

# **LOGIC DESIGN**

corporation

## Consulting Services



[www.idcglobal.com](http://www.idcglobal.com)

# LDC Consulting Services

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Founded in 1983 by Lars Hedman and Eric Hedman, Logic Design Corporation is a software development and technology integration company that specializes in innovative solutions for engineering and manufacturing. With over 25 years of business, software and manufacturing experience, LDC can provide your company with services that range from business and manufacturing process consulting to the design and programming of custom software applications. Our expertise helps manufacturing companies devise innovative methods to improve existing business and manufacturing procedures and processes to better compete in a competitive global manufacturing marketplace.

LDC provides consulting services that includes the following areas of expertise:

- **Business Process Consulting**
- **Engineering & Manufacturing Process Consulting**
- **Software Development**
- **2D / 3D CAD Programming**



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## Business Process Consulting



- **Strategic Business Planning**
- **Proposal / RFQ / Presentation Development**
- **Business Plan Development / Financial Modeling**
- **Project Management**
- **Enterprise Workflow Audit / Cost Analysis**

## Engineering & Manufacturing Process Consulting



- **Strategic Automation Planning**
- **Engineering & Manufacturing Workflow Planning & Execution**
- **Product Configuration**
- **Routing Planning & Implementation**
- **Shop Floor Integration**

## Software Development



- **Software Design & Development**
- **Software Testing & Business Analysis**
- **Technology Integration Programming**
- **Web Site Design & Development**
- **Database / ERP Connectivity**

## 2D / 3D CAD Programming



- **Product Configuration / 3D Drawing Generation**
- **CAD API Programming**
- **Shop Floor Drawing Preparation**
- **Machine Tool Programming**
- **CAD to ERP Integration**

# ***Business Process Consulting***

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- **Strategic Business Planning**
- **Proposal / RFQ / Presentation Development**
- **Business Plan Development / Financial Modeling**
- **Project Management**
- **Enterprise Workflow Audit / Cost Analysis**

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Logic Design Corporation has extensive experience in the area of business process consulting. This includes strategic business planning to the development of Proposals, RFQ's, Investor Business Plans and Financial Modeling. This also includes Project Management and the analysis of the entire workflow process from sales, to engineering, manufacturing and accounting. The following is an explanation of each of the areas of expertise with Business Process Consulting:

## ***Strategic Business Planning***

LDC has over 25 years of experience of working with manufacturing, and non-manufacturing companies that range in size from small to Fortune 500. This experience has included devising strategies for businesses that are based on an understanding of how information is generated and managed from quoting to final product delivery. LDC Strategic Business Planning can help companies develop the most cost effective method to improve efficiency and reduce labor costs.

## ***Proposal / RFQ / Presentation Development***

LDC has extensive experience in the development of sales proposals and request for quotes that require a strong technical understanding of the target marketing and the products and services that are proposed. This also includes the development of effective presentations required to deliver an effective and easy to understand message to the potential customer.

## ***Business Plan Development / Financial Modeling***

LDC has extensive experience in the development of investor business plans for the raising of venture capital. This also includes extensive experience developing the financial models that are required for the investor business plan.

## ***Project Management***

LDC has extensive experience managing software development and technology projects. This includes extensive experience understanding accounting and cash flow to an in depth knowledge of software and hardware technologies that range from ERP, PLM, PDM, CAD, Supply Chain Management to the integration of information to machine tools on the shop floor.

## ***Enterprise Workflow Audit / Cost Analysis***

LDC has developed an extensive library of tools that can help a manufacturing company effectively track workflow from quoting to final product shipment and to understand and accurately track the labor costs associated with the workflow. This helps companies to better understand potential improvement areas, and provides the necessary information to understand the areas that make sense to improve. The net result of workflow cost analysis is that it helps with process improvement initiatives to deliver a significant Return On Investment.

# Engineering & Manufacturing Process Consulting

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- **Strategic Automation Planning**
- **Engineering & Manufacturing Workflow Planning & Execution**
- **Product Configuration**
- **Routing Planning & Implementation**
- **Shop Floor Integration**

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Logic Design Corporation has extensive experience in the area of engineering and manufacturing process consulting. This process starts with Strategic Automation Planning. Strategic Automation Planning is the process of charting out the engineering and manufacturing workflow of manufacturing company to develop a plan of what software and hardware technologies should be upgraded, augmented or replaced based on the goal of increasing engineering and manufacturing capacity while reducing labor costs. This process also includes the planning and execution of software and hardware automation initiatives.

