata also offers research, subscription services, publications, and education through certificate programs and international conferences. To learn more, visit www.CIMdata.com or email info@CIMdata.com.

Standard PLM Certificate Program
Session Descriptions

Sessions 1 through 5 comprise the *Core Certificate of PLM Leadership*. Adding Sessions 6 through 9 to the curriculum completes the *Standard Certificate of PLM Leadership*.

Session 1—PLM: Key Concepts & Learnings

Duration: 1 day

Prerequisites:
- None

Intent: The scope of this one-day session includes the presentation of today's view and vision of the global PLM market and technologies. The overall intent of the session is to provide a broad overview of the PLM market, including trends, system architectures, and critical elements of success. This session will include presentations, discussions, and a set of interactive exercises.

Session Outline:
- Introduction
- Elements of a PLM Enabling Platform
- The Expanding Reach of PLM
- Today's Trends & Challenges
- An Introduction to the PLM Commercial Landscape
- PLM Benefits
- PLM Best Practices

Session 2—PLM Benefits & Potential Value

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings

Intent: This half-day session reviews industry metrics used to measure and monitor the benefits of PLM implementations. Areas of potential PLM benefits will be presented by discussing results achieved by various companies that have implemented PLM. These case studies are taken from published literature and CIMdata's researched case studies. The focus of the session will be to describe how metrics should be used to help define a company's PLM strategy, define the company's PLM roadmap, select the most appropriate PLM enabling solutions, and much more.

Session Outline
- Potential Benefits of PLM
- Defining & Measuring the Costs of PLM
- Measuring the Value of PLM
- Introduction to a Benefits Appraisal Methodology
- Using Metrics to Steer a PLM Program
- Selected PLM Benefits Case Studies

Session 3—PLM Strategy & Solution Definition

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings
- Session 2: PLM Benefits & Potential Value

Intent: This half-day session provides a set of detailed guidelines for PLM strategy development and solution definition. When properly followed, these guidelines will help an organization reduce the time it takes to define and create a PLM solution strategy.

Session Outline:
- Introduction to PLM Strategy Development
- High-Level Planning
- Defining a Strategy & Tactics
- Defining Business Requirements
- Implementation Strategies

Session 4—PLM Solution Evaluation & Selection

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings
- Session 3: PLM Strategy & Solution Definition

Intent: This session provides a set of detailed guidelines for evaluating available solutions and selecting appropriate solutions to support a company's PLM strategy. When properly followed, these guidelines will help an organization reduce the time it takes to select the right solution for their organization.

Session Outline:
- Evaluating & Selecting PLM Solutions
- Developing True Business Requirements
- Developing Technical Requirements
- Selecting the Most Appropriate Solutions

Session 5—PLM Implementation, Monitoring & Continuous Improvement

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings
- Session 2: PLM Benefits & Potential Value
- Session 3: Strategy & Solution Definition

Intent: This half-day session provides a set of detailed guidelines for implementing and evolving a PLM environment. When properly followed, these best practices will help an organization reduce the time it takes to identify and quantify associated risks and better manage and control project costs from the project concept phase through implementation and organizational adoption.

Session Outline:
- Why projects fail?
- Gaining Leadership Commitment
- Harnessing Project Management Skills
- Implementation Planning & Execution
- Communicate, Communicate, Communicate...
- Managing Expectations
- Assessing the Implementation
- Sustaining Your Program

Session 6—PLM Process Development & Testing

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings
- Session 2: PLM Benefits & Potential Value
- Session 3: Strategy & Solution Definition
- Session 4: PLM Solution Evaluation & Selection
- Session 5: Implementation, Monitoring & Continuous Improvement

Intent: This half-day session provides an understanding how to best define, implement, and continuously improve PLM-enabled processes. The session will also present best practices for testing the process enabling PLM solutions.

Session Outline:
- Developing Business Processes
- Documenting Business Processes
- Sample Business Process Definition
- System Testing & Validation
- Process Ownership & Continuous Improvement

Session 7—Integrating PLM within the Enterprise

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings
- Session 2: PLM Benefits & Potential Value
- Session 3: Strategy & Solution Definition
- Session 5: Implementation, Monitoring & Continuous Improvement

Intent: This half-day session focuses on PLM's role within an enterprise's overall information technology architecture (both process and data) and how to best approach the integration of various PLM solutions (e.g., via the implementation of a service oriented architecture), especially PDM technologies, with other enterprise IT systems, e.g., ERP, CRM, etc.

