Introduction of a Technology Selection Model

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Abstract

Applications and technology have matured in the marketplace. Most organizations have a line-of-business application that manages the business area. The issue then becomes how to move from the current technology to the next technology. A number of Information System theories deal with the intentions of users or, in this context, purchasing decision makers. Generally, the goal is to optimize the selection from a technology viewpoint. These theories do not address all of the human interaction specifics of technology selection. There are additional criteria that are not considered as part of the standard Information Theories of Reasoned Action or Technology Acceptance Model. The proposed Technology Selection Model includes peer & industry evaluations, vendor marketing efforts, Satisficing, organizational fit as well as the typical technical evaluation. The model is supported by theory from consumer behavior and evaluated against Earl’s Strategic Grid.

1. Introduction.

Applications and technology have been integrated into almost all organizations. The organizations will have implemented an application that directs the business process(es). Change, however is inevitable in business and technology, the organization has to consider how to move to the next technology. One of the basic decisions involves determining how to select the technology. The Information Systems field has a number of theories, including the Theory of Reasoned Action (TRA) and Technology Acceptance Model (TAM), that define the concept of developing an intention which results in a behavior. The question becomes what are the elements that are used to develop the intention.

The organization’s technology purchasing decision is based on rational criteria. The Theory of Reasoned Action (TRA) has the factors of attitude and subjective norm which provides an intention that leads to behavior. For the purposes of this evaluation, I am extending the TRA theory to that of a technology purchase decision. I am proposing a different set of factors that are an extension of the TRA. The extensions include evaluations based on external inputs.

The Technology Acceptance Model or TAM includes preconceived notions of the subject or evaluator which influence the evaluation process. The Technology Selection Model takes the preconceived notion and separates out the outside influences; the impact of peers and the impact of vendor marketing efforts. The focus of preconceived notions from TAM assumes the evaluation is part of the process. The goal is to integrate concepts from consumer behavior research with concepts from the Technology Acceptance Model or Theory of Reasoned Action into a single model or framework. The theories have behavioral intent leading to action. The action needs to be built on evaluation elements.

A number of theories and Information Systems papers present a number of methods of selecting systems in an optimal manner from a technology perspective. The decision, however, is not limited to only a technology perspective. The decision is going to be made from a socio-technical perspective. Chesbrogh and Rosenbloom support that the decision is both economic and technology based: “The realization of economic value from technology thus derives from the economic and social structure of the situation, rather than only from some inherent characteristic of the technology itself. This implies that selecting a market and constructing a value proposition involve managing significant complexity and ambiguity” [1]

Geisler also points out the need for a technology based on a social context. “We cannot evaluate technology unless and until we put it in the context of social and economic phenomena. Namely, until and unless we put a human dimension upon it. A better mousetrap, by itself, is useless, until and unless it is used and assessed by its users.” [2]

2. Technology Selection Model (TSM).

The current theories of TRA and TAM present the intent of the user but do not include the elements that make up that intent. The Technology Selection Model provides those elements and is built on both
Information Systems and Consumer Behavior research.

From an Information Systems perspective a technology is evaluated on known costs and benefits. The goal is to optimize the selection according to the technological parameters. The evaluators may not know all of the benefits, costs, or limitations so the evaluation will include some “leaps of faith” based on information from outside influences such as the vendors or peer organizations. Other models exist which include alternative selection methods such as ‘Fuzzy’ selection criteria in an unknown environment. [3], [4]

The TSM is shown in Figure 1. It consists of three constraints to the initial evaluation process: Benefits, Costs and Preconceived Notions. These general aspects will determine the basis of any technology selection. General ballpark numbers are used to start either a formalized purchasing or general exploratory process. These factors are basis of the TRA model.

