



ANTEVORTE CONSULTING, LLC

## **Selecting an Enterprise Architecture Tool** **A primer for how and why.**

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### **Abstract**

*Enterprise Architecture (EA) teams are finding that they need to create and manage their EA with a tool if they are going to move to the next level of EA maturity. Selection of an EA tool should not be taken lightly and needs to be subject to the same rigor and thoroughness that would be accorded to the selection of an ERP or CRM system. Since a company's EA provides direction and guidance for the entire enterprise and its information technology, selecting a less than optimal tool may adversely impact the overall management of IT. This paper reviews a selection methodology and discusses the many pitfalls that might face an EA team making their first EA tool selection.*

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### An Introduction

Many organizations have realized there is a business value to the establishment of enterprise architecture (EA) for their firms and are beginning the process of initiating an organized EA effort. Others, having already recognized this need, are at some point along the path of creating an EA. A common thread among these companies is the need to obtain a tool to assist in their EA efforts. Once this need has been identified, how should they go about selecting, procuring and implementing their selected tool? EA specific tools are rather obscure and very focused on EA or EA related use. Some modeling tools used for business process or software modeling have also been adapted for EA use. Often firms that are already using business process modeling or software/database modeling tools (such as Proforma Provision and Rational Rose) often pressure their EA teams to make do with these tools instead of acquiring an appropriate tool for EA use.

It is our experience, and that of many of our clients, that EA teams should be using a package specifically intended for EA use and loaded with “out of the box” EA modeling components and objects. Adapting a “similar” tool to EA use, just because the enterprise is already using it, is false economy. According to the META Group, Inc: *“Failure to match the tool requirements with the tools being used leads to rework (e.g. re-entering information in multiple tools), conversion issues (e.g. exporting/importing data between disconnected tools), or impaired progress (e.g. establishing manual procedures for handling version control, change management, and distribution requirements)<sup>1</sup>.”*

This paper presents reasoning, best practice, and a methodology to help EA teams identify what is important to them in a tool and how to go about conducting an evaluation that will provide the best tool (for the firm) and withstand the scrutiny of those with a pre-determined selection.

### Why a process to select a tool?

You would not decide to purchase a car and then drive down car dealer row and buy the first car that you see (or at least most of you would not!). You would think about what you wanted in a car, perhaps check out the Internet and Consumer’s Reports for information. You might check with your friends and get their suggestions. You may even make a list of features that you wanted; leather seats, CD, ABS brakes, cruise control, etc. You might arrange these in order of your interest in the features. You might check out the various manufacturers and make a short list of those that had cars you might be interested in buying. Then you might go out and test drive cars from the short list. You would check and collect information, rate and prioritize, price, negotiate and select. So why would you buy a critical piece of software for your work from the first vendor you see or the one that takes you to the best restaurant for lunch?

Fact is, you would not. EA tools can cost your firm hundreds of thousands of dollars when you include the tool cost, training, consultant support, maintenance, your staff labor, other implementation costs, etc. You need to make the best possible selection that allows you to factor in all of your critical elements and business needs. You have a limited amount of time to

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<sup>1</sup> Handler, Robert; Enterprise Planning & Architecture Strategies File 146, November 21, 2001, META Group, Inc

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conduct your evaluation. You will want to be able to defend your decision with management when the losing vendors complain to your management that they were not given a fair shake in the evaluation. You may have to defend your decision with your co-workers who wanted you to use their favorite tool. You will want to make sure that all of your team members provide their input in the selection process.

A structured process, a methodology, will allow you to conduct your evaluation and insure the best possible selection and the integrity of your decision. Think of your selection process as a project where the methodology provides the template for your project plan. Following your plan you will be able to complete your evaluation and make your selection in the timeframe you have established. Your results will be organized and your decision will be solid and defensible.

## **Tool Selection Methodology**

### ***Process Overview***

The process we will feature in this paper consists of five steps and is based on the selection criteria and process concepts that we use to help clients with the selection of application software packages as part of an overall EA governance suite of processes. These steps are:

1. Team selection
2. Criteria and weighting factor development
3. Vendor identification
4. Short list evaluation
5. Final selection

### ***Process Detail***

#### **Step 1 –Team Selection**

Although it is certainly possible for a single individual to unilaterally select the EA tool for an enterprise, doing so can result in a less than satisfactory result and alienate the other participants in the EA process whose support and cooperation are necessary to the success of any EA effort. A selection team provides for a spectrum of input and understanding as well as a more complete and comprehensive evaluation.

