A primer for organizations considering purchasing a business planning or management information system.

The decision to purchase, install and use a business planning system is one of the most critical business decisions a company can make. By their very nature, such systems virtually *always* change the way the company operates. When the company's needs are well-defined, the purchase is well-planned and well-implemented; and when the installed system is used in a disciplined manner; the changes to the company's ways-of-working which the new information system forces upon the company are almost always changes for the better.

However, because business planning systems typically require a large investment of a company's time and money, once it's purchased (or licensed), the buying company is almost always "stuck" with the system for years (and possibly decades) to come.

This paper attempts to provide companies considering purchasing their first (or upgrading an existing) MRP, ERP, SCM or other MIS (Management Information System) with a basic understanding of the industry and the start of a process to help in reducing the risks inherent in such a monumental decision.

What is a business planning system?

A business planning system is a system designed and developed to integrate, standardize, streamline and improve an organization's planning, reporting and operational control capabilities. Business planning systems have been proven to help companies speed up production, reduce costs, standardize and discipline their reporting and forecasting efforts and provide a framework for continuously improving and streamlining their day-to-day business operations.

These systems typically include software, hardware and "manual" components. The basic mix of these three basic types of components greatly affects the design; then price; the ease of implementation and, ultimately, the usefulness and effectiveness of the system.

Business Planning System History & Terminology

Business planning systems typically fall into one of three categories: MRP (Manufacturing Resource Planning), ERP (Enterprise Resource Planning); or SCM (Supply Chain Management) systems. Although these terms are sometimes used interchangeably in some organizations, and despite the fact that as systems have matured the demarcation lines between MRP, ERP and SCM have become blurred; these terms and the systems they refer to generally indicate three different levels of system scope and complexity. As you might also have imagined, each step up the "evolutionary ladder" of business planning systems also typically represents a "step up" in purchase price and system maintenance costs. We'll address this issue later in the article.

- ***Automated Data Processing (ADP) Systems*** the precursor to the modern business planning systems, these legacy systems were focused almost exclusively on automating the bookkeeping functions within the organization. Companies such as IBM, ADP, Oracle and other big names cut their teeth automating business bookkeeping and accounting tasks. The lessons learned, the principles

developed, and the benefits customers gained from these early business process automation efforts laid the foundation of the industry of business information systems we know today.

Most of these early ADP systems were set up to be operated as "service bureaus" by the companies who developed them. These systems gained traction in the early 1960s, with the subscription approach driven primarily by the cost and complexity of the hardware and software systems needed to do the work. Few companies had the money or in-house technical expertise to set-up, operate and maintain systems of their own, so having a trusted name like IBM or ADP doing your processing was an attractive, safer, low(er) cost option than building an in-house capability.

The term "automated data processing system" is largely obsolete in the industry today and for that reason, it is not listed as a type of business planning system in the paragraph above. And in a great example of history repeating itself, today's "cloud services" offerings are using the old service bureau approach to once again offer various data processing and software access on a subscription basis.

- _**MRP (Manufacturing Resource Planning) Systems**_ represent the second stage of business planning system development. Initially called "Material Requirements Planning" systems, MRP is now generally accepted to mean "Manufacturing Resource Planning". As you might have guessed, current MRP systems typically encompass the manufacturing and manufacturing-related operations within a single organization or location. Some consider the early MRP systems to be the software / computer industry's first attempt at building true management information systems outside the "pure accounting" functions of a company.

Typically built around the Bill of Material (BOM – the list of parts needed to build a given part or product), early MRP systems were little more than computerized parts lists / material tracking and ordering systems, generating raw data and basic information for use by off-line planners. These systems were a huge improvement over older, manual manufacturing planning methods. MRP systems also represented a watershed moment is computer systems development, proving to customers that the computer had many more possible applications than just automating the accounting & payroll functions.

As MRP systems technology matured and stabilized, these systems' capabilities naturally expanded, moving from simple parts tracking and ordering systems to encompass more and more of the manufacturing process, growing to include complex planning, reporting and control tasks, activities & operations within customer organizations.

Although MRP systems have been with us for half a century or more, they are by no means obsolete systems. The fact that they've been around quite a while means that most MRP systems are extremely stable, (relatively) easy to use and require little system maintenance. MRP systems are still being built, sold, maintained and improved by vendors and many companies find this level of business planning and control is sufficient to meet their needs.

Unfortunately, in many cases, these expanded functions and capabilities were added piecemeal, with little thought to long-term system architecture and software was "tacked onto" the system architecture

wherever it would fit. This inevitably led to the systems themselves becoming cumbersome to use and a nightmare to maintain.

- **_ERP (Enterprise Resource Planning) Systems_** represent the third-generation business planning and control systems. They generally include planning, measuring and reporting capabilities for virtually all the operations, organizations and locations within a company or family of companies. In many companies with operations spread across wide expanses of geography, each location / operation / division used a different MRP system, making the sharing of management information within the company a virtual impossibility. Enterprise Resource Planning systems came about because, as the MRP systems' capabilities expanded and reached the limits of their architecture, performance problems and maintenance issues began to dramatically reduce customer satisfaction.

Recognizing these problems, MRP system manufacturers started working with customers to develop more streamlined systems which could meet the management and control information needs throughout the customer's entire enterprise. While ERP systems sometimes incorporate and often replace earlier (legacy) MRP systems, because they were being built as "next generation" systems, they were able to more effectively incorporate expanded technology capabilities and build on "lessons learned" from years spent developing, improving and maintaining MRP systems.

ERP systems also represent a step forward in the capabilities arena. Many of these systems were designed to encompass the virtually every area of a company's operations – from manufacturing to finance, to human resources, purchasing and shipping and receiving. This allowed true "enterprise wide" business planning and control and, although the initial switch-over from a MRP to an ERP system could sometimes be painful, the ability to standardize and share planning and forecasting data and information among and between all organizations, divisions and locations of the organization gave early adopters a true competitive advantage over their competitors.

- **_SCM (Supply Chain Management) Systems_** are the latest growth stage for business planning systems. As the name implies, Supply Chain Management systems typically offer all the functions and capabilities of the MRP & ERP systems, but expand their reach outside a single enterprise, allowing companies to standardize, share, and update business reporting, planning and forecasting information with their entire supply chain: including suppliers, customers, shareholders and, in some cases, government regulatory agencies.

Although the concept of a system to track, report on and manage a company's entire supply chain has been around pretty much since the beginning of MRP development in the late 1960's or early 1970's, until the late 1990's data storage and processor technology hadn't developed sufficient robustness or speed (in other words, the cost was prohibitive) to handle the massive computing and storage requirements such a system demanded. The internet-driven demand for increased storage, processing and long-haul data transfer capabilities (which started in earnest the mid-1990's) has increased computing capabilities and lowered prices to the point where true Supply Chain Management systems are not only feasible, they are now affordable for many companies.

True SCM systems almost always require cooperation between suppliers and customers, between developers and planners, and, often, between competing SCM systems.

As you can see, there is a definite hierarchy in business planning systems. Not every company needs or even wants a full-blown Supply Chain Management system, but most companies could benefit from at least some form of MRP, ERP or SCM system – even companies who deliver services rather than building product.

There are myriad of MRP, ERP and SCM systems on the market. Each of these (*and, dare I say, each of the selling companies*) has its good points and its bad. Most have some "unique" feature - things that other companies don't offer and that the seller hopes to make you believe are indispensable to running and managing your business. And virtually all these business planning systems come complete with "maintenance agreements" which promise to (*and sometimes actually do*) keep your system up-to-date and growing right along with your business...and which, of course, ensure the seller builds and maintains a steady income stream in the years after the initial system sale.

Benefits of a Planning System

A properly planned, installed and operated business planning system has a number of advantages, probably the biggest of which is that these systems offer managers and planners the ability to quickly and easily "what if" the impacts of various options before making a decision. Additionally, because these systems are capable of collecting data in "near real time" (*as an old flight training system developer "real time" has a whole different meaning to me than to SCM system developers*), they allow a company to more easily identify and more thoroughly assess various operational and market risks; more quickly identify opportunities; and more quickly change their operations to meet those opportunities.