The TSM allows for five components to affect the evaluation process: Peer and Market Information, Vendor Marketing Efforts, Technical Evaluation, Organizational Fit and Satisficing. Satisficing is the concept introduced by Heib Simon [3] that allows for the selection of a product that is not the best but good enough. The peer and market information as well as the vendor marketing efforts are grouped together since they relate to outside influences that are considered in the evaluation process. The Technical Evaluation, Organizational Fit, and Satisficing concepts are grouped together since they relate to technology reviews in relation to the organization’s context or internal influences.

The TSM also includes a feedback loop. The results from any technology decision will be remembered during the next selection process. This information becomes part of the pre-conceived notions. This information can be related to the quality of the technology or the information. If peer or vendor information was incorrect, that information may or may not be considered in the next evaluation. Should a vendor perform poorly, then that vendor may be precluded from the next process as part of the pre-conceived notion.

The model factors were selected from a combination of my personal experience and consumer research. My experience has included ten years as a marketing Systems Engineer for IBM and thirteen years as an Information Systems Manager for a small city. As a Systems Engineer, part of my job included the vendor marketing efforts. As a Systems Engineer, my responsibilities included promoting the vendor’s sales. As an Information Systems Manager I have used the peer and market information influences in the decision process. Other components have their basis in Information Systems research, such as Satisficing, or Consumer Behavior research.
Kontio et al describe the factors for Common-Off-The Shelf or COTS software. [6] The authors discuss three factors: functional requirements, product quality characteristics, along with the domain and architecture. The strategic concerns include acquisition costs, effort saved and vendor future plans. These factors are elements of the TSM. The functional requirements are described in the Technical Evaluation. The product quality characteristic elements are described as part of the Technical Evaluation, Satisficing, and Peer/Market evaluations. The domain and architecture would be considered as part of the Technical Evaluation. The strategic vendor concerns are addressed in the Vendor Marketing Efforts.

The TSM is an extension of a TRA framework. The TSM provides more detailed components then just the costs, benefits and pre-conceived notions. The TRA attitude component could be equated to cost, benefits and preconceived notions. The subjective norm could be equated to the components of peer or industry marketing evaluations and vendor marketing efforts.

The preconceived notions of an evaluator might range from none to extensive. Some preconceived notions or past experience may discount other information such as peer reviews or vendor recommendations. Apple Computer provides server hardware but an evaluator may not consider them since the brand is associated with workstations. Most evaluations have moved away from the lowest cost bid model to the lowest responsible bidder criteria. Bidders may have their bids rejected if they are not plausible, in effect, not having submitted a responsible bid.

**Technical Evaluation**

The technical evaluation is the comparison of the proposal against the initially identified criteria. The questions that should be asked include: is the bid complete, what elements have functions that are underbid and does the bid have components that the vendor has added function beyond the requirements. The philosophy for IBM’s and many other vendor’s in responding to a bid is to never say that an element was not available as requested. They would respond that it is available but in an vendor specified way. Common practice is that a proposal could be rejected if any element is not available. The City of Monrovia requests that vendor’s lists their capabilities in three categories: the function is included in the bid, the function is in a future release, or the function is not available.

Depending on the size of the organization or project, the evaluation may be done by a committee or an individual. A committee will value the various factors differently according to each of their own perspectives. There will be an impact which would be defined by organizational theory. The outside factors would be the same but the criteria may be slightly different.

**Satisficing.**

The Satisficing principle is part of a technology selection process. The normal evaluation process would include a straight cost benefit analysis which looks for the best solution but the process needs to have a definition of how the evaluator defines the term best. There is the common business development thought: ‘If you bill a better mousetrap the world will beat a path to your door’ My addendum would be ‘but not if the competitor is cheaper and good enough.’ There are a number of examples of superior technology that is discarded for technology that industry thinks is good enough.

In many cases a decision maker will look for all of the possible options and then scale back the options to meet the budget or desired goals. The philosophy of what are all of the things in a Cadillac and how many of them can we afford? The evaluator needs to identify which features are required. In many organizations the evaluator will identify the ‘have to have’ items separately from the ‘nice to have’ or future desired items. The beginning of Satisficing is defining what are the ‘have to have’ items.