Depending on the size of the enterprise and the backgrounds, interests and expertise of the potential team members, a couple of approaches to team selection can be effective. If there is an existing EA team or committee in place, this is a logical choice for the selection team. They have already been chosen for having an interest in the EA process and success at the company. Many of the members (the ones actually hands on involved in the EA process and activities) may very well be the intended users of the selected tool and, therefore, should be involved, or at least heavily represented in the tool selection.

Some enterprises have existing active modeling teams. These may be performing business process modeling, database modeling or software development modeling. Usually when this is the case, there is also pressure to adapt the modeling packages that are already in house. These

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existing modelers are the local subject matter experts (SME) for these existing tools and really should have some involvement in the evaluation process for an EA tool. They can bring their experience with modeling tools and may be able to help uncover critical information that is less obvious in vendor materials, presentations and demonstrations. Care must also be exercised as they may also bring their own agendas and preferences to the selection process. These may not necessarily be in alignment with the goals and requirements of the EA team.

Enterprises that have potentially a large number of interested selection team participants should consider an approach that uses an extended team for some of the initial steps of the evaluation. Then, as the process gets into step 5, the effort switches to a focus on the core team of EA SMEs to do the hard work of weighting and final evaluation.

No matter what approach is used to select the team(s) there should be a single formally established leader for the effort and an executive sponsor that appoints/confirms that leader and is responsible for the budget for the tool acquisition and deployment. Usually this individual is from the IT organization and, depending on how the EA team is assigned, may be the executive directly responsible for the EA effort or the CIO.

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**Step 1 Summary**– Have an executive sponsor, select a focused interested selection team and formally appoint a leader of the evaluation team.

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### **Step 2 –Criteria and Weighting Factor Development**

Developing the evaluation criteria is one of the more difficult steps in this process as well as one of the most critical. With the goal being an objective evaluation, these criteria need to be robust, comprehensive, non-ambiguous, relevant to the needs of the organization and, to the extent practical, as objective as possible. This is a tall order and can be very difficult to achieve. In our consulting practice, we have developed a “starter” set of criteria that jump-starts this process reducing the time needed by a significant amount.

Any reasonable set of criteria will be rather large. In order to better manage the set and to facilitate the roll-up of the evaluation into a summary, a three tier hierarchy is recommended. We generally use three categories for the top level.

- **Functionality** – What can/does the tool do? How does it work and how does it meet requirements?
- **Vendor** – Stability, viability and background of the vendor.
- **Cost of Ownership** – Total cost of ownership issues from acquisition through ongoing maintenance and the effect of its costs and capabilities on the EA effort.

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These top level categories are then broken down into another level. Here is a sample breakdown from our starter set.

Functionality	Vendor	Cost of Ownership
<ul style="list-style-type: none"> <li>▪ Extensibility</li> <li>▪ Model Presentation</li> <li>▪ Multi-User/Team Collaboration</li> <li>▪ Platform Support</li> <li>▪ Robustness</li> <li>▪ Standard Model Frameworks supported</li> <li>▪ Usability</li> </ul>	<ul style="list-style-type: none"> <li>▪ Experience in Modeling Industry</li> <li>▪ Experience in EA Modeling</li> <li>▪ Product Direction</li> <li>▪ Reputation/References</li> <li>▪ Support Availability / Quality</li> <li>▪ Training Availability / Quality</li> <li>▪ Financial Aspects</li> <li>▪ Company Viability</li> <li>▪ Current Company Use</li> <li>▪ Consulting Assistance</li> </ul>	<ul style="list-style-type: none"> <li>▪ Purchase Software</li> <li>▪ Training and Documentation Costs</li> <li>▪ Annual Maintenance Costs</li> <li>▪ Hardware</li> </ul>

These second tier topics are further subdivided into individual elements each of which will be rated by the evaluation team members. These individual elements should be granular enough to allow for a simple evaluation. However, creating a very large set of elements will make the evaluation difficult to complete, so care must be exercised in order to achieve a balance.

Even with the support of a consultant and a starter set of categories and elements, you will want to be sure that the elements you end up with are really relevant to your needs and requirements. When an extended team approach is being used, the members can be very helpful in brainstorming to build this list. It must be remembered, however, that the larger the group, the more elements will be identified and the longer it will take to complete this step. Knowing the right amount of elements and time required may necessitate some outside assistance from consultants.

Consultants can assist in this process by facilitating the brainstorming sessions and defusing concerns that a particular group of team members is driving the decisions in an “unfair” manner. This can become an issue when there are incumbent modeling tools being used in the enterprise that may not be suitable for EA use but have a very vocal constituency or executive support for their selection.

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### **According to the META Group, Inc.**

*As clients progress their architecture and project efforts, many fail to match their tool requirements with existing tools, which leads to inefficiencies. Architecture tools must be driven by current and planned organizational and architecture requirements. Successful enterprise architecture teams harmonize their architecture tools based on architecture maturity assessment results and team/organization objectives.<sup>2</sup>*

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Once the collection of evaluation elements has been assembled, the next task is to assign weights to the criteria elements. This is extremely important in order to insure that the results are relevant to the actual needs of the organization. Not every element will be of the same level of importance. Using a weighting scheme to moderate the evaluation of each element will insure that the importance of each element is factored into the overall decision.

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<sup>2</sup> Handler, Robert; Enterprise Planning & Architecture Strategies File 146, November 21, 2001, META Group, Inc.

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We have used this list of weighting factors and have found them to be adequate to insure enough granularity in the evaluation without creating a numerical nightmare. This set also assumes that the higher the weighted score, the better the evaluation. It also assigns no value to items that are weighted as “not applicable.” Although it is a good idea to purge the list of not applicable items, there may be political or process reasons to retain some not applicable items.

- 0 = Not Applicable
- 1 = Of Little or No Importance
- 2 = Somewhat Important
- 3 = Important
- 4 = Very Important
- 5 = Extremely Important

The weighting factors should be determined as a single set applicable to everyone’s individual evaluations for each element. If each evaluation team member were to assign their own weighting factors, the results could end up heavily biased. When the evaluation team includes members who will not actually be using the EA tool (surprisingly such individuals often end up on evaluation teams), the actual end users should have the final say on the weighting factors to be used.

Once the weighting factor set has been agreed upon, the evaluation criteria elements are ready to support the actual evaluation effort. Each item will be reviewed and scored by each team member using the following scoring system:

- 0 = Unsupported
- 1 = Poor
- 2 = Fair
- 3 = Good
- 4 = Very Good
- 5 = Excellent

This scoring system certainly has the capability of being subjective. The trick is to word the individual criteria elements such that they can be evaluated in the most objective manner possible. For example, whether a specific feature is included (such as exporting of the model in an industry standard XMI file) is very objective. “Easy to use” is a very subjective element and such broad subjective elements should be avoided as much as possible.

The best way to manage the hierarchical set of evaluation criteria and the subsequent scoring and compilation of results is by using a spreadsheet. Figure 1 is an extract from such a spreadsheet. Each evaluator will be provided with a copy of the same sheet to record their evaluations and provide their scores. Then everyone’s sheets are merged to create a final consolidated evaluation.

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RATINGS	5	4	3	2	1	0	WEIGHT	Product A			Product B		
	Excellent	Very Good	Good	Fair	Poor	Not Applicable		SCORE		COMMENTS	SCORE		COMMENTS
	6	4	3	2	1	0		RAW	WEIGHTED		RAW	WEIGHTED	
WEIGHTS	Extremely Important	Very Important	Important	Somewhat Important	Little or No Importance	Not Applicable							
<b>EXTENSIBILITY</b>													
	Meta-Model Extensions								0				0
	Methodology/Process Extensions								0				0
	Methodology/Process Customizations								0				0
	Propagation of New Meta-Model Extensions to Existing Objects								0				0
	External Graphics								0				0
<b>MODEL PRESENTATION/PUBLISHING</b>													
	Quality of HTML Output and Browsing								0				0
	Report Generation/HTML								0				0
	Quality of MS Office Integration (Word Output)								0				0
	Quality of PDF and graphic outputs								0				0
	Report Generation								0				0

Figure 1 - Extract from an evaluation spreadsheet

The spreadsheets contain the numerical equations to apply the weighting factors to each evaluation point (an element for a specific product being evaluated). We will discuss the use of these evaluation sheets further as we go through the remaining steps in the evaluation and selection process.