## **Strategic Automation Planning**

LDC has extensive engineering and manufacturing experience to help manufacturing companies develop a strategic automation plan that serves as an effective road map and blueprint to implement new software and hardware technologies including the expertise to integrate the two.

## **Engineering & Manufacturing Workflow Planning & Execution**

LDC can work closely with your staff to help plan and execute a cost effective workflow that will result in improved workflow efficiency while increasing engineering and manufacturing capacity. We have worked with dozens of manufacturing companies to help speed up the design and manufacturing of engineered to order products.

## **Product Configuration**

LDC provides a high level of expertise in the area of product configuration. This includes improving the efficiency of configuring engineered to order products by automating the process of manual product configuration. LDC can work with existing configuration software that starts at the quoting and order entry levels and enhance this process to include the automated configuration of simple-to-complex products from quoting to the automated preparation of information for the shop floor.

## **Routing Planning & Implementation**

LDC can work closely with your company to improve the process of routing production through manufacturing and the shop floor. LDC has extensive experience helping companies reduce manufacturing costs and speeding up product delivery by determining the most cost effective processes and machine tools to manufacture your products based on production volume.

## **Shop Floor Integration**

LDC has extensive experience integrating machines on the shop floor with engineering, manufacturing and accounting. This includes the automated preparation of production order information from your ERP / Business System to programming of machine tools and the automated collection of production information. LDC can help your company achieve an Integrated Digital Factory environment with the two way integration of information to and from the shop floor.

# Software Development

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- **Software Design & Development**
- **Software Testing & Business Analysis**
- **Technology Integration Programming**
- **Web Site Design & Development**
- **Database / ERP Connectivity**

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Logic Design Corporation has over 25 years of software development experience that include a wide range of applications from accounting to quoting, to engineering and manufacturing, to the programming factory machine tools, and web site development. As developers of the **Global Edge 2011 – Automated Workflow** system (<http://www.ldcglobal.com/images/Global-Edge-2011-Automated-Workflow.pdf>), LDC has extensive experience delivering cost effective software applications for companies that range from small to Fortune 500 companies. LDC has the expertise to design, develop and test software applications that range from simple to complex.

## **Software Design & Development**

LDC has extensive experience in the design and development of software applications for business, engineering, manufacturing and accounting. LDC can devise software solutions that simplify tasks that are normally associated with quoting, order entry, accounting, project management, engineering and manufacturing including the direct integration and programming of machine tools on the shop floor.

## **Software Testing & Business Analysis**

As part of most software development efforts, LDC can provide the testing of software including functional test plans that help insure that software applications are performing as required.

## **Technology Integration Programming**

LDC has extensive experience in the integration and programming a wide range of software and hardware technologies ranging from ERP, CAD and shop floor automation. LDC provides a high level of expertise that is normally required when integrating software and hardware technologies. The result of technology integration programming includes the ability to deliver accurate information when and where need throughout a manufacturing enterprise.

## **Web Site Design & Development**

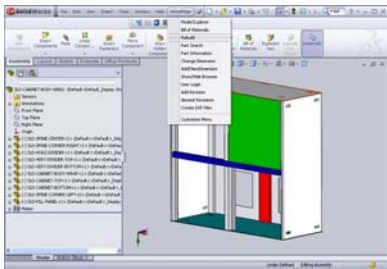
LDC has experience with web site design and development which includes the development of content that conveys an effective message to your target audience. Please visit [www.ldcglobal.com](http://www.ldcglobal.com) for an example of our web development capabilities.

## **Database / ERP Connectivity**

LDC has extensive experience in the integration of database applications with your ERP / Business System. This includes the real-time integration of information from your various unconnected data centers that range from spreadsheets, Access Databases, CAD, and your legacy systems to provide a single version of truth database throughout your business enterprise.