The Satisficing concept is not new. It is accepted as a core philosophy of agile programming; design only what is sufficient. The Satisficing concept can also be used to select between competing technologies. There are numerous examples of a technologically superior product being discarded in favor of a cheaper product that will get the job done.

Chua also discusses the concept: “in deciding whether to invest in ICT, we should first decide by Satisficing for a good enough goal amongst several other legitimate goals, instead of irrationally and senselessly seeking to maximize only one function value.” [7]

Wikipedia defines Satisficing as “a decision-making strategy which attempts to meet criteria for adequacy, rather than to identify an optimal solution.” (8) The definition then adds an interesting evaluation
cost element: “A satisficing strategy may often, in fact, be (near) optimal if the costs of the decision-making process itself, such as the cost of obtaining complete information, are considered in the outcome calculus.” Many evaluations do not consider the marginal cost of obtaining additional information beyond what is sufficient.

One market example of the satisficing concept is the Token-Ring (TR) versus Ethernet networking battle. Token-Ring was a superior technology to the Ethernet 10BaseT technology. The issue was that the TR adapters were priced significantly higher than comparable Ethernet adapters costing $200 and $100 respectively. The marketplace found that the cheaper Ethernet technology was sufficient. A similar battle happened with the operating systems OS/2 versus Windows. OS/2 had arguably better technology than Windows. OS/2 was developed as a joint project between IBM and Microsoft. There was a falling out in the relationship between these behemoths. Each company started to develop their own products. Again, IBM priced its product too high for the marketplace. They felt that the value offered was worth the price. The marketplace found that the Windows product was sufficient.

Many evaluation models consider technology uncertainty. Krishnan and Bhattacharya propose two techniques to mitigate uncertainty, parallel design and sufficient design. [9] The parallel design would be part of the technical evaluation. The sufficient design would be a part of the Satisficing element of the TSM.

Organizational Fit.

Organizational fit considers how well a proposed system is expected to fit into the organization’s culture. As we consider the functionality of programs, most mature programs will have similar functionality. If they have different levels of functionality, other evaluation criteria will eliminate the alternative from consideration. A simple example is that both WordPerfect and Microsoft’s Word both have the capability to underline, bold, spell check and perform all of the functions that a user expects from a word processor. In this example, the issue is how it fits in with the culture or training requirements of the organization.

The application flow is an expression of programmer. Some people will see some applications as intuitive since their thought process is similar to that of the programmer. A similarly mature fully functioned program could be disregarded out-of-hand because the interface does not fit how the organization views that it works. From the municipal application environment, the flow and intuitiveness of any application are important considerations in the final evaluation.

Another key element of Organizational Fit involves the ‘make or buy’ acquisition decision. One of the differences when migrating to a new application as opposed to the development of a new one is that the organizations has better defined its expectations. It has had the earlier application to use as a prototype for the next one. Those expectations include not only the functionality but the flow of the application as well. Most organizations consider how similar a proposed application ‘flows’ as compared to the current one. Due to simpler training costs, many firms put a high value on applications that are similar to the current processes.

The organizational fit decision can also be a battle with the level of customization that is available from the vendor. The application vendors would prefer install a standardized version of their product rather than adapt the application to each customer situation; “Typically, ERP vendor recommend process adaptation and discourage ERP adaptation for fear of potential performance and integrity degradation as well as maintenance and future upgrade difficulties”. [17] Another technology example is the software as a service field. Since the vendor offers a product that has few customizations, the evaluator has to take the package ‘as is’.

Hong and Kim consider three parts of organizational fit in regards to ERP systems, however it should apply to all applications: data, process, and user fit. [17] Hong and Kim also define three ERP implementation variables: ERP adaptation, process adaptation and organizational resistance. I would argue that these variables would apply to any mature application migration, not just an ERP decision. Automated organizations have adapted their processes to take advantage of a computerized system. When a replacement system is evaluated, many times the selection is judged on how much the organization will have to change (process adaptation) or if the system can be customized (ERP adaptation). The organizational resistance to change could be a topic in itself. Other research has pointed out that there can be disruptive change, political issues for power and resources. Cooper and Zmud point that resistance to acceptance can also be found in users not understanding the processes. [19]
It is interesting that Volkoff references the social component in the application migration. [18] The adaptation of the organizational processes and the application is an iterative process entailing on-going social action that is constrained by the properties of both the organization and application.

Organizational fit could be categorized in a number of ways. If you consider it part of a social technical influence then it might be grouped with peer and vendor influences. If you categorize the influences according to consumer behavior as outside or inside influences then it might be categorized as an inside influence.

Straub et al have demonstrated that the TAM framework may not predict the technology use across all cultures. (20) We could infer that technology use would impact a technology decision. The study found similar acceptances between American and Swiss cultures but a different rate of acceptance in the Japanese culture. They postulate that some of the differences may be due to “more uncertainty avoidance, greater power distances between managers and workers, collectivist sentiments, and assertiveness may limit email use and disassociate usefulness from use.” The TSM extends TAM by considering organizational fit. The national culture is as much a fit of an organizational fit as a corporate one.

Peer / Market Information

Since most lines of business have an automated system available to them, many functional markets have become mature. There is little in the way of business process innovation. In these environments, there are generally a large number of installations and relatively little uncertainty since someone else has already done what any organization is interested in doing. Each application area has established a number of best practices. The best practices help to set the stage of what the entire market is doing. The individual organizations can then evaluate their needs against the industry norms to look for how they can perform processes differently and to their advantage. The inventory of knowledge can be invaluable.

Using the municipal software market as one example, the modules from the different vendors provide similar functionality. The distinctions have become more of the fit in the organization along with the vendor relationship since it is assumed that the software will be in place for ten or more years. The City of Monrovia, California, could be considered an average small city with a population or 40,000. The City’s last financial system was installed 15 years, the current permitting system for 10 years, and recreation management system for 12.

Another sign of a mature market is the consolidation of the companies that occupy that niche. The municipal permitting application vendors that are prominent in California have shrunk from 8 to 4. The Recreation Management application vendors have shrunk from 5 to 3. The marketplace is showing that there is less product differentiation needed therefore there are less products available due to the consolidation.

Given the maturity of the applications, there is a great deal of knowledge available from peer organizations. Since there is an inherent advantage in keeping proprietary processes secret, some organizations may be reluctant to disclose information. Government organizations have an advantage in that they are not in competition with one another so it is to everyone’s advantage to share information.

One issue that has currently arisen is that not all peer provided information will be complete and disclose all of the application’s problems. The peer review process will ask for vendor provided references. Of course, the vendor is only going to provide references with success stories. It is also in the reference organizations best interest to have additional agencies purchasing the same software for support reasons. The reference organization may not quite disclose all of the application’s defects or ‘warts’. This scenario leads the evaluator to not put all of his or her faith in the peer evaluations. There is also the question of how similar is the peer’s environment to the evaluator. If there are functional differences in the environment then the recommendations may not be appropriate.

Vendor Marketing.

Gronroos defines some of the marketing characteristics.[10] Marketing is a way to sell items from the vendor’s point of view. “The firms Pillar is to stay in business and find customer need. The marketer, who is in the organizational structure is placed in a marketing department, plans various means of competition, and blends, them into a marketing mix, so that a profit function is optimized.” The marketer’s job is to provide a compelling story so that it makes it easy for the customer to make a decision in the marketer’s favor.
His job is to impact the purchasing or selection process.

Kunda and Brooks describe some of the socio-economic factors that vendors will be evaluated on:

- **Business Issues:** Financial Case and long term company viability
- **Customer Capability:** customer experience with product, Expectations, Internal politics
- **Marketplace Variables:** product or technology reputation, maturity/stability, restrictions, market trends and viability of products or technology over the long term
- **Vendor Capability Variables:** vendor profile, reputation, certification, stability, availability

At one point in my career, I was an IBM Advisory Systems Engineer. IBM had its own marketing philosophy for its sales force; relationship marketing. The company would have representatives for the larger accounts and let the distribution channels service the smaller accounts since they would be too expensive to manage directly. The IBM representative needed to develop a relationship with the large account decision makers. IBM was able to demonstrate value to the customer in having the long-term relationship since the company understood the customer’s business and could provide appropriate solutions. But a relationship is a two-way street and IBM used the relationship to its advantage. When the customer made a decision that was not favorable to IBM, they would go up the chain of command to see if the decision could be overturned. As the pressure is added, then the relative weight of that evaluation component is increased.

The existing models such as TRA assume that marketing efforts are a component of attitude or could be quantified as a benefit. I would argue that marketing efforts are ongoing during a number of steps of the evaluation process and that vendor marketing is inherently unpredictable. The vendor needs to do his own evaluation to determine at what level is the business desirable. The vendor can decide to provide resources at a certain point, let the business go as unprofitable, or “buy the business” where the vendor is loosing money on the project to be made up in future projects. The vendor can provide focused information or the promise of long-term relationships which could include for example: future support and product disclosures, cost benefits and an ease of doing business. The vendor marketing may also add evaluation factors that are outside of technology such as personal influence. Other factors may include aspects that have not been verified such as promises of marketplace or technology predictions and roadmaps. Many vendors have provided descriptions of products that never materialize which sometimes is referred to as ‘vaporware’. The question of ‘vaporware’ leads to vendor credibility and value of the client-vendor relationship in the TSM model.

**Request for Proposal as a Part of the Evaluation Process.**

The purchasing process will also affect the impact of any evaluation criteria. Different processes will give different weights to the various elements in the TSM. A purchase order or Request For Quote (RFQ) will specify the exact equipment to be purchased. The evaluation will be based on a Request For Proposal (RFP) which generally allows the bidder to propose the best solution. The evaluation criteria used will be more qualitative to judge the equivalence of the proposals.

Different type of organizations will have different purchasing requirements or policies. These steps will affect the weight of criteria. The organizations that require the lowest responsible bidder will select the lowest bidder if the products and past performance of the bidder are acceptable.

The information gathering process starts with the traditional technical information, cost and benefits. The project developer will phrase information requirements due to their own pre-conceived notions. In the business world, RFP’s are written with an end product in mind wherever possible. The proposal writer will have done their homework and will generally know what features or functions that they are looking for. The vendor will also ‘help’ write the RFP by providing samples, which in effect, will guide the selection criteria to their advantage. The samples can includes the structure, which is commonly called boilerplate, of the RFP. More importantly they can provide a list of the functions or requirements that other organizations have selected.

The factors that go into a decision will start with costs and benefits framed by pre-conceived notions. As the RFP is reviewed the evaluation process will clarify these factors. The peer/market information and vendor marketing will add details to the evaluation. These details will help to clarify the costs and benefits. Depending on the RFP process, the initial selection may be focused in a specific
direction. In a bid or RFQ, the product is defined to the level that price and availability (a benefit) may be the only criteria. In a RFP, the vendor is free to provide the solutions that they feel best suit the customer. The criteria can then be more qualitative since the benefits may or may not be quantifiable. It can also be difficult to accurately predict the value of future benefits. In contrast, most bids and RFQ’s are selected on lowest price since the products or services have been judged to be similar enough so that any differences are discounted out of the evaluation.

The RFP process can be more than a one-stage event. Vendors may get multiple opportunities to refine their offerings. Using municipal government as an example, the process includes selecting a short list of the vendors from the initial response list. The short list is determined using all parts of the TSM model. The evaluator, based on the overall costs, benefits, and pre-conceived notions, will discount or eliminate the responses. It is important to recognize that with the additional interactions, the vendor marketing efforts and the relationship that is developed can play a larger role in the overall evaluation. There is an old phrase in sales; “you don’t buy things from people that you do not like”. The short list evaluation process will include requests for additional information and possibly demonstrations. Using the short list, the evaluators will check the submittal references which are included in the TSM model as part of the external influences.

The evaluator will also have to equate the proposals. It is straightforward to determine the differences between a truck that is a Ford, GM or Toyota product. It is harder to evaluate for an ‘apples to apples’ comparison a functional software system. Again, using the Municipal software context, the evaluator will have to assign a cost or value to the differences in the proposed solutions. The value can be arbitrarily assigned since the bid did not directly list a cost such as a free warranty period for one vendor where other vendors charge for the first year separately. In many cases, the value is an exact dollar amount such as a warranty period. In other cases, the evaluator will have to assign a value for a feature or enhancement that only one vendor may offer. The assigned value can be arbitrary but this analysis needs to be included in the evaluation model. The TSM addresses this evaluation area by including the three parts of the internal influences component. The value can be determined using Satisficing, since the evaluator may not equate the same value that the vendor suggests. The evaluator may also either increase or decrease the value on how he or she determines that the function will work with the fit of the organization.

**Consumer Behavior.**

Consumer behavior provides the theoretical basis for extending the accepted TRA model into a TSM. Current introductory consumer behavior coursework lists the following five steps of a purchasing decision: problem recognition, information search, alternative evaluation, purchase decision and post-purchase behavior. [12] Those steps can be placed in the TSM:

- problem recognition – preconceived notions / benefits
- information search – determine what information is important – subjective, initial costs and benefits, marketing efforts
- alternative evaluation – combination of preconceived notions, market evaluations, marketing efforts
- purchase decision – evaluation from cost /benefit, norms, market evaluations, marketing efforts
- post purchase behavior – input for next purchase – affect pre conceived notions, add to marketing reviews.

Consumer behavior also lists two search attributes. An internal search could be equated to preconceived notions and the external search would consist of the market evaluations. Belch and Belch explain that consumers undertake both an internal (memory) and an external search. [13] Belch and Belch list the sources of the information to include personal, commercial, public and personal experience.

The research from Belch and Belch is consistent with the TSM. The sources of information listed by Belch are in broken into two sections: the Peer evaluations and Vendor Marketing efforts. A later branch of the strategy literature incorporated cognitive bias into the idea of strategy. Prahalad and Bettis [14] introduced the notion of a dominant logic: a set of heuristic rules, norms and beliefs that managers create to guide their actions. The norms could be modeled as pre-conceived notions. The heuristic rules could be part of the technical analysis or organizational fit. The technical analysis category is left somewhat ‘open’ to interpretation depending on the product or technology being evaluated. The evaluation could be quantitative or qualitative.

**Relationship to ERP Selection Research.**
The most difficult selection process involves designing complex systems such as Enterprise Resource Planning (ERP) systems. The TSM is consistent with the current ERP research literature. Illa et al describe the various phases of selecting an ERP system. The TSM structure fits within their criteria: [15] Their Phase 0 defines the preconceived notions. Phase 1 is the search for candidates. It is a pre-filter of options. Phase 2 is to dig into the candidates and further filter which would be eligible for selection. The peer and industry evaluation, vendor marketing, and Satisficing elements of the TSM would be used in Phase 3. Phase 4 is the final phase negotiation and planning which would include the vendor marketing efforts.

How TSM relates to Earl’s Strategic Grid.

Earl’s strategic grid is used to demonstrate how the model can be used across the spectrum of business technology environments. The relationship to the strategic grid shows that different evaluation criteria will have different weights depending on which technology quadrant the organization is in. The comparison provided is a theoretical one.

Any model will need to be able to account for businesses differing goals and processes. Earl’s Strategic Grid shows the impact of technology against the strategic phase. [16] The evaluation criteria will also change over time due to new contexts.