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**Step 2 Summary** – Develop an organized objective set of requirements and evaluation criteria and a set of weighting factors to align the importance of these items to your specific needs. Create data recording and analysis spreadsheets to facilitate the collection, analysis and evaluation of the projects.

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### Step 3 – Vendor Identification

“Water, water everywhere and not a drop to drink.”<sup>3</sup> EA tools, both those intended for this use and those being adapted or pressed into service, are increasing in quantity and hype. At a recent Enterprise Architecture Conference (November 2003, Phoenix, AZ USA), there were exhibits from eight vendors<sup>4</sup> specifically marketing EA tools. In addition, there are other vendors such as Rational (IBM) and Proforma that have modeling tools that have been adapted into some form EA modeling by some of their customers<sup>5</sup>. So, without much effort, there are from eight to ten potential tool vendors to evaluation. This list is your initial vendor list.



Figure 2 - So many tools to choose from!

<sup>3</sup> Coleridge, Samuel Taylor; Rime of the Ancyent Marinere; Lyrical Ballads, 1798, J. & A. Arch

<sup>4</sup> Adaptive, Inc.; Computas NA, Inc.; IDS Scheer, Inc.; Popkin Software, Proforma; Ptech, Inc.; QualiWare, Inc.; and Trouz Technologies

<sup>5</sup> Organizations tend toward extremes, either trying to stretch basic office automation, modeling, and groupware tools (e.g. Microsoft Office, Microsoft Visio, Lotus Notes) beyond their capabilities, or using comprehensive architecture modeling and repository tools before the architecture team and organization are capable of maximizing their value. Handler, Robert; Enterprise Planning & Architecture Strategies File 146, November 21, 2001, META Group, Inc

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Eight to ten vendors is too large a group to evaluate in an exhaustive manner. A team could spend upwards of 12 to 15 weeks to evaluate each of these vendors. You really need to make an initial first cut in order to trim down your list to a manageable size. Assuming that you and your team have only a very limited knowledge of these vendors, the some homework is required. Begin by collecting some information about each vendor from them directly and from their websites. You may also have colleagues with some experiences that they are willing to share with you. If you are working with a consultant, the consultant will generally have significant information about some or all of the potential vendors.

You should be careful, however, in avoiding any initial meetings or presentations from any of the vendors at this stage in your evaluation. Every vendor's product looks like the greatest thing since sliced bread when you see their presentation under their control. You need to be properly prepared to see what you are looking for before advancing to the meeting stage with the vendors. Having to talk with them, meet with them, etc. can take a lot of time and, if you are not yet prepared, it will not really help you with your evaluation efforts.

If you have incumbent modeling tools in your enterprise, you will want to search out your company's SMEs for these tools. They will be able to provide you with a great deal of information about the tool from the perspective of their own use. Again, be careful about initiating a more intimate relationship with the tool vendor's representatives at this time. With a tool already in place somewhere in your enterprise, an existing vendor relationship may already be in place and you may want to take care to keep your efforts low profile until you are ready to contact the vendor.

As you gather information, be sure to keep some type of record of the basics of each product. This would include contacts, addresses, website locations, copies of documents and other materials. Most software vendors these days provide most, if not all, their relevant materials in electronic format. You should establish a work area for your team (shared networked file folders, Microsoft SharePoint area, Lotus Notes Teamroom, etc.) in which to store these items so that they are available to your entire team.

As you review this initial information, watch out for anything that will help you to either eliminate a vendor/product or imply the need to insure that the product is fully evaluated in your selection effort. For example, if a product only uses Oracle as the database and your enterprise only uses DB2, this could be a reason to eliminate that product in this first pass. Generally, most of the tools run in Windows environments with either Oracle and/or SQLServer as the database unless they use a proprietary database that is not separate from the product. You may also find a business reason in this initial review that would drive you to exclude a product from further evaluation. An example might be that the vendor's product is so new that it places you at risk in taking a product too soon out of beta. Another might be that you have already determined that you need consulting assistance and either your consultant is not able to support this product or the vendor cannot provide any consulting assistance for EA efforts.

Once you have collected information from all the vendors, you will want to have your team review it and then meet to see if you can trim down the list before actually talking with vendors.