Session Outline:
- Introduction
- The Typical Enterprise IT Landscape
- PLM's Role in an Enterprise IT Landscape
- Integration Approaches that Work
- Other Issues to Consider

Session 8—Expanding PLM Across the Value Chain

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings

Intent: This half-day session covers the next steps in implementing PLM inside and outside the company, to its supplier and partner community, providing access to its customers, to other functional areas outside of engineering and manufacturing operations, and distribute operations across the broader enterprise.

Session Outline:
- Defining the Value Chain
- Current Areas of Expansion
- Essential Issues for Each Area
- New Technologies Impacting PLM's Expansion
- Priorities & Steps for Expansion

Session 9—Configuration Management's Role in PLM

Duration: ½ day

Prerequisites:

- Session 1: PLM: Key Concepts & Learnings

Intent: This half-day session defines configuration management and how PLM can be used to enable it. The session provides an understanding of the various PLM-related configuration management elements (e.g., configuration items, options & variants, change management, and effectivity) and how a PLM solution can be used to support them. The session also reviews of a set of configuration management best practices and industry examples.

Session Outline:

- The History of Configuration Management
- Why Configuration Management Matters
- Configuration Management Defined
- Processes & Related Requirements
- Best Practices Guidelines
- Industry Example—CMII

Advanced PLM Certificate Session Descriptions

Optionally available advanced topics include:

- PLM's Place within an Enterprise Application Architecture
- Today's Trends & Challenges Impacting PLM
- The "Platformization" of PLM
- PLM's Role in Additive Manufacturing
- PLM's Role in Enabling the Circular Economy
- PLM & Social Media
- PLMisGreen
- The PLM Commercial Landscape
- PLM & Cultural Change Management
- Requirements Management
- Systems Engineering & Mechatronics
- Simulation-Driven Systems Development
- Simulation Data & Process Management
- Collaborative Product Development
- Application Lifecycle Management & PLM
- Product Portfolio Management
- PLM & Enterprise Program Management
- Enterprise Content Management
- Maintenance, Repair & Overhaul/Operations (MRO)
- Strategic Sourcing
- Digital Manufacturing
- PLM Implementation Best Practices
- Data Modeling within PLM
- Classification and Data Search & Retrieve
- Security & IP Management
- Integrating PLM & ERP
- Advanced Configuration Management (CMII) & PLM
- PLM in a Specification Driven Industry

The scope of these half-day advanced educational sessions and discussions includes: scope and definition of the topic, how PLM supports the topic being considered, and presentations of selected solution providers and their solutions (where appropriate). These sessions also include review of a number of industrial case studies and a set of interactive exercises. Overall, these sessions include presentations, discussions, one or more case studies, and an interactive exercise if applicable.

Advanced Session—PLM's Place within an Enterprise Application Architecture

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings
- Session 3: PLM Strategy & Solution Definition
- Session 7: Integrating PLM within the Enterprise
- Session 8: Expanding PLM Across the Value Chain

Intent: This half-day session describes CIMdata's Enterprise Application Architecture (EAA) framework. CIMdata's EAA describes a comprehensive set of business capabilities that are defined and directed by the organization's business and technologies platforms. In this context, capabilities are processes and technologies (i.e., functional capabilities) that are used to perform a business function. The session describes the framework with a focus on how PLM fits into it and the best practices related to how an organization can use the model to define and evolve its application architecture.

Session Outline:
- Introducing an EAA Framework
- Key EAA Capabilities Described
- Defining the Scope of PLM Using an EAA Framework
- Defining a PLM Roadmap Using an EAA Framework
- How and Where to Begin

Advanced Session—Today's Trends & Challenges Impacting PLM

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings

Intent: This half-day session presents today's key trends and challenges that are or will have an impact on PLM. This continuously evolving presentation seeks to cover a combination of business and technology trends and challenges (e.g., social, cloud, analysts, circular economy, additive manufacturing, and the Internet of Things). This session expands on the trends and challenges presenting during Session 1 of the Standard course and provides a foundation for more in-depth discussions on how to best prepare for and leverage these trends and challenges for future PLM success.