The grid has a future strategic use of technology on one axis and operational use on a second axis. Each company can be placed in one of the four quadrants on the grid. The grid consists of support, factory, turnaround and strategic. As the strategic model goes from using commodity to advanced products the decisions will move from pricing evaluations to detailed evaluations using all five forms of criteria.

Earl’s Strategic Grid Quadrants:

Support (Low Technology, Low Strategic) This quadrant has a mature market with little product differentiation. The products have similar cost and benefits. The product evaluations are plentiful since the market is mature. The decision will most likely based on cost factors, but possible personal influence from marketing efforts could be tie breaker. Personal preferences may also be an unseen overriding factor; In the 70’s and 80’s environment, you didn’t get fired for buying IBM.’

\[ \text{Bid} – \text{known parts, just need pricing} \]
\[ \text{Satisficing} – \text{known products / interchangeable} \]

Turnaround – (Low Technology, High Strategic) The technology is not bleeding edge, that category would be in the strategic quadrant. The benefits and market evaluations are important, as is promises of future

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<td><strong>Turnaround</strong></td>
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<td>Mature Market/ Little Product Differentiation Peer Evaluations Vendor Alternatives</td>
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Table 1
support from marketing since the company is venturing into the unknown

- Satisficing – need more effective technology than existing levels

Factory – (High Technology, Low Strategic) There are known processes, technology, and benefits. The cost versus benefits analysis can be calculated. The product is mature and has a known future (migration or path). There may be a decision to outsource.

- Request for Proposals (RFP) The vendor will select the best solution for his products.
- Vendor marketing might have a larger impact in this quadrant due to little differentiation.
- Satisficing – need better than existing

Strategic – (High Technology, High Strategic) bleeding edge, need good marketing reviews / successes, promise of future support, Somewhat of a preconceived notion - risk taker, benefits are high, ultimate costs could be unknown

- Request for information – time/materials contracts since unknown costs
- Satisficing – need better technology
- Force reduction in costs for alternative technologies

The location on the grid might direct marketing efforts. Depending on where the company is placed in the strategic grid, the evaluation factors will have a different weight. Where there is little product differentiation, the preconceived notions, vendor marketing and peer/industry evaluations will have a heavier weight. As the technology becomes undetermined, the vendor marketing will become more important to provide information and solutions.

3. Conclusions and Future Research

Technology selection purchase decisions are not made in a marketing vacuum. There are elements that affect the technology selection that are outside of the traditional cost-benefit analysis. The Technology Selection Model identifies those elements and the impact that each has on an organization. Some of the elements will have greater weights in evaluating technology. Those weights will depend on technology strategy of the organization which is demonstrated by Earl’s strategic grid.

The Technology Selection Model builds upon TRA, TAM and Consumer Behavior to provide additional internal and external elements in the evaluation: Peer/Industry Evaluations, Vendor Marketing Efforts, Organizational Fit, Satisficing, and Technical Evaluation. The model demonstrates that current selection results will lead to the preconceived notions in the next selection process or future preconceived notions. The Peer/Industry Evaluations and Vendor Marketing Efforts are grouped into typical consumer behavior defined outside influences. The Satisficing, Organizational Fit and Technical Evaluations are grouped into the inside influences category. The model is then used to show how the weights or impacts of evaluation criteria will change depending on which quadrant of the strategic grid the organization is in.

The motivation for this study was to look at some of the real business issues that are used by an organization in purchasing a system or components that are used in a development effort. A purchasing decision will have a different process than just a technical evaluation of a technology. The issues need to be defined in elements beyond just costs and benefits which would be found in a typical cost-benefit analysis. Since the marketplace for technology has matured, there are fewer differentiations among the firms. Our processes for identifying those differentiations have evolved and I want to include those aspects in our IS technology behavior models. What I am finding is that those elements have been identified in other fields such as consumer research. We need to identify those aspects that are relevant to the Information Systems field and include them in our standard research and modeling.

4. References.

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