

HOW TO PURCHASE A MONITOR AND CONTROL SYSTEM

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INTRODUCTION

Purchasing a monitor and control system is not easy. Unlike buying a car, one cannot open the hood and kick the tires; indeed, most people have no idea what to look for when “opening the hood” of a monitor and control system.

Since most people do not have an in-depth understanding of monitor and control systems, many mistakenly view the products as interchangeable commodities and the vendors as being alike. With this perspective, the decision of which product to purchase is easy: buy the cheapest one. However, this perspective belies the important differences among monitor and control products as well as monitor and control vendors.

EXECUTIVE SUMMARY

The following considerations must be made when selecting a monitor and control system vendor:

- Culture fit
- Expected product lifetime
- Decision making process

There are two dominant monitor and control vendor cultures: transactional and relational. Vendors of the former culture like to sell their software, provide their customer with a means to write their own drivers, and move on to the next customer. Conversely, vendors with a relational culture believe that a long-term relationship, that includes maintenance, support, and system growth, is in the best interest of both the customer and the vendor. It is vitally important for a company that is in the market for a control and monitor solution to consider if it is more cost effective, in terms of money, man-power, and resources, to build their own monitor and control

team, or to depend upon the professionals of the monitor and control vendor for ongoing support requirements.

The second area of consideration should be expected product lifetime. How long a company intends to use their monitor and control system should be weighed against the expected life span of the monitor and control system they are considering purchasing. Upgrade costs and possible “end of life” issues should also be considered, as well as the effect of the underlying operating system and software architecture on product obsolescence.

The decision-making process is different for each prospective monitor and control customer. Some entrust the decision to an individual, while others assemble a team and may even involve multiple companies, such as an integrator and/or the end user. A customer might develop formal requirements and seek out objective product information and research. On the other hand, many customers simply compare vendor products and depend heavily upon the information provided by the vendor’s sales department. Some companies take the vendor’s company culture and reputation into account and some will not look beyond the product information.

CULTURE FIT

The culture of the various monitor and control vendors differs quite a bit. Some have a transactional business model; they like customers who buy their software and support themselves. As well they should; this is a high profit margin, low support cost scenario. These vendors often offer deep discounts because their business model affords them that opportunity. While this may seem to be a suitable solution for some customers, there is great risk involved in not having support available when it is most needed.

In unmaintained systems, technical issues and nuisances can quickly become catastrophic, and often quite costly, problems.

THE NUMBER ONE BENEFIT OF WORKING WITH A RELATIONAL VENDOR VERSUS A TRANSACTIONAL ONE IS TRUST.

Vendors, such as Crystal Solutions, which subscribe to the relational business model, take on a consultant role with their customers and offer solutions that are customizable to fit the needs of the customer's business. The number one benefit of working with a relational vendor versus a transactional one is trust. Account managers disciplined in a relational culture take personal accountability for the success of a solution placed with a customer. They invest the time to get to know the ins and outs of a customer's business in order to develop a solution that can be integrated seamlessly and will enhance that customer's current processes. This investment transforms the vendor/customer relationship into a mutually beneficial partnership.

Post-purchase the value of working with a relationally cultured vendor is even greater. Ongoing maintenance & support ensures that a company is less likely to experience technical difficulties and the issues that do occur are caught and corrected before they can escalate. Solutions that are customizable allow for system growth. Crystal Solutions' CrystalVision, for example, is a modular & configurable system. This means that as company adjusts for growth, their system will adjust with them. Having that kind of flexibility is essential to ensuring that the solution a company invests in will continue to perform to the highest standard for their business long after the product lifetime has expired on other systems.

EXPECTED PRODUCT LIFETIME

Product lifetime is a dimension to monitor and control procurement that is rarely addressed. When a company purchases a monitor and control product, how many months or years will it be before it becomes obsolete and it becomes necessary to upgrade to the newest and greatest version? (Obsolescence of software happens, you know.)