Session Outline:
- PLM's Key Concepts & Learnings
- PLM's Scope & Potential Benefits
- Evolving Business Challenges
- Key Technology Trends Heating Up
- A Look into the Not So Distant Future
- How and Where to Begin

Advanced Session—The "Platformization" of PLM

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings
- Advanced Session: Today's Trends & Challenges Impacting PLM

Intent: This half-day session describes how the PLM industry is entering an accelerating era of end-to-end business platform enablement, and how recent development and acquisition strategies illustrate PLM solution provider direction and industry requirements. The shift towards enabling robust and resilient business platforms requires a fundamental change for both industrial users and PLM solution providers. As opposed to deploying and integrating best-in-class business suite solutions, companies must rethink PLM.

Session Outline:
- The Road Towards "Platformization"
- Defining the Production Innovation Platform: PLM's Enabler
- The Production Innovation Platform's Role in an Enterprise Application Architecture
- Current Solution Offerings
- Rip or Replace
- How and Where to Begin

Advanced Session—PLM's Roles in Additive Manufacturing

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings
- Advanced Session: Today's Trends & Challenges Impacting PLM

Intent: This half-day session describes why Additive Manufacturing (AM) needs to be assimilated into an organization's main processes and business solutions such as PLM and ERP, but also why a different approach to design is needed. Engineers approach design using the 5,000-year-old paradigm that parts are made, then assembled, and eventually become products. Adopting Design-for-Additive-Manufacturing (DfAM) principles, closely coupled with AM manufacturing processes, is essential.

Session Outline:
- Defining Additive Manufacturing
- Why PLM is needed to support AM
- Design for Additive Manufacturing
- Connecting the AM Workgroup to the Enterprise
- Business Justification for Production AM
- Thinking Differently
- How and Where to Begin

Advanced Session—PLM's Roles in Enabling the Circular Economy

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings
- Advanced Session: Today's Trends & Challenges Impacting PLM

Intent: This half-day session describes how the product lifecycle is being extended and may eventually be radically changed, by a new focus on what happens after products reach the end of their traditional useful lives. Recycling, ordinarily deemed the "end" of the lifecycle, has been seen as a one-way trip into scrap yard shredders. The notion of the Circular Economy is upending this constricted view of recycling from termination to turnaround. The scrapping and shredding of the obsolete and the worn-out is being displaced by products expressly designed to be retrieved at end-of-life for reuse, remanufacture, upgrading, and repurposing. Designing for end of life is no longer good enough, products have to be designed for everything (Design for Z).

Session Outline:
- Defining the Circular Economy
- The Circular Economy's Impact on PLM
- PLM's Support of Design for Z
- How and Where to Begin

Advanced Session—PLM & Social Media

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings
- Advanced Session: Today's Trends & Challenges Impacting PLM

Intent: As social media begins to permeate many facets of our lives, the opportunities to use Social Media within a PLM context are increasing at a significant rate. Leading PLM solution providers are providing products that tap into this social phenomenon with tools that can be used to improve communication throughout the design process and beyond. This session will provide an overview of these technologies and what offerings exist today to support PLM. We will also provide a forward-looking view of where these solutions may lead us in the future.

Session Outline:
- Overview of Social Technologies
- Solutions for Social PLM
- How Social Media Can be Used to Support PLM
- Future Directions in Social PLM
- How and Where to Begin

Advanced Session—PLMisGreen

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings
- Advanced Session: Today's Trends & Challenges Impacting PLM

Intent: There are many opportunities to advance the PLM cause through the use of green technologies today. With more and more businesses concerned about our environment and the sustainability of nearly every product, the ability to use PLM to support green initiatives is more important now than ever. This session will cover the importance of green technologies and how they can be supported through the proper application of PLM best practices. We will also talk about ways that these same PLM approaches can lead to better products and more opportunities to capitalize on this growing trend through the proper application of PLM.

Session Outline:
- Overview of Green Technologies
- How PLM can Support Green Initiatives
- What PLM Solution Providers Offer to Support Green
- The Future of Green and Associated Technologies
- How and Where to Begin

Advanced Session—The PLM Commercial Landscape

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings

Intent: This session is an overview of the commercial landscape for PLM solutions, including a review of leading PLM solution providers and their offerings. The session begins with a detailed look at the current market numbers as researched and estimated by CIMdata (a global leader in PLM research and strategic consulting). This session also describes today's "mind-share" PLM solution providers, their backgrounds, solutions, and general strengths and weaknesses.

