

AEC & Manufacturing Convergence Consulting Practice

Adding Lifecycle Value for Facilities & Infrastructure Projects and Companies

Strategies and business processes among organizations in the Architecture, Engineering, and Construction (AEC) and Engineering, Procurement, and Construction (EPC) fields are increasingly leveraging methods previously adopted in the manufacturing industry. Prefabrication, lean practices, and other techniques are being adopted in the AEC and EPC industries to improve productivity and deliver greater value throughout the lifecycle of facilities and infrastructure (i.e., from concept or proposal through decommissioning). At the same time, manufacturing companies have an opportunity to better serve their AEC and EPC customers and gain competitive advantage, starting from initial bidding and continuing into aftersales service.

Product Lifecycle Management (PLM) enabling solutions have been widely adopted in manufacturing as a strategic business approach that puts products and services, and the processes by which they are defined, at the heart of the company. PLM is directly linked to business strategy and empowers the business, enables product and process innovation, and enhances both top- and bottom-line business benefits. In its early days, PLM created competitive advantages for manufacturers. In today's global economy, PLM is a competitive necessity.

AEC and EPC companies are collectively faced with a number of challenges. Construction productivity has been stagnant despite the adoption of Building Information Modeling (BIM) processes and supporting technologies. Owners/operators are adding new contractual terms that dramatically increase the quantity and quality of information deliverables. The trend toward smart buildings and connected infrastructure is further driving the need for a better approach, and standards are emerging to support the need for persistent, structured information models.

CIMdata's AEC & Manufacturing Convergence Consulting Practice adds knowledge, practical experience, roadmaps, best practices, and focused research about available solutions and their providers to CIMdata's established consulting services. The practice focuses on extending and connecting PLM processes to encompass and augment BIM for clients throughout the AEC and EPC value chains, including manufacturers, fabricators, architectural and engineering firms, construction firms, contractors, and owner/operators.

AEC & Manufacturing Convergence Knowledge Council

CIMdata's AEC & Manufacturing Convergence Knowledge Council for industry leaders in the AEC, EPC, and associated manufacturing industries has been established to maximize the benefits participants receive from their PLM-related investments, including their investments in BIM. Enrollment is open to major AEC and EPC firms, manufacturers, and solution providers serving these fields who wish to collectively address current process challenges, close technology gaps, expose needed standards, and co-sponsor collaborative research with CIMdata.

Participation in the Knowledge Council enables members to make more informed business decisions by providing timely and valuable information, insights, and advice while networking with companies with similar challenges. Additionally, annual participation in this council facilitates an ongoing working relationship with CIMdata that strengthens and enhances the value of support available to each member.

The CIMdata Approach

CIMdata's methodology recognizes that the successful



planning, selection, and implementation of new business strategies and solutions involves ongoing, cyclical processes comprised of six phases. This applies to every organization—whatever the industry, whatever the particular requirements or applications, and whatever the desired end result. Each of the six phases (as illustrated above) is separate and unique. Each is equally important, and for the outcome to be successful, each requires a set of targeted activities. CIMdata tailors its services to the specific business and operational needs of its clients, and is ready to provide support during each of the six phases.

CIMdata's consulting services concentrate on how to best leverage the full range of PLM-enabling solutions by integrating these into people's daily work processes. Many companies are using BIM and other elements of PLM solutions separately in their existing processes with positive impact. At the same time, a huge potential remains in leveraging PLM-enabling technologies and processes to include BIM workflows for design, engineering, bidding, manufacturing and fabrication, construction, and customer service integration across the value chain.

Strategy Development

Strategy defines the purpose for collaboration and is derived from the business objectives. It defines what is required for transparency, accountability, execution velocity, and effective value chain collaboration. Defining the purpose is a crucial step in accelerating adoption of new processes and associated enabling technologies in a way closely aligned with the desired cultural attributes.

It is also critical to recognize that strategy is not about deploying technologies, but rather about clarifying internal and external collaboration and robust decision-making processes and capabilities needed to achieve the business objectives as a critical first step.

Solution Definition

CIMdata's consulting methodology includes a number of tailored activities that support the development of a detailed solution definition. For example, CIMdata conducts a maturity assessment to understand the existing barriers to collaboration and the gaps based on leadership behaviors; organizational design; the processes and techniques for knowledge sharing, discovery, and acquisition; and the existing culture. The assessment provides insights into the current state from which to develop a roadmap to the future vision.

