

IPRO 320  
Planning the Implementation of a New  
Enterprise Resource Planning Software Platform

Project Plan

Team Members:

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## Objective

The purpose of IPRO 320 is to improve processes and work flow for Arrow Gear by improving their use of Infor Visual Enterprise Resource Planning Software. At the end of the Spring 2007 semester, the work of this IPRO will lead to Arrow Gear operating more efficiently, allowing them to take on more customers, increase profit, and grow as a company. Specific objectives in achieving this include:

- ◆ Documenting current workflow and processes involved in gear manufacturing
- ◆ Detailing current redundancies and inefficiencies with Visual ERP 6.3.8
- ◆ Identifying improvements needed with Visual ERP
- ◆ Determining benefits of upgrading to Visual ERP 6.5.2
- ◆ Installing and configuring Visual ERP 6.5.2
- ◆ Documenting process issues that still need to be addressed after the install

## Background

Spring 2007 is the first semester for IPRO 320. The project team is working with the company Arrow Gear, with the goal of improving overall operating efficiency throughout the use of its Enterprise Resource Planning (ERP) software.

Arrow Gear is among the most technologically advanced gear manufacturers in the world. Its facilities in Downers Grove contain state-of-the-art technologies for full design, manufacturing, heat treatment and inspection of a wide variety of gear and gearbox products. Arrow Gear is particularly well-known for its extensive expertise in the production of spiral bevel gears, they are also heavily involved with spur and helical gearing, and the application of gearboxes for the aerospace industry. Arrow Gear's technologies for production not only allow them to manufacture a wide range of gears almost entirely in-house, but also to meet the requirements of the most demanding customers. With both commercial and military customers, Arrow has market segments in everything from printing presses and robotics to aircraft, helicopters, and rockets.

As a well-known company, Arrow Gear has no shortage of customers and orders; they are currently working at maximum capacity to fulfill the demand. To manage and track the work, they are currently using Infor Visual ERP software, version 6.3.8. The software can track materials, inventory, employee labor, work orders, manufacturing processes, scheduling, quality assurance, and more.

As Arrow Gear first used Visual software, however, some old systems for tracking were kept in place instead of migrating to Visual. Additionally, there were some features lacking in the initial software which were added later as afterthoughts. These and other

factors lead to inefficient tracking, communication and workflow processes throughout the company.

There are two parts to improving Arrow Gear's work flow. The IPRO team will first investigate issues with the current version of software, as well as look into upgrading to the latest software release, Visual 6.5.2. To investigate issues with the current software, the IPRO will look at multiple aspects. The team will observe how Arrow Gear currently manages and tracks current work – including using Visual ERP and their own stand-alone systems, what the company does not like about the software, and qualities and functions that make the software inefficient. The team will also determine Arrow Gear's needs and desires with the software, what modules of the software they do not currently use, and additional functionality that would improve the company's workflow.

The IPRO will examine the details of both version 6.3.8 and 6.5.2. By looking at the details, the team can determine if the new software adds sufficient functionality that would benefit Arrow Gear. The team will also determine what issues the new software addresses, and what it still lacks. The IPRO will also determine if sufficient training with the new software will be required after configuration. Arrow Gear is looking to upgrade systems, so the lingering questions will be "What must Arrow Gear do in order to upgrade, what issues will upgrading solve, and what issues are still left to be dealt with?"

Arrow Gear hopes to have the new system installed and configured by May 2007. This one-semester IPRO plans to find detailed information about processes in daily operation at Arrow Gear, and to research and suggest improvements that will bring efficiency and value to Arrow Gear. From this IPRO project, Arrow Gear should be able to take on additional customers, thus expanding the business and increasing profit for Arrow Gear.

## **Research Methodology**

The main goal of this project is to prepare a report for Arrow Gear that will focus on what the company needs to do to reach an improved level of ERP system efficiency. The team is helping the company to understand the gap between where their company and current ERP system is now, and where they want to be.

The professor will act as a guide to the team members. As an experienced consultant, he will brief the team on current manufacturing practices, as well as act as the primary contact between the team and Arrow Gear. There will be a plant visit almost every week to know and understand how exactly the company operates with the current system, and the professor will accompany the team on most of these visits. To aid to the team's understanding of the software, the company has provided a tutorial for their current software, as well as four workstations at their plant to experiment with their software and future upgrade configurations.

The team has divided into subgroups and each subgroup has selected one department to work on. Each subgroup will meet the concerned department head and will collect the

information on how the department currently works. After sharing findings with the entire team, the team will generate new ideas to improve the efficiency of the department. The team will meet every week to discuss the progress of each subgroup as well as any problems they might be facing. Then the team will try to find the solution for the problem as a whole, using any available resources as well as information collected from each department.

The work and progress of the team, as well as information collected, will be documented. At a later point, it will be formed into a presentation for the benefit of both Arrow Gear and the IPRO community.

## **Team Responsibilities**

The team has identified six separate categories within Arrow Gear, listed below. For each category, subgroups of two students were formed. Within (though not restricted to) their respective categories, the students will conduct interviews with employees, research software functionality, and determine solutions.

- ◆ Customer Service – sales, work orders: Khoa Le, Manu Pushpanath
- ◆ Engineering – process and time standards: Rahul Tayal, Sourabh Sethi
- ◆ Manufacturing – scheduling and materials management: Adam Bain, Tony Carfang
- ◆ Manufacturing – inventory, labor, shipping, receiving: Sam Solomon, Hong Kim
- ◆ Quality Assurance – nonconformance, corrective actions: Tony Carfang, Joe Velten
- ◆ Financial – general ledger, accounting, human resources, payroll: Sam Solomon, Adam Bain

## **Expected results**

For this project, the team will utilize available resources effectively and implement new technologies that enhance the efficiency of the current ERP system. Results will be dependant on two factors: additional functionality within the upgraded system provided by Infor Visual, and through the team's guidance to Arrow Gear for optimal configuration of the system. As interviews with Arrow Gear employees have already begun, several issues have already been identified. These problems will be addressed by the specific solutions listed below. By implementing these solutions, and through efficient use of the upgraded ERP system, internal communications of the company will be improved, and delays with job processing and work orders will be reduced.

- ◆ The Quality Assurance Module will be better integrated with the Manufacturing and Accounting Modules, as well as the rest of the current system.
- ◆ Security measures within the database system will be improved through access controls. Additional mechanisms will be put in place to reduce mistakes.
- ◆ Better support for full activity logging and transaction history will be available.
- ◆ General activities will become streamlined through better interfaces within the ERP system.

## Budget

This IPRO requires many trips to Arrow Gear in Downers Grove. The team will visit for conducting interviews, learning the Visual ERP software, aiding on configuration of the upgrades, and more. The team estimates trips at least once every two weeks, or roughly ten trips. These round trips require two cars for a 60 mile drive at 45 cents per mile through toll roads at 80 cents per toll.

Additional money will be required for supplies, presentation materials,

10 Trips to Arrow Gear's facilities	\$540
Tolls	\$32
Additional supplies	\$150
<b>Total</b>	<b>\$722</b>

## Work Schedule

A tentative schedule for the team's tasks and progress is shown on the following page.