Session Outline:
- Major PLM Market Trends
- PLM Market Facts & Figures
- Introduction to the Solution Provider Landscape
- Market performance of the Mind-Share Leaders
- Profiles of Mind-Share Leaders

Advanced Session—PLM & Cultural Change Management

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings

Intent: This half-day session covers the importance of cultural change, and how a company should define and execute an appropriate cultural change management plan during the implementation of PLM. In addition, the session describes key cultural change management issues and a set of tools that can be used to define and execute a company's plan.

Session Outline:
- Introduction to Cultural Change
- Getting Ready for Cultural Change
- Understanding Where You Stand
- A Model for Understanding
- Cultural Change Management Plan

Advanced Session—Requirements Management

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings
- Session 8: Expanding PLM Across the Value Chain
- Session 9: Configuration Management's Role in PLM

Intent: This half-day session defines requirements management and how PLM can be used to enable it. Requirements management is the science and art of gathering and managing user, business, technical, and functional requirements within a product development project. Requirements management is all about balance—preventing one class of requirements from overriding another is critical. Effective requirements management ensures that the "voice of the customer" is captured and managed throughout the lifecycle of the product.

Session Outline:
- Introduction to Requirements Management
- Defining Key Functionality
- Requirements Management and PLM
- Current Solution Offerings
- How and Where to Begin

Advanced Session—Systems Engineering & Mechatronics

Duration: ½ day

Prerequisites:

- Session 1: PLM: Key Concepts & Learnings
- Session 8: Expanding PLM Across the Value Chain
- Session 9: Configuration Management's Role in PLM
- Advanced Session: Requirements Management

Intent: This half-day session defines systems engineering and mechatronics, and how PLM can be used to enable it. Systems engineering includes the processes that support the interdisciplinary fields of engineering that focus on the development and organization of complex systems, and mechatronics is the establishment of product development processes and solutions that provide coordinated environments for development of products that are comprised of mechanical, electronic, electrical, software, controls, and documentation components.

Session Outline:

- Introduction to Systems Engineering & Mechatronics
- Defining Key Functionality
- Using PLM to Support Systems Engineering & Mechatronics
- Current Solution Offerings
- How and Where to Begin

Advanced Session—Systems-Driven Systems Development

Duration: ½ day

Prerequisites:

- Session 1: PLM: Key Concepts & Learnings
- Session 8: Expanding PLM Across the Value Chain
- Advanced Session: Requirements Management

Intent: This half-day session defines Simulation-Driven Systems Development (SDSD) and provides insights that help define and benchmark industry best practices for integrating data, processes, tools, and people across all domains that have an impact on the product development process (e.g., mechanical, electrical, software, control systems, chemistry, optics, and other physics).

Session Outline:

- Business Challenges and Opportunities in the age of Digitalization
- System Modeling and Simulation, Systems Engineering & MBSE, and S&A
- SDSD in Various industries
- Benefits Expected & Benefits Achieved
- Adoption Challenges Being Faced
- Innovation Platforms & Enabling the Digital Thread
- Understanding the SDSD Maturity an Organization
- How and Where to Begin

Advanced Session—Simulation Data & Process Management

Duration: ½ day

Prerequisites:

- Session 1: PLM: Key Concepts & Learnings
- Session 8: Expanding PLM Across the Value Chain
- Advanced Session: Systems-Driven Systems Development

Intent: This half-day session defines simulation data and process management and how PLM can be and should be used to enable this enterprise critical capability. This session concentrates on this evolving area of PLM and how simulation can be broadened from a domain exclusively for specialists to a visible and accessible component of product lifecycle management across the entire lifecycle and throughout the extended enterprise.

Session Outline:

- Introduction to Simulation Data & Process Management
- Defining Key Functionality
- Using PLM to Simulation Data & Process Management
- Current Solution Offerings
- How and Where to Begin

Advanced Session—Collaborative Product Development

Duration: ½ day

Prerequisites:

- Session 1: PLM: Key Concepts & Learnings

Intent: This half-day session defines collaborative development (co-dev) and how PLM can be used to enable it. Collaborative Development generally refers to the process that supports two or more groups or firms working together to develop and commercialize a specific product. This session concentrates on how PLM can be used to define and enable a Collaborative Development environment.

Session Outline:

- Introduction to Collaborative Development
- Defining Key Functionality
- Using PLM to Support Collaborative Development
- The Keys to Successful Collaboration
- How and Where to Begin

Advanced Session—Application Lifecycle Management & PLM

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings

Intent: Application Lifecycle Management (ALM) has been used by the software industry to manage software deliverables throughout their design process. Recent advances in PLM and a desire by solution providers to include software development in the PLM process have led to more opportunities to include ALM in the engineering design activities. This session covers the ways that software development and ALM can be included in the overall PLM strategy. Solution provider tools to support this activity will be reviewed and a look at what we see for the future of ALM and PLM will be provided.

Session Outline:
- Overview of ALM Technologies
- Solution providers ALM in PLM Offerings
- How ALM can be supported by PLM
- Future directions for ALM and PLM working together

Advanced Session—Product Portfolio Management

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings
- Session 8: Expanding PLM Across the Value Chain

Intent: This half-day session defines product portfolio management (also known as strategic product planning) and how PLM can be used to enable it. This session focuses on this expanding area of PLM and how portfolio management concentrates on the identification, evaluation, and management of the "family" or portfolio of products that a company offers and maintains in such a manner that they (i.e., the products they offer) bring the company an optimum return on investment.

Session Outline:
- Introduction to Product Portfolio Management
- Defining Key Functionality
- Using PLM to Support Product Portfolio Management
- Current Solution Offerings
- How and Where to Begin

Advanced Session—PLM & Enterprise Program Management

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings

Intent: This half-day session defines enterprise program management and how PLM can be used to enable it. Generally speaking, enterprise program management is concerned with managing a portfolio of multiple ongoing interdependent projects. Enterprise program management enables a company to manage all of the individual projects that are initiated and executed in order to conduct product development, delivery, and support.

Session Outline:
- Introduction to Enterprise Program Management
- Defining Key Functionality
- Using PLM to Support Enterprise Program Management
- Current Solution Offerings & Approaches
- How and Where to Begin

Advanced Session—Enterprise Content Management

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings
- Session 8: Expanding PLM Across the Value Chain

Intent: This half-day session defines enterprise content management and how PLM can be used to enable it. This session focuses on how product content management (e.g., the creation and management of manuals, labels, packaging, and other localized published information) can be and often needs to be broadened from a domain exclusively for technical documentation specialists, and transformed into a visible and accessible component of the product development process across the full product lifecycle and throughout the extended enterprise.

Session Outline:
- Introduction to Enterprise Content Management
- Defining Key Functionality
- Using PLM to Support Enterprise Content Management
- Current Solution Offerings & Approaches
- How and Where to Begin

Advanced Session—Maintenance, Repair & Overhaul/Operations (MRO)

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings
- Session 8: Expanding PLM Across the Value Chain

Intent: This half-day session defines maintenance, repair and overhaul/operations (MRO) and how PLM can be used to enable it. This session concentrates on this expanding area of PLM and how MRO can and should be part of an enterprise's PLM strategy, especially for companies that design and maintain long lifecycle products. MRO is particularly critical for those companies that realize that in order to maintain their products in a cost-effective manner, they must maintain the configuration of their products and all of the associated product definition information for the lifecycles of those products.

Session Outline:
- Introduction to MRO
- Defining Key Functionality
- Using PLM to Support MRO
- Current Solution Offerings
- How and Where to Begin

Advanced Session—Strategic Sourcing

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings
- Session 8: Expanding PLM Across the Value Chain

Intent: This half-day session defines strategic sourcing and how PLM can be used to enable it. This session concentrates on how strategic sourcing can and should be part of an enterprise's PLM strategy. Fundamentally, strategic sourcing is comprised of eight activities: (1) assessment of a company's current spend; (2) assessment of the supply market; (3) total cost analyses; (4) identification of suitable suppliers; (5) development of a sourcing strategy; (6) negotiation with suppliers; (7) implementation of a new supply structure; and (8) track results and restart assessment. Each of these activities will be discussed in the context of a PLM enabled environment.

Session Outline:
- Introduction to Strategic Sourcing
- Defining Key Functionality
- Using PLM to Support Strategic Sourcing
- Current Solution Offerings
- How and Where to Begin

Advanced Session—Digital Manufacturing

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings
- Session 8: Expanding PLM Across the Value Chain

Intent: The scope of this half-day educational and discussion session includes the definition of today's digital manufacturing capabilities, their benefits, and selected solution providers and their offerings. The session also includes the review of a number of industrial case studies.