## 2D / 3D CAD Programming

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- **Product Configuration / 3D Drawing Generation**
- **CAD API Programming**
- **Shop Floor Drawing Preparation**
- **Machine Tool Programming**
- **CAD to ERP Integration**

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Logic Design Corporation has a high level of expertise programming 2D and 3D CAD software. This expertise includes the automated configuration of simple-to-complex products including the automated generation of 2D and 3D CAD drawings based on customer / product specifications. This also includes the expertise to program machine tools on the shop floor based on information contained inside a 3D CAD Model. LDC also has the extensive expertise to integrate attribute information contained in a CAD drawing that is dynamically with an ERP / Business System.

### **Product Configuration / 3D Drawing Generation**

LDC has extensive experience in the area of automated product configuration and 3D CAD drawing generation. This expertise is the result of software developed internally by LDC and successfully implemented at both small and Fortune 500 companies. Automated product configuration provides the ability to automate many of the manual engineering tasks normally associated with the process of configuring products and generating the necessary CAD drawings for those configured products.

### **CAD API Programming**

LDC has extensive experience programming CAD software utilizing the application programming interfaces (API). This experience includes a wide range of CAD systems that include:

- SolidWorks 3D CAD
- Autodesk Inventor 3D CAD
- Autodesk AutoCAD 2D CAD
- Solid Edge 3D CAD
- View Logic Electronic CAD
- P-CAD Electronic CAD
- Lockheed Micro Cadam

### **Shop Floor Drawing Preparation**

LDC has extensive experience in the automated preparation of shop floor drawings that are automatically adjusted in accordance to the machine a sheet metal part will be fabricated on. This includes automatically adjusting the size of sheet metal part drawing based on the bend tolerance of a sheet metal bending machine.

### **Machine Tool Programming**

LDC has extensive experience programming a shop floor machine tool such as a robotic folder from 3D Sheet Metal CAD Model based on the attributes contained in the CAD Model. This expertise also includes the automatic programming of PLC controllers of shop floor machine tools based on the dimensions within a CAD drawing.

### **CAD to ERP Integration**

LDC has extensive experience integrating CAD drawings directly with an ERP / Business System. This type of CAD to ERP integration eliminates the manual retyping of CAD into an ERP / Business System and helps insure that accurate information is produced at the design source and shared electronically with the enterprise.

# Programming Services & Platforms

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Logic Design Corporation provides software development services that range from engineering and manufacturing to accounting / ERP applications including 3D CAD programming. Our services also include developing software specifications that help insure software projects are successful and fall within budget. We can either work with your IT staff to supplement their efforts or take full charge of a software project if desired. Our software expertise starts with a very efficient design of the data flow and database structure for optimum software performance.

## ▶ Custom Applications & Programming Services

- Development of Software Specifications
- Database Design & Programming
- Data Migration & Conversion
- Product Configuration
- Engineering, Manufacturing and Accounting Applications
- ERP Systems Interface (Oracle, SAP, Legacy, etc.)
- Process Control
- Shop Floor Data Collection / Reporting
- PLC Programming / Connectivity
- Mainframe Connectivity
- System Training & Support

## ▶ Programming Languages

- 4Js Genero / Business Development Language
- Informix Dynamic 4GL / Informix 4GL
- Visual Basic
- Visual Studio.NET
- C++ / Visual C++

## ▶ SQL Databases

- DB2
- Genero DB
- Informix Dynamic Server
- Oracle
- Progress
- SQL Server

## ▶ CAD Software

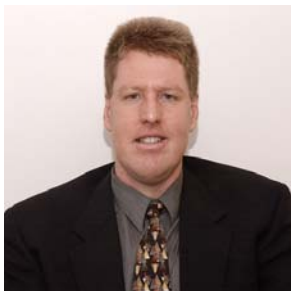
- SolidWorks 3D CAD
- Autodesk Inventor 3D CAD
- Autodesk 2D AutoCAD
- Solid Edge 3D CAD
- View Logic Electronic CAD
- P-CAD Electronic CAD
- Lockheed Micro Cadam

## ▶ Platforms

- Linux
- Unix (AIX, SCO, H.P., SUN, IBM)
- Windows 95 / 98 / NT / 2000 / XP / Vista / Windows 7
- LANs, WANs, TCP/IP

## Lars V. Hedman, Senior Consultant

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Mr. Hedman is Co-Founder and President of Logic Design Corporation with over 25 years of experience working with manufacturing companies that range from small to Fortune 500 developing innovative methods that help transform engineering and manufacturing. His experience includes consultation on and design of engineering and manufacturing software solutions that range from PLM (Product Lifecycle Management) to ERP (Enterprise Resource Planning) software. Mr. Hedman has extensive experience in business process consulting and the development of company strategies and business planning. As President of Logic Design Corporation, Mr. Hedman has extensive experience in business development including the development and execution of effective sales and marketing plans. He received a Bachelors of Applied Science Degree from St. Mary's University in San Antonio, Texas.

