

Chapter 1 : Blog | Enterprise Management Ltd - Part 5

James Taylor, CEO of Decision Management and Dr. Juergen Pitschke, Founder and Managing Director of BCS, answer your top questions about Decision Management in this 5 part series of webinar clips.

Data Warehouse Goals and Objectives: Part 1 Data Warehouse Goals and Objectives: It is the second in a three-part series on Data Warehouse Goals and Objectives. In this article, we will examine the traditional decision support systems DSS and the reasons why they have failed to provide complete, correct, and timely information to the organization. In the two follow-up articles, we will describe how short term and long term data warehouse objectives address the deficiencies of traditional DSS environments. Shortly after manual processes were automated, management in all companies and across all industries started to ask for data from their newly automated systems. Their requests were heard and promptly put on the backlog, because the main focus of the time was still on automating processes. However, the hunger for data was so great, and the tools for manipulating that data were so limited, that it did not take long for data processing to split into two segments: What happened during the decades that followed is a familiar story to all of us. Decision Support Systems could not be built fast enough; a new market for DSS tools was created; business units started to hire their own programmers, and more recently some business units are even buying and managing their own technology platforms. On the surface it appears that all is well now; that all information needs are being met; that all participants are satisfied. When the impact of the deficiencies of our traditional DSS environment is really understood and felt, the goals and objectives of a data warehouse environment become very clear. IT technicians dedicated to one or more business units – This is the most common support model. One or more business units are matched up with an IT unit which is dedicated to solving the decision support needs for those business units. The IT unit may be a formal unit within the IT organization, or it may just be an informal group of two to three people whose priority it is to serve those business units. In both cases, the technicians are exclusively supporting their business units. It requires little examination to understand that both models result in DSS deficiencies when seen from the organizational point of view. DSS Deficiencies As we look at some of the most common DSS deficiencies today, we realize that they are so prevalent, and that we have become so accustomed to them, that we almost accept them as part of the fabric of system development. As long as these deficiencies exist, there will always be a need to build another system, write another bridge between two systems, rewrite the system in another language, and buy another tool. However, if we seriously think about the impact of the situation, we realize the tremendous waste of time, money and resources we have also been accepting for all this time. Just what is the impact for the most common DSS deficiencies? Here are some examples: Data is not understood – This applies in a lesser degree to the original users of a DSS who had the system custom built. They probably understood their data, or at least they thought they did. However, new users, either in the same business unit or from other business units, who want to use the data often do not have the same understanding of it. The data names are often reused and misleading, the data content has changed over the years, and how the data is used in reports may also not be self explanatory. These new users must now take the time to search through documentation, if any exists, or ask other people who have been using the data to explain it to them. Most of the time these explanations are not documented and repeated over and over. And if they are documented, the documentation seldom leaves the original business unit, is almost always out of date, and its existence is often not known to everyone else in the organization. The time spent by the new users and the staff assisting them to learn about the data is wasted time. Where it is possible and appropriate for different business units to have their own view on the data, the absence of reconciling and capturing these views in meta data leads to arguments between users about what the data means, what its values should be, and how it should be used. Again, a lot of unnecessary time is spent on these arguments. Too often these labels spill over to the innocent staff that developed the other systems and reports. Not only is energy wasted on arguing about who is right and who is wrong, but the bigger damage is done when different groups no longer respect each other and the work atmosphere is degraded. The impact is lower morale, which usually manifests itself as lower productivity and lower quality. Here we have a situation where the understanding of

data is not only different between business units, but also between the business unit and its supporting IT staff. The impact of this solution surpasses low morale and low productivity into tangible costs for duplicating technology platforms. Yet, when faced with the task of analyzing the operational source data and cleaning it up for the DSS, we hear equally frequently such excuses as: No one else needs to access it. Data is not shared or shared reluctantly â€” Because traditional DSS development has been business-unit centric it is no surprise that data sharing is neither encouraged nor sought after. Users who have full control over their systems in terms of data definitions, data acquisition, data cleansing, data transformation, database design, and tools used, have no incentive to share what they develop. And there certainly are no incentives to give up that control, especially if upper management is still holding them accountable for delivering the system in a very short time frame. Sharing means involving other users. Involving other users means reconciling their views of the data. Considering other views will slow down development. Slowed down development could result in missed deadlines. Missed deadlines will be remembered at performance appraisal time. An unfavorable performance appraisal will result in a small raise, or no raise at all, and most likely no bonus for the year. On the other hand, by keeping things separate the raises and bonuses are safe, even though different users will spend time and money to reinvent the proverbial wheel. Data is not integrated â€” Even if there were a willingness to allow other users to share their data, as long as business units build their stand-alone systems based on their individual views, data between systems will not be integrated. Therefore, accessing data across multiple systems often involves writing complicated bridges between systems; a time consuming and costly solution. Historical data is not available â€” We cannot conclude this section without talking about another paradigm shift in DSS: The user community of the DSS environment is also changing from business administrators to business analysts and executives from such business units as marketing, legal, finance and human resources. The new focus on tactical, and especially on strategic decision making, brings a new requirement to DSS: This translates into the need for historical data which is as easily accessible as current data. Since traditional DSS do not typically store historical data in the same manner as current data, analysts end up creating new elaborate systems to accomplish their analyses. It can be weeks before an analyst can complete an analysis assignment, because that is how long the process of extracting current data, merging it with historical data, running queries and analyzing the query results may take each time. Data Management Solutions Data warehousing is not the first attempt at tackling the data management problems discussed above, but it seems to be, if done correctly, the most effective so far. One of the first methods for managing data was the corporate data dictionary. Information Engineers spent years loading a central data dictionary with technical data from their operational systems. They ended up with thousands of data elements, hundreds of files, hundreds and thousands of programs and job control language JCL procedures representing all of their systems. It took many more years to analyze and define all the accumulated systems-related data in the data dictionary. This was an honorable first attempt at gathering and maintaining meta data. However, the only visible benefit of this exercise appeared to be a tremendous understanding of corporate data by one or two IT analysts, and not much else. Data Administration Since the idea was good but the concept was unworkable, Information Engineers quickly re-invented themselves as Data Administrators. Their mission was the same, but their method was different. A new technique was gaining much popularity during the rise of relational database management systems. This technique was called Entity-Relationship modeling, or logical data modeling. There were some distinct benefits to the logical data modeling approach over the old data dictionary approach: Top-down analysis â€” Logical data modeling was based on user participation. Having users involved in the analysis shortened the process considerably. Business-centric â€” The data was being analyzed from a business perspective, not from a technical perspective. The benefit was that users, not just one or two IT analysts, now had a tremendous understanding of corporate data. With few modifications to a logical data model we were actually able to implement the model as an application database. Data Administration is still aiming for more than managing the data for isolated stand-alone application databases. The charter of Data Administration remains the management of corporate data across all business units and all systems in the organization. Data Warehouse Administration The mission of a Data Warehouse is to provide consistent and reconciled business intelligence, which is based on operational data, decision support data, and external data,