Session Outline:
- Background
- Defining the Solution Space
- Current Solution Offerings
- Select Case Studies
- Reported Benefits
- Where to Begin

Advanced Session—PLM Implementation Best Practices

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings

Intent: This half-day session provides a set of detailed guidelines for executing a successful PLM program. The session covers all the main phases of a PLM program, including high-level planning, development of strategy and tactics, business requirements definition, evaluation and selection of available solutions, implementation planning, and post deployment support. When properly followed, these guidelines will help an organization reduce the time it takes to define, implement, and support a PLM strategy.

Session Outline:
- Best Practice Introduction
- Review of High Level Planning
- Defining a Strategy & Tactics
- Defining Business Requirements
- Evaluation of Available Solutions
- Selecting the Solution
- Planning the Implementation
- Post Deployment Support

Advanced Session—Data Modeling within PLM

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings
- Session 6: PLM Process Development & Testing

Intent: This half-day session provides an understanding of how to best define and implement a PLM-enabled data model. The session also discusses and illustrates the link between Use Case development and PLM-enabled data modeling.

Session Outline:
- Introduction to PLM Data Modeling
- Use Cases in Support of Data Modeling
- Refinement of Data Model Requirements
- Development/Extension of PLM Data Models
- How and Where to Begin

Advanced Session—Classification and Data Search & Retrieve

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings
- Advanced Session: Data Modeling within PLM

Intent: This half-day session provides an understanding of how to best define and implement PLM-enabled data classification schemes in support of data search and retrieval. The session also discusses and illustrates some of the tools that can be used to accomplish this task.

Session Outline:
- Introduction to Classification Management
- Defining Key Functionality
- Using PLM to Support Classification Management
- Using PLM to Support Data Search & Retrieval
- How and Where to Begin

Advanced Session—Security & IP Management

Duration: ½ day

Prerequisites:

- Session 1: PLM: Key Concepts & Learnings
- Session 7: Integrating PLM within the Enterprise
- Advanced Session: Data Modeling within PLM
- Advanced Session: Classification and Data Search & Retrieve

Intent: This half-day session provides an understanding how to best define and implement security policies and procedures within a PLM environment, and how PLM can be used to enable intellectual property management. The session concentrates on describing the main security approaches taken and how some of the key PLM solution providers support this area of consideration. The session will also describe examples from a few industries including aerospace & defense and medical device, to name two.

Session Outline:

- Introduction to Security & IP Management
- Defining Key Functionality
- Using PLM to Support Security & IP Management
- Current Solution Offerings
- Industry Examples
- How and Where to Begin

Advanced Session—Integrating PLM & ERP

Duration: ½ day

Prerequisites:

- Session 1: PLM: Key Concepts & Learnings
- Session 7: Integrating PLM within the Enterprise

Intent: This half-day session provides an understanding of how to best define and implement a PLM to ERP integration. The session concentrates on describing the main approaches taken and how some of the key PLM solution providers support this enterprise integration requirement.

Session Outline:

- An Introduction to PLM to ERP Integration
- Alternative Approaches
- Challenges & Issues to Success
- Industry Examples
- How and Where to Begin

Advanced Session—Advanced Configuration Management (CMII) & PLM

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings
- Session 9: Configuration Management's Role in PLM

Intent: This half-day session defines configuration management (CM) and how PLM can be used to enable it. The session provides an overview of CMII, an industry neutral configuration management best practice. Fundamentally, CMII is an advanced version of CM. CM is the process of managing products, facilities and processes by managing their requirements, including changes, and assuring conformance in each case.

Session Outline:
- An Introduction to the CMII-Based Business Process Infrastructure
- Structured Configuration Management
- Change Effectivities and Traceability
- The CMII Closed-Loop Change Process

Advanced Session—PLM in a Specification Driven Industry

Duration: ½ day

Prerequisites:
- Session 1: PLM: Key Concepts & Learnings
- Session 2: PLM Benefits & Potential Value
- Session 3: Strategy & Solution Definition
- Session 4: PLM Solution Evaluation & Selection
- Session 5: Implementation, Monitoring & Continuous Improvement

Intent: This half-day session discusses how PLM enabling solutions can and should be used in a specification driven industry (i.e., an industry that uses specifications as the main product definition driver, rather than a 3D model or bill of material). Some of these industries include food & beverage, personal care products, etc.

Session Outline:
- Defining Specification Management
- Defining Key Functionality
- Using PLM to Support Specification Management
- Current Solution Offerings
- How and Where to Begin