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Look for issues with technical infrastructure, features, in-house expertise, adverse information from colleagues, cost<sup>6</sup>, management pressure<sup>7</sup>, etc. Any opportunity to pare down your list will save you time in the evaluation process.

Once you have narrowed the list as much as possible, the remainder of this step is to begin your first interactions with each vendor. This can be a telephone and online demonstration of their product to your entire evaluation team. All vendors have the capability to present a demonstration of their products over the Internet so that your team does not have to travel (nor do the vendor's staff). In fact, you can usually have these demonstrations such that your team would not even have to come into the same room, viewing the demonstration and participating in the audio portion via the Internet and telephone as a virtual demonstration. This is particularly valuable if your evaluation team is not co-located.

At this point, vendors may ask that your team sign non-disclosure statements so they can tell you about where their product will be going in the future. Your company may have restrictions on signing non-disclosure statements, so check this out before hand and understand the process for your company. Some companies do not allow individual employees to sign such statements preferring to have them signed by a company officer covering all employees. Just be sure to check ahead of time to avoid any awkwardness or delays as a result of a non-traditional approach.

You will want to schedule one to two hours per vendor for this initial presentation. Ask for it to include, besides a demonstration, information about the company, the history of their product, who their customers have been and so forth. You will want to request that they limit their demonstration to support of Enterprise Architecture as some of these products can be used for other tasks outside this scope. With limited time and a focus on EA, you need to have them spend their time with what you are interested in seeing and hearing about.

These presentations will be the first time that you actually use your evaluation spreadsheets. Even though you will get only an introduction to the product in the allotted time frame, using the spreadsheets helps to focus your team and to collect information in an organized manner so that you can make your initial evaluations toward trimming to the short list. You will also want to provide a copy of your spreadsheet to each vendor prior to the presentation so that they can understand what you are looking for and what is important to your team. Although with this knowledge, they may slant their presentations and demonstrations to align with your criteria, this is not a bad thing. It will help you to better evaluate these products in light of your specific requirements. It will also impress on the vendors that you have done your homework and will not be blinded by the glitz or numbed with the sizzle of a fancy demo.

In addition to limiting each presentation to less than two hours, you will also want to limit time looking at vendors and products to no more than half a day at a time. More than this will overwhelm the team members and impact their ability to objectively review the products and

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<sup>6</sup> You should get pricing data and check it out compared to your anticipated budget and ROI. Although it is the author's belief that no current EA tool is so expensive that it can not provide a suitable ROI, individual companies may view the ROI assumptions in a narrower manner thus creating a cost cap on the software. If this is the case, cost can be used to eliminate products.

<sup>7</sup> This can include pressure to keep a tool in (we already have this why can't you use it?) or to exclude one (we are not going to do business with a company that is headquartered outside the US).

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remember what features went with which product. You also want to limit the overall timeframe within which these presentations are reviewed. If you have them spread out over more than a couple of weeks, you run the risk of the evaluations becoming inconsistent for the members of your team. When the presentations are not far apart, each member of your team has a better chance to interpret each evaluation element in the same way, thus insuring a more consistent evaluation.

This is also a good time to request reference accounts for each vendor. These will be their customers willing to talk with you about their use of the vendor's product and their experiences with the product. Since the vendor will be providing this information, you understand that they will steer you to a very satisfied customer. If you are able to locate other customers and talk with them, you will be able to get less biased recommendations. Just because a customer of one of the vendors gives them a bad recommendation, should not mean that you cross that vendor off your list. You should try to understand why the customer has given a negative report to you can determine if the reasons are relevant to your requirements.

After you have had the presentations from each vendor in your long list, you will want to collect the evaluations from the team members and merge them into a consolidated set. This should also include comments. You may elect to do this as you go along in order to shorten the overall time required. If you do consolidate as you go along, it is recommended that you do not distribute the results to the team members until all the evaluations are in for all the products. Premature distribution of the intermediate results can sway the evaluations of the remaining products. It may also cause some team members to drop out or not participate in some of the remaining presentations because they may feel that their input is not longer valid. This will lose their input which may be very critical to the overall evaluation even though these individuals may not think so.

From the consolidated evaluations, you will be able to rank the products. Based on their ranking, you should now cut your list down to two or three products creating your first major cut. This new list will be much easier to deal with and will prepare you for the next round of evaluations. At this point you should have also come to the realization that spending one or two hours seeing some presentations from tool vendors does not give you enough information to make an informed decision. This is why we advocate a structured approach that lets you focus on the products that best meet your specific requirements and demands.

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**Step 3 Summary** – Create your list of initial list of tool vendors by narrowing down the field with an initial familiarization and evaluation round with your evaluation team. Gain an understanding of the basic capabilities and features of the tools on your list in preparation for the next step.

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### Step 4 –Short List Evaluation

Once you have trimmed your list, you are ready for the next round. You should have already seen that you really did not get enough data to fully complete your evaluations. Many items will be missing and others will not have been seen in enough depth to provide your team with a comfortable feeling. In this step you will conduct more in depth evaluations with the vendors and their products. These evaluations should be done in person and should have an entire day

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allocated to each vendor. These meetings could be at the vendor's office, your office or a neutral location. The important thing is that you have as many of the team members as possible participate in this round of evaluations so that you can get the most comprehensive look possible at each product.

In the process of setting up these in person evaluations, you should make sure that each vendor understands your evaluation criteria and is prepared to address each item. If you can, you should also provide each vendor with "real" material, if some already exists, from your firm so that you can see what it would look like represented in the tool. You also should make sure that the vendors understand that you are not interested in a rehash of the material that was presented in the one hour sessions. They need to understand that you want to see much more detail and get a feel for how their product might function in your environment with your EA requirements and demands.

As you review the results of the evaluations to this point, you may find that you need to modify the evaluation criteria and/or weights based on what you have seen so far. This is not only fair but a good idea as a refined evaluation will provide you with even better results. Should you change any of the elements and weights, be sure to update all of the vendors you are reviewing in this step so that they are aware of the changes.

You may also ask the vendors to demonstrate a scenario of the use of their tool as you would see it used in your environment. This will help them to better understand your needs and allow you to better evaluate their tool. The more information that you can provide them, the better opportunity they will have to answer your questions and provide you with information.

There is generally no need to place any restrictions on the number and types of representatives that each vendor will bring to these day long evaluations. For the most part, all of the EA tool vendors are rather small companies with a limited number of sales and support staff. In some cases, the president of the company may actually be the senior technical and/or sales representative and will, therefore, be attending. Some vendors may elect to bring a consultant that works with their tool and have that individual do some or all of the presentation. Remember that besides your evaluation of the features and capabilities of each tool, you are also interested in evaluating the vendor so how they choose to staff this meeting will give you some very important insight into their company. When you select a tool you are also selecting a partner to your EA team and you want to get the best partner you can.

Make sure that you provide the vendors with enough time to evaluate your material and prepare for the day long meeting. As mentioned before, these are all very small vendors and they have to support their current customers as well as respond to your demands. Their cost to meet with you may represent a large portion of the initial margin of the first year cost of their product so you need to be fair to them. Your flexibility in setting up these meetings will be helpful to you in the long run.

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**When you select a tool you are also selecting a partner to your EA team and you want to get the best partner you can.**

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When the appointed day arrives, you should have a pre-meeting with your evaluation team to make sure that everyone is on the same page. If you have any of these meetings at one of your company locations, be ready to start on time and try to arrange for all the security and access details to be satisfied in advance. Make sure that you have obtained the technical requirements of the vendor to support their presentation. This may include Internet access and data projection requirements. At some companies, it is very difficult to provide Internet access from conference rooms. If this is the case for you, you will need to make special arrangements or provide one of your company computers for the demonstration. Taking care of this before the vendor arrives will make for a much more productive session.

If you are meeting off site, relative to your facility, be sure to get the entire team there on time. Waiting for stragglers reduces your time with the vendor and may give the wrong impression as to the intensity of your interest. Meeting at the vendor's location provides the advantage of full access to their staff for questions and information. In any case, be prepared so that you can get the most out of your meetings.

Be sure to ask each vendor to provide an agenda and to provide it in advance of your meeting. Review it to be sure that all the areas of importance to your team are covered and that enough time for each has been allocated. Adjusting the agenda prior to the meeting will be much more effective than trying to make last minute changes with you both in the room ready to proceed. It may also make sense to have a working lunch in order to increase the amount of time available.

As your team members sit through the presentations, they should be updating their evaluation sheets. This will include information on items that were not previously evaluated as well as more information about items seen earlier. It is certainly acceptable to change a rating on an element as a result of this product exposure. Something that may have looked great in the quick presentation may turn out to be not so good after a long look. In the same way, some features may be much better than originally evaluated. Again, you are trying to get the best possible tool for your requirements so you want to do the best job possible in evaluating each product.

After you meet with each vendor, call the team together and review the evaluation. This will provide a chance for further comment without the vendors present. Once all the discussion has occurred, you will take the evaluation spreadsheets from each team member and consolidate the results into a single set. This new set will replace the earlier consolidated set and should represent the updated information and the latest numerical evaluations as well as all the comments. Individual team members may change their comments based on the greater detail that they will see in this round of evaluations. This should be expected and should not be problem.

When you have the consolidated evaluation, you can then rank the set of vendors in order based on the weighted numerical scores for the elements seen to date. This ranking will let you proceed to the next step, the selection. However, it is very possible that two of the vendors are so close that you are not comfortable calling a winner. You may also have non-technical issues that must be resolved in order to make a final selection. If this is the case, you may need to conduct some additional hands-on evaluations and/or preliminary negotiations on business issues. You must work out any of these issues so that you can fully complete the evaluation and proceed to a selection.

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It is not necessarily out of line to conduct as much as a week long, hands-on, evaluation with a couple of the vendors in order to really shake out their tools in your environment. If you choose to do such an evaluation, it is very critical that you can provide the vendors with the necessary data to model your environment and work with your hands-on team. The hands-on team will, out of physical necessity, be a subset of the overall team and generally should be the EA staff that will actually use the tool when it is acquired. This hands-on approach should answer any outstanding questions related to ease of use and applicability in your specific environment.

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**Step 4 Summary** – Conduct in person detailed reviews of your short listed tools working with the tool vendors. Conduct even more detailed week long final evaluation sessions as required to gather enough information to complete a through evaluation of each tool.

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### Step 5 – Final Selection

At this point in the process, you should have a completed technical evaluation with the vendor products assessed on an element by element basis and a series of functional area scores rolling up to a final numerical technical evaluation score and ranking. In addition to the technical feature evaluation, you must also look at some of the business issues. These primarily include the implementation costs, vendor experience/capability and total cost of ownership (TCO) for each product. As this analysis is involved, waiting to the point where you have narrowed down the selection to three or less products through your technical evaluation will facilitate this effort.

Implementation costs can be very important as you may not have a blank check for the acquisition and deployment of an EA tool. Implementation costs include the obvious components such as the actual cost of software licenses, but they also include infrastructure costs, training costs and labor and the development of your specific EA model using the tool. These items are best managed through a spreadsheet with care to insure that you have a fair comparison between products.

As you lay out the specific elements of the implementation costs, you will need to separate those costs that represent a “real” expense (one that requires a purchase order) and those that you already have budgeted, such as staff time. Although both are important, you may have more latitude with your staff costs than spending real money. As you pull this information together, you should start to obtain a comparable set of data for this major component of your selection process.

Training costs can be a very large portion of the implementation costs and could exceed the cost of the software. Without exception, all of the EA tools require user training. Most of the vendors have several training classes that go from simple basic user training to advanced training for the staff which will make changes to the tool’s EA metamodel<sup>8</sup>. Most companies will need to be able to make enhancements to the metamodel for any of the tools unless they work with a value added consultant that has created an extensive EA metamodel with the tool selected.

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<sup>8</sup> All of the EA tools require some metamodel that provides the structure within which you can create your EA. This metamodel defines the underlying objects, relationships, reports, and security for creating the EA in the tool.

## Selection of Enterprise Architecture Tools

Training can be from a few days to several weeks depending on the vendor. The larger vendors have classes at their offices on a published schedule. All vendors will conduct on-site training classes. These are usually charged at a fixed cost per class up to a maximum number of students plus travel for the instructor. Be sure to get all the details for each vendor so that you can compare the costs.

TCO is another area that is often overlooked in evaluations but should be a very real concern with any software acquisition. Most EA tools are only licensed to the purchaser, not sold like Microsoft Office. They generally have an annual cost for the license which, if not paid, results in having to discontinue use of the product. These annual license fees also generally include updates to the software which typically occur once a year. Be sure to investigate the process to move from one version to the next as it is sometimes a major effort to move your models to the next major release and may require some assistance from the vendor (at additional cost). This version migration may also require that you migrate operating systems and database releases on the infrastructure supporting your EA modeling effort. This may not fit with your overall roadmaps or support that you require from other organizations in IT at your enterprise, so you will need to fully understand any issues and constraints that might apply.

Once you have performed the remaining analysis described above, you will finally have numerical scores for the major components of your evaluation. Figure 3 shows an example of a summary spreadsheet that could be used to contain the summarized results of an evaluation.

RATINGS	5	4	3	2	1	0	Product A			Product B			Product C		
	Excellent	Very Good	Good	Fair	Poor	Not Applicable	Score	Weighted Score	Amount	Score	Weighted Score	Amount	Score	Weighted Score	Amount
WEIGHTS	5	4	3	2	1	0									
	Extremely Important	Very Important	Important	Somewhat Important	Little or No Importance	Not Applicable									
Category							Score	Weighted Score	Amount	Score	Weighted Score	Amount	Score	Weighted Score	Amount
Functionality							0	0		0	0		0	0	
Vendor Analysis							0	0		0	0		0	0	
Financial Analysis									\$ -			\$ -			\$ -

Figure 3 - Evaluation summary example

This method of summarization allows your team and management to see the relative ratings for the major components of the evaluation. This can be of value when different products score higher in different categories.

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**Summary of Step 5** – Analyze the business issues such as TCO and costs then combine with the technical functionality evaluation to create an overall weighted evaluation of the short list of products.

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## Understanding the Results

Now that you have a consolidated evaluation with final point scores for the top tier of products, what does it all mean? If you have an obvious clear winner in all categories, then you are almost done and very lucky. It is very possible, however, that you do not have such a clear winner and may have to make some more subjective final analysis to achieve a final selection. A common situation may be that the final cut tools score very close from a technical perspective but differ

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quite a bit from a financial perspective. This is not unreasonable and can be very fortunate so that you can go with the lower cost tool and not sacrifice functionality.

On the other hand, you may have the better functionality winner with the higher price. This means that you may well have management pressure to go with the lower price option. If that option's technical evaluation puts it well below the other choices, you have some work ahead. In this case, should you decide that you really need the technically better tool, you will have to build a solid cost benefit case to support your recommendation.

## Making the Selection?

With few exceptions, most EA tool evaluation teams must receive approval from others in the company management that have final control over the expenditure of funds. This may be your executive sponsor (the best situation), another senior level executive or some standing or ad hoc committee. You may also have to answer to other IT and line of business executives for your selection. Thus, the best approach is to assemble your data and selection process into a presentation supported with backup documents. This presentation should review your process, report on the results, provide your team's recommendation and provide any additional support for that recommendation as appropriate.

It happens at some companies that procurement rules may preclude any binding negotiation with vendors by you or your team. In cases where the final selection may be influenced by what type of "deal" you can work out with the vendor, you may have to enter into negotiations with your top choices before a final selection can be made. You should determine if such a possibility might occur in your enterprise before you get to this stage in the evaluation. Then you may be able to engage your procurement organization as part of the final evaluations so that when you get to the point of reporting to your executive sponsor (or committee) you have the negotiated deal factored into the evaluation.

## What Next?

You have made your final selection and it has been approved by the powers that be. You now purchase the software and must make it work. This should be where the fun begins. It is important that you create and use a project plan for implementation of your new tool. This plan should be developed during the final evaluation so that you can cost out the labor portion of your implementation effort. This plan may also include the use of consulting from both the vendor and other consultants. Building and following a plan will help you to keep on track during implementation of your tool and getting the maximum benefit from it.

Depending on the tool you have selected, based on your requirements, you may have to take another look in a couple of years. According to the META Group, Inc in a report issued in 2001; "by 2003, 70% of G2000 organizations involved in EA will revamp their architecture toolkit based on their maturity and objectives"<sup>9</sup> So depending on your evaluation criteria, you may need to dust off your evaluation methodology and update your requirements as your EA capability matures.

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<sup>9</sup> Handler, Robert; Enterprise Planning & Architecture Strategies File 146, November 21, 2001, META Group, Inc

## Selection of Enterprise Architecture Tools

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