CIMdata's methodology supports the evaluation of solutions based on critical aspects of user adoption of new processes and associated enabling technologies. These include speed, seamless integration, ease of use, and alignment to existing workflows, to name a few.

CIMdata brings the most comprehensive view of PLM tools, processes, and techniques that can meet specific business objectives. CIMdata also assists our clients in aligning

functional organizations such as sales, estimating, engineering, procurement, project management, operations, customer service, and information technology to a common solution that satisfies the business needs of each organization individually and collectively.

Solution Evaluation & Selection

CIMdata's extensive understanding of the commercially available solutions dramatically reduces the time needed to evaluate and select the most appropriate solutions. CIMdata's evaluation and selection methodology helps an organization focus on the business and technical issues that are most critical to achieve its strategy and vision. By leveraging CIMdata's knowledge of the available solutions and our clients' specific requirements, we are able to provide a short list of appropriate solutions for further evaluation utilizing a number of technical and business-oriented templates and methodologies.

Implementation Planning

Upon the selection of the appropriate enabling solutions, CIMdata's support continues through implementation planning. Over the years, CIMdata has provided a significant amount of strategic advice and counsel during this critical, but often overlooked phase of a project. CIMdata offers best practice support for statement of work development, contract negotiation, implementation team structuring, "to-be" process definition, systems definition, cultural and organizational change management, training, and more. CIMdata provides support tailored to our client's implementation planning needs.

Implementation Support

Any new strategic solution implementation requires both active implementation support and leadership engagement. CIMdata assists with creation of a team of change agents, representing different disciplines and lines of business that must be assembled to push adoption deep into the organization.

Implementation success requires executive sponsorship. CIMdata assists leadership with developing clear, simple, and straightforward guidelines. The emphasis is on innovation and business improvement as the primary drivers, but with the recognition that personalization is necessary to foster trust, as well as willingness to share and connect.

CIMdata assists with defining and establishing a group of communities representing various interests and functions within the organization, and leveraging them effectively towards the organizational goals. It is crucial that people enjoy the experience and work to gain quick wins. As these quick wins diffuse throughout the organization the implementation will gain momentum.

Monitoring & Continuous Improvement

Early on, the primary means of measuring adoption is to identify and celebrate successes and "smart" failures that lead

to organizational learning. At this stage, it is also important to recognize the power of collaborators and innovators, and their positive impact on solution adoption. CIMdata leverages a set of assessment techniques and other best practice experiences to identify areas requiring improvement and then recommends roadmaps to move forward.

The AEC & Manufacturing Convergence Consulting Practice provides essential support in all areas of the methodology outlined above. To learn more, please contact CIMdata at +1 734.668.9922.

About CIMdata

CIMdata, an independent worldwide firm, provides strategic management consulting to maximize an enterprise's ability to design and deliver innovative products and services through the application of Product Lifecycle Management (PLM) solutions. Since its founding over thirty years ago, CIMdata has delivered world-class knowledge, expertise, and best-practice methods on PLM solutions. These solutions incorporate both business processes and a wide-ranging set of PLM-enabling technologies.

CIMdata works with both industrial organizations and solution providers of technologies and services seeking competitive advantage in the global economy. CIMdata helps industrial

organizations establish effective PLM strategies, assists in the identification of requirements and selection of PLM technologies, helps organizations optimize their operational structure and processes to implement solutions, and assists in the deployment of these solutions.

For PLM solution providers, CIMdata helps define business and market strategies, delivers worldwide market information and analyses, provides education and support for internal sales and marketing teams, as well as overall support at all stages of business and product programs to make them optimally effective in their markets.

In addition to consulting, CIMdata conducts research, provides PLM-focused subscription services, and produces several commercial publications. The company also provides industry education through PLM certificate programs, seminars, and conferences worldwide. CIMdata serves clients around the world from offices in North America, Europe, and Asia-Pacific.

To learn more about CIMdata's services, visit our website at www.CIMdata.com or contact CIMdata at: 3909 Research Park Drive, Ann Arbor, MI 48108, USA. Tel: +1 734.668.9922. Fax: +1 734.668.1957; or at Oogststraat 20, 6004 CV Weert, The Netherlands. Tel: +31 (0) 495.533.666.