There are three dominant factors regarding the speed of obsolescence of a monitor and control system:

- underlying operating system
- monitor and control system architecture
- computer architecture developments

Many vendors' products run on Microsoft Windows®. Windows is not the name of an operating system; it is the name for a family of operating systems. Members of this family are more or less compatible, but there can be serious compatibility issues. There are some vendors who are shipping their current product on Windows NT. Windows NT is no longer available from Microsoft. As these vendors port their product to XP, will they continue support of their NT product, and if so, for how long? Does that support include new features that may be needed? It is difficult to recall just how many versions of Windows there have been, so, looking forward, how long can the life expectancy of XP really be? What will the upgrade costs be, not only in dollars paid to the monitor and control vendor, but also in business interruption and employee training costs?

Crystal Solutions' CrystalVision product uses the QNX operating system. QNX is a message-based operating system introduced in 1981. It is the leading operating system for real-time applications; its reliability is approved for medical and space applications. There has been a major upgrade for QNX about every 10 years, but QNX Version 6 uses the same message-based microkernel architecture introduced in 1981. Also consider that 64-bit processors are just around the corner. The reason for porting to 64-bit processors is the elimination of the 4-gigabyte memory limitation of 32-bit processors. CrystalVision currently ports to 32-bit processors, however it is much less memory intensive than competitive products and the port will support both 32- and 64-bit processors. This allows customers who are satisfied with the current processor to maintain their system as is, while offering cutting edge speed to those who desire the upgrade.

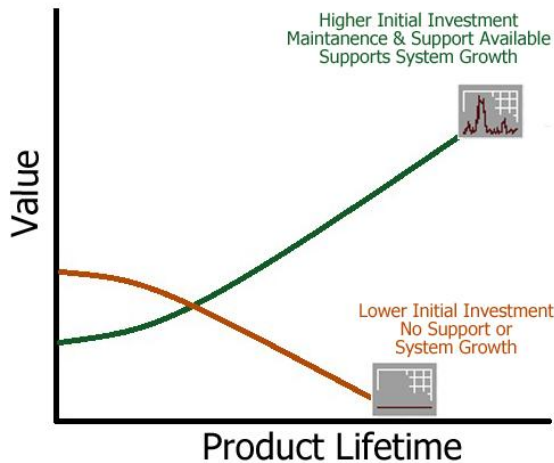
RELIABILITY EQUALS EXTENDED PRODUCT LIFETIME, AND EXTENDING THE LIFETIME CAN DRASTICALLY AFFECT THE OVERALL VALUE OF A MONITOR AND CONTROL SYSTEM.

Software architecture is the next dominant factor in monitor and control product obsolescence. The CrystalVision product is implemented with a

modular message-based architecture. By creating and adding a new software module, new functions can be introduced to the CrystalVision product with absolutely no impact on existing modules or code. One software module cannot interfere with another software module's data because each module operates in its own address space completely isolated from all other modules. Crystal Solutions has created an architecture that offers extraordinary functional extensibility, end-of-life issues are virtually non-existent, and the CrystalVision product exhibits reliability unequalled among its peers. Reliability equals extended product lifetime, and extending the lifetime can drastically affect the overall value of a monitor and control system. Therefore, expected product lifetime should be a significant part of the decision making process.

A REQUIREMENTS LIST IS ESSENTIAL FOR DEFINING AND PRIORITIZING THE NECESSARY FUNCTIONS OF THE DESIRED MONITOR AND CONTROL SYSTEM.

Consider, for a moment, the fact that any decision making process is subjective by nature. When a company begins to form their requirements for a monitor and control system, they start with the obvious "must haves," then add the "nice to haves," "futures," and perhaps a few other categories as well. The result may look very objective, but inclusion and exclusion of various requirements has been filtered through the decision maker's internal process and therefore the end result is actually subjective. Objectivity is important in decision making and there are a few methods a company can employ to make the decision making process more objective. These methods would include using a team to complete the process rather than an individual, putting together a requirements list, building a compliance table, and perhaps even doing a Kepner-Tregoe requirement analysis.



DECISION MAKING PROCESS

Developing monitor and control system requirements and understanding which vendors' products actually meet those requirements is tricky. Comparing products from different vendors is even more difficult. Often the same terms mean very different things to different vendors. Some vendors tout features that other vendors take for granted; just because a vendor doesn't advertise a feature doesn't mean the feature is absent. Some vendors sell "futures," that haven't even been developed, as if they have been delivering them for years.

Having a team handle the decision making process helps to ensure that the final decision is free of any private perceptions and/or undue influence that is not relevant to the best interest of the company. A requirement list is essential for defining and prioritizing the necessary functions of the desired monitor and control system. With this information in hand the procurement team is able to clear through the clutter of information provided by multiple vendors and narrow in on the product that will best serve the company's needs. Knowing the importance of a requirements list, how can a company be sure that their list, is not only accurate, but can be translated into available options and features in the current market?

First, look within; most companies have internal resources they should not overlook. Engineers and operators that work with the monitor and control system on a daily basis often have valuable insight as to what the requirements should be for a new solution. Additionally, a company can contact other monitor and control users who have operations and requirements similar to their own. Find out if those users are satisfied with their choice and if they have experienced any deficiencies with their monitor and control system. After contacting multiple monitor and control users, clear patterns will emerge and the choice may become apparent.

Second, there are independent consultants available, such as Skjei Telecom, who understand and have reviewed the available monitor and control product offerings. The information provided by these consultants is unbiased and can save a company the leg work of conducting this research on their own. Crystal Solutions is prepared to provide additional information on third party resources if needed.

Finally, if the company is already working with a trusted account manager from a monitor and control vendor, they should remember to use the account manager's insight, product knowledge, and market awareness as a resource.

After product options and features have been selected for the requirements list, a company should be sure to include the other aspects of the total solution, including: maintenance and support, system growth, and expected product lifetime. Once all of these areas have been addressed and a company is secure that they have compiled an accurate and thorough requirements list, they are ready move forward with procurement of a solution.

CONCLUSION

Don't assume that all monitor and control vendors and all monitor and control products are interchangeable. They are not. In fact, no two vendors or products are the same. Each has its strengths and each has its weaknesses. While all monitor and control products may appear to meet basic monitor and control requirements, they certainly don't do it in the same way. Take the time to understand those differences. If monitor and control technology evaluation isn't a personal strength, employ a consultant or rely on employees who do understand monitor and control systems.

Determine what the culture of a prospective monitor and control vendor is and if it is a good fit. If unsure of a prospective monitor and control vendor's culture, ask their customers. They will know.

Be sure a prospective monitor and control vendor offers at least a minimum acceptable level of maintenance and support. A good product and a great price mean very little the following year when the support is badly needed, but simply isn't there.

Focus on total life cycle costs, not just up-front costs. Sure, these costs are important, but also

consider the costs of hardware, operations, maintenance, support, product reliability, expected life span, and upgrades. A great price today for a product that is obsolete or not supported in two years is not a good use of valuable company resources.

Crystal Solutions' CrystalVision product offers cutting edge monitor and control technology with expandable and adaptable system architecture. It is backed by Crystal's superior service and maintenance that remains unrivaled in the monitor and control industry.

For more information on Crystal Solutions' CrystalVision, visit www.crystalcc.com.

THE CRYSTAL COMMITMENT

Crystal has been creating reliable control system solutions for the broadcast, satellite and communications industries since 1986.

As the largest independent provider of monitor and control solutions, Crystal understands our products are only as good as the company that stands behind them. Crystal Solutions' Customer Care Center provides support 24 hours-a-day, 365-days-a-year – we know those are your business hours! Crystal custom tailors a support plan to fit the unique requirements of your business.

For more information on Crystal and our commitment to customer support, check us out on the web at www.crystalcc.com.