His consulting background includes the following:

- **Proposal / RFQ / Presentation Development**
- **Strategic Business Planning**
- **Business Plan Development / Financial Modeling**
- **Project Management**
- **Enterprise Workflow Audit / Cost Analysis**
- **Strategic Automation Planning**
- **Engineering & Manufacturing Workflow Planning & Execution**
- **Product Configuration / Routing Planning & Implementation**
- **Software Testing & Business Analysis**
- **Web Site Design & Development**

Lars Hedman has extensive experience in all facets of a software company. This includes the entrepreneurial drive to formulate ideas to address the manufacturing marketplace and successfully execute those ideas. Mr. Hedman has the experience and expertise to work in a team environment to promote the ideas of many to determine the best and practical solution to marketplace challenges. This is driven by the experience of consulting with hundreds of people and companies throughout the years to better understand how the design and manufacturing process works within a manufacturing environment. The objective of the products and services of Logic Design Corporation has been to determine the common methods utilized by several manufacturing companies to devise a common software solution that applies to most manufacturing companies.

The net result of this philosophy, which has been carried through the LDC developed **Global Edge 2011 – Automated Workflow** software (<http://www.ldcglobal.com/images/Global-Edge-2011-Automated-Workflow.pdf>), has been to develop an innovative and configurable software solution that solves the engineering and manufacturing workflow challenges of small, medium, and large scale manufacturing enterprises. Logic Design Corporation has been able to provide companies like Cooper Power Systems and Johnson Controls with innovative software solutions that help transform their engineering and manufacturing workflow process.

## ***Eric R. Hedman, Senior Consultant***

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Mr. Hedman is Co-Founder and Chief Technical Officer of Logic Design Corporation with over 25 years of experience as Director of Software Development with applications that range from engineering, to manufacturing, and accounting. He is the chief architect of the **Global Edge 2011 – Automated Workflow** software system (<http://www.ldcglobal.com/images/Global-Edge-2011-Automated-Workflow.pdf>). His responsibilities include the management of the programming / support team of the Company, project planning and project implementation. Mr. Hedman's experience also includes over 25 years of business process consulting experience for manufacturing companies that range from small to Fortune 200. He is also a published author of articles on a range of technology issues. He received a Bachelors of Science Degree in Mechanical Engineering from the University of Wisconsin.

His consulting background includes the following:

- **Strategic Business Planning**
- **Business Plan Development / Financial Modeling**
- **Project Management**
- **Strategic Automation Planning**
- **Engineering & Manufacturing Workflow Planning & Execution**
- **Routing Planning & Implementation**
- **Shop Floor Integration**
- **Software Design & Development**
- **Technology Integration Programming**
- **Database / ERP Connectivity**
- **Product Configuration / Automated CAD Drawing Generation**
- **Machine Tool Programming**
- **Autodesk Inventor / SolidWorks 3D CAD Programming**

Eric Hedman has extensive experience in all facets of a software company which also includes recognition in the Aerospace and Defense community as a regular contributor to several publications. Mr. Hedman's body of work includes the following:

- **50 plus Articles on "The Space Review" Web Site (<http://www.thespacereview.com/article/372/1>)**
- **Interviewed Congressman Jim Sensenbrenner**
- **Interviewed University of Wisconsin Professor Gerald Kulcinski – Member of NASA's Advisory Council and developer of world's only working Helium 3 Fusion Reactor**
- **Feature article published in "Space Times" the journal of the American Astronautical Society**
- **Invited to deliver presentation on Artificial Intelligence at the 2008 International Space Development Conference hosted by Hugh Downs of ABC News and Miles O'Brien of CNN**
- **Invited to take part in round table discussion at the Center for Strategic and International Studies in Washington DC**
- **90 Minute interview on the nationally syndicated radio show "The Space Show" hosted by Dr. David Livingston**

## LDC Consulting Services (Key Project History)

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Logic Design Corporation has delivered over a hundred successful projects since 1983 that range from consulting services to application software development. These projects have included the development of a complete accounting system, extensive 2D and 3D CAD software applications, design and programming of workflow software from quoting to final product shipment, including the direct integration and programming of shop floor machine tools. Most projects have included extensive process and workflow consulting to devise workflow and software solutions to automate labor intensive tasks throughout the entire manufacturing enterprise.

The following is some of the customers Logic Design Corporation has successfully completed projects for:

- **Cooper Power Systems – Waukesha, Wisconsin**
- **RAS Systems – Atlanta, Georgia / Sindelfingen, Germany**
- **DAVI Promau – Cesena, Italy**
- **Johnson Controls – Watertown / Milwaukee, Wisconsin**
- **TDK-Lambda Americas – Melville, New York**
- **Siemens Water Technologies – Waukesha, Wisconsin**
- **Carron Net Company – Two Rivers, Wisconsin**
- **AFW Foundry – Lannon, Wisconsin**
- **Estes Design & Manufacturing – Indianapolis, Indiana**
- **Expro Americas – Burleson, Texas**
- **Nelson Industries – Black River Falls, Wisconsin**
- **Aztek Engineering – Boulder, Colorado**
- **Safway Steel – Waukesha, Wisconsin**
- **Thermo Electron – Kaukauna, Wisconsin**

### ***Cooper Power Systems Success Story Article***

As a result of the products and services delivered to Cooper Power Systems by Logic Design Corporation, a success story article was published in The Fabricator Magazine in the August 2009 issue. The Fabricator Magazine is the preeminent publication in the sheet metal fabrication industry. The following is a link to the success story article as it appears on The Fabricator web site and as it appears on the Logic Design Corporation web site:

<http://www.thefabricator.com/article/folding/koing-keystrokes>

<http://www.ldcglobal.com/images/The-Fabricator-August-2009.pdf>

### ***Johnson Controls Success Story Article***

As a result of the products and services delivered to Johnson Controls by Logic Design Corporation, a success story article was published in Informix Magazine in the Summer 2000 issue. The following is a link to the success story article as it appears on the Logic Design Corporation web site:

<http://www.ldcglobal.com/images/Johnson-Controls-Success-Story.pdf>

#### ***Reuse Rather than Re-Create – Quit Reinventing the Wheel!***

*“Without the Global Edge – Product Configurator, we would need to create hundreds of bill of materials (the list of damper components), which requires hundreds of engineering and clerical hours to create and maintain. Orders that once took up to four hours are now processed within 20 seconds.”*

**Steve Yoder, Damper Cell Manager**  
**Johnson Controls – Watertown, Wisconsin**

## Company Overview

Founded in 1983, Logic Design Corporation is a software consulting and development company that specializes in innovative, leading edge software solutions that help manufacturing companies transform engineering and manufacturing to design and build products better, faster and cheaper. LDC helps your company stay ahead of the competition with proven products and services that are practical to implement and deliver a rapid and significant Return On Investment. LDC enables manufacturing companies to achieve high levels of engineering and manufacturing productivity and help attain an "INTEGRATED DIGITAL FACTORY" environment with products and services that include:

- ▶ Consulting Services
- ▶ Global Edge® 2011 – Automated Workflow
- ▶ INTEGRATED DIGITAL FACTORY
- ▶ 2D / 3D CAD Programming
- ▶ Shop Floor Integration / Automation Planning
- ▶ Technology Integration Programming



Johnson Controls, Cooper Power Systems, Siemens, and Lambda Electronics are some of the many companies that have benefited from the products and services of Logic Design Corporation. Benefits provided have included significantly reducing engineering and manufacturing cycle times by automating many of the manual time consuming workflow tasks that range from product configuration to drawing generation, to providing the shop floor with complete information when and where needed. For more information on how the products and services of Logic Design Corporation can help your company achieve significant productivity gains, faster delivery times, improved product quality, and reduced costs, please visit [www.ldcglobal.com](http://www.ldcglobal.com) or contact Logic Design Corporation directly.

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## Mission Statement

*“Our Goal is to provide manufacturers with innovative, cost-effective solutions for reducing costs, improving productivity and streamlining operations to achieve a competitive global edge.”*