Depending on the scope and complexity of the business planning system you choose, you may see some of the following benefits in these operational areas:

- Manufacturing
    - More thorough shop floor planning reduces waste and re-work;
    - Faster identification of production process problems & bottlenecks;
        - Improves effectiveness of continuous improvement programs;
    - More accurate raw materials planning and control;
    - Reduced warehousing needs;
    - Reduced stockage (and re-stocking) costs for supplies and raw materials;
        - Improved relationships with suppliers & customers
- Sales & Marketing
    - Improved accuracy in sales forecasts and more disciplined approach to forecasting;

- Reduced costs through improved Inventory control;

- Increased accuracy in sales and purchase orders;

- More detailed, accurate and faster collection of sales, pricing and customer demographic data;

  - More quickly identify and understand customer buying patterns and trends;

  - Reduced reaction time to shifts;

  - Helps your clients improve their ordering efficiency and reduce their stockage costs;

- Improved tracking and understanding of sales and advertising performance;

- Reduced and more flexible delivery times;

➢ Management

- Improved information and control;

- More disciplined scheduling, planning; and reporting;

- Faster risk identification and assessment;

- Improved quality of decisions;

  - Greater ability to "what if" options before making a decision;

- More accurate, timely information;

➢ Finance & Accounting

- Integration and standardization of finance and accounting activities across the organization

- Improved payroll accuracy;

- Improved accounts payable management;

- Reduced accounts receivable aging;

- Improved detail in cost accounting and more disciplined cost controls;

- Allows "near real-time" accounting

➢ Human Resources/Personnel

- Improved accuracy in personnel needs forecasting;

- Smooths hiring/firing waves;

- Reduced need for surge hiring and downturn layoffs

- ➢ Purchasing

  - ▪ Improved order time;

  - ▪ Track supplier performance with regard to price, delivery time and quality;

    - – Enhanced negotiating position;

    - – Speeds detection of vendor problems;

- ➢ General Business Operations

  - ▪ Speeds "action and reaction" time by integrating and standardizing information across all the organization's operations;

  - ▪ Increased structure and discipline in all business planning, reporting and forecasting activities.

A Recommended process for specifying, purchasing, and implementing a business planning system.

- ❖ Do Some Prep Work

  - ➢ Understand your operations. Identify which of your activities / processes you need / want to be automated by the system.

  - ➢ Understand the business planning system market – what systems are out there; what they can do; what they cost.

- ❖ Set the Scope

  - ➢ Decide what you want the system to do. Decide which things are necessary and which are "nice to have".

    - ▪ Define your operational requirements (all organizations affected by the system should be required to participate in this part of the process...and don't forget that your customers may be affected by the system you choose)

  - ➢ Decide what documentation (user manuals, support manuals, etc.) you'll need.

  - ➢ Decide how much user, developer, QA and internal support team training you'll need...and determine how you'll measure whether the training you get is sufficient.

  - ➢ Decide your desired support approach – in-house or outsourced?

  - ➢ Establish a timeline for implementation

  - ➢ Prioritize each of your requirements – decide before you talk with the various vendors which requirements are most important and which are least. Also decide a system for rating the vendors' responses to your Request for Proposal (RFP).

❖ Develop and Release the RFP

❖ Receive, read, evaluate and rate all vendors' responses to your RFP. Evaluation and rating should be based on the prioritized requirements you developed above.

❖ Negotiate with multiple vendors for price, delivery, training and long-term system support.

❖ Choose the system that best meets your needs...and announce the winning vendor only after you have completed negotiations with the "down-selectees".

❖ Actively manage the system and the vendor's performance against the contract requirements.

Things to Consider When Buying a Business Planning System

Given the wide range of capabilities, limitations and vendors these systems have, it is critical that you know what your business needs and what your team wants your planning system to do before you ask for quotes from vendors. In other words, it's critical to the success of your system that you take the time to understand your own business and develop an objective set of requirements for your "ideal" business planning system before you or your team start talking to system vendors.

Your company's needs

The level of expertise of your company's Information Technology (IT) organization

Your people's capabilities / level of comfort with technology

Data compatibility – what other systems are you using that will provide data or information to and receive data or information from the planning system. Will your system need to share data with suppliers' and/or customers' systems?

System and Data Security requirements

The depth of experience the planning system vendor has working with companies in your industry and of your size.

Once you've identified all your requirements and ranked them in order of importance, it's time to start asking vendors for quotes.

Business Planning System Costs and Prices:

Licensing prices for business planning systems (*yes, with these systems, you're virtually always licensing the use of software, not taking ownership of a system*) vary widely by manufacturer. Many system sellers base their prices based on such things as the number of users; the complexity of your operations; the amount of data you'll be running through the system or some other "nearly-impossible-to-calculate" criteria. A good rule of thumb to use is that the more complex your operations, the more complex the system you'll need and the higher price you'll pay.

Prices for Business planning systems can range anywhere from tens of thousands of dollars for a basic system geared toward small/medium sized companies to hundreds of millions of dollars multiple enterprise systems capable of handling the most complex global manufacturing operations.

When pricing business planning systems, be aware that most of these systems must be "tailored" to properly replicate, measure and control your company's processes. The more complex and comprehensive your processes, the more "tailoring" the system will require and, again, the higher the price. And if the system is not sufficiently flexible so it can accurately represent your complex processes, *you may actually be forced to change your processes to match the "default" settings in the product*. And, as you can imagine, this can have a devastating effect on your business.

Most system builders offer a suite of "packages" with set prices. Many systems are also scalable, allowing smaller companies to gain access to a scaled down version the system...and the pricing is often adjusted accordingly. In general, though, since most of the cost of the system is in the software, most system sellers have a fair amount of flexibility in their pricing...which gives you some opportunities to negotiate a lower price than other companies using the system.

In addition to the basic licensing price, there will virtually always be other costs beyond the licensing fees and hardware costs that you'll need to pay if you want the system to run properly. Some of the additional costs you can expect to encounter include:

Installation. Most of these systems are "tailorable", which means that someone (usually the system seller or an authorized installer) must sit down with you and your people to map out your business processes and model those processes in the system.

Business Process Mapping. in order to accurately measure your business, the system must first be told exactly how you do business. This is generally referred to as "Business Process Mapping". And although most planning systems include the capability for users (*that's you or your people*) to input this information on their own, in most cases the input process and the level of mapping detail the system needs in order to produce any useful information is so complex that it's virtually guaranteed you'll be paying the seller to at least do the initial mapping of your processes. Many companies choose to buy process mapping services from the seller throughout the life of the system.

Data Transfer and Conversion. Virtually every company that's been in existence for more than a year already has a lot of data about their business. And much of that data is useful and worth keeping around. Unfortunately, this almost always means that the data from your old system will need to be converted to a format that the new system can read and use. And this, of course, takes time and money to accomplish.

Global Support. You'll pay extra if you need the system to work across multiple time zones or outside "normal business hours". Often, "normal business hours" are based on wherever the vendor's support center is located. And while many vendors have multiple support centers strategically placed to handle multiple "local" areas, it's always best to plan ahead and be prepared to fight for the support you need.

Conclusion

The decision to purchase a management information system is rarely an easy one...and the actually purchase, installation and operation of such a system is always a complex, critical business decision. If your company is considering such a purchase, whether as a first-time buyer or an "experienced" purchaser, remember that the system you ultimately decide to use will most likely be in your company for years to come. Make sure you choose the system that's most likely to not only meet your needs today but is able to grow and change to meet your needs 2, 3, 5, 10 or even 15 years from now.

I've seen customers who give themselves only 2 or 3 months to make a purchase that will drive control their company for years to come. Take the extra time to do it right. The old saying "decide in haste, regret in leisure" was probably coined by the first company to purchase such a system...don't let it become your company's motto.

And if you're looking for some expert help in deciding on and purchasing an business planning system for your organization, Maxelerate can help.

1600 Golf Road
Rolling Meadows, IL 60008