to all business units in the organization. In order to do that, corporate data must be analyzed, understood, transformed and delivered. Therefore, the Data Warehouse Administration must coordinate and oversee the development, delivery, management and maintenance of the entire data warehouse environment. Conclusion It has been difficult for IT professionals to keep up with user demands for information. Many DSS projects are running in parallel to satisfy the different business units of an organization. Since these parallel development activities are neither coordinated nor integrated, they are producing stand-alone DSS systems. These stand-alone systems do not provide an acceptable data management solution because of their inherent deficiencies. In our next article, we will examine some short term data warehouse objectives that will reduce the deficiencies of traditional decision support systems. Larissa can be reached at methodfocus@earthlink.net. He co-authored a methodology and project planning product tailored specifically for data warehouse. Sid is an international speaker at data warehouse and industry conferences. He can be reached at sidadelman@aol.com.

Coaching others is a vital part to every leader's job and the key to a leader's success. After all having outstanding staff reflects beautifully well on the leader.

Transmissions to the GPE must be in accordance with the interface description available via the Internet at <https://www.gpe.gov>: When the proposed acquisition provides for a total or partial small business program set-aside, or when the proposed acquisition provides for a local area set-aside see Subpart Contracting officers must use one of the classification codes identified at <https://www.gpe.gov>: Contracting officers may publish notices of solicitation cancellations or indefinite suspensions of proposed contract actions in the GPE. However, the dollar threshold is not a prohibition against publicizing an award of a smaller amount when publicizing would be advantageous to industry or to the Government. Contracting officers shall transmit synopses of contract awards in the same manner as prescribed in 5. Washington, DC, time on the day of award. Agencies shall not release information on awards before the public release time of 5 p. Contracts excluded from this reporting requirement include—

- 1 Those placed with the Small Business Administration under Section 8 a of the Small Business Act;
- 2 Those placed with foreign firms when the place of delivery or performance is outside the United States and its outlying areas; and
- 3 Those for which synopsis was exempted under 5.

Agencies may also release information on contract awards to the local press or other media. When local announcements are made for contract awards in excess of the simplified acquisition threshold, they shall include --

- 1 For awards after sealed bidding, a statement that the contract was awarded after competition by sealed bidding, the number of offers solicited and received, and the basis for selection e.

When it is necessary to obtain information from potential contractors and others outside the Government for use in preparing Government estimates, contracting officers shall ensure that the information is not publicized or discussed with potential contractors. Contracting officers shall process requests for specific information from the general public, including suppliers, in accordance with Subpart Contracting officers shall give Members of Congress, upon their request, detailed information regarding any particular contract. When responsiveness would result in disclosure of classified matter, business confidential information, or information prejudicial to competitive acquisition, the contracting officer shall refer the proposed reply, with full documentation, to the agency head and inform the legislative liaison office of the action. To assist industry planning and to locate additional sources of supply, it may be desirable to publicize estimates of unclassified long-range acquisition requirements. Estimates may be publicized as far in advance as possible. The agency head, or a designee, may release long-range acquisition estimates if the information will --

- 1 Assist industry in its planning and facilitate meeting the acquisition requirements;
- 2 Not encourage undesirable practices e.

It may also contain such additional information as the number of units last acquired, the unit price, and the name of the last supplier. Further publicizing, consistent with the needs of the individual case, may be accomplished by announcing through the GPE that long-range acquisition estimates have been published and are obtainable, upon request, from the contracting officer. The exchange and coordination of information is particularly beneficial during the period of acquisition planning, presolicitation, evaluation, and pre-award survey. Each agency or contracting activity receiving such a request shall furnish the information requested. Authority to approve the publication of paid advertisements in newspapers is vested in the head of each agency 44 U. This approval authority may be delegated 5 U. Contracting officers shall obtain written authorization in accordance with policy procedures before advertising in newspapers. Unless the agency head determines otherwise, advance written authorization is not required to place advertisements in media other than newspapers. Contracting officers shall give small, small disadvantaged, women-owned, veteran-owned, HUBZone, and service-disabled veteran-owned small business concerns maximum opportunity to participate in these acquisitions. Advertisements may be paid for at rates not over the commercial rates charged private individuals, with the usual discounts 44 U. Every invoice for advertising shall be accompanied by a copy of the advertisement or an affidavit of publication furnished by the publisher, radio or television station, or advertising agency concerned 44 U. Upon receipt of an invoice supported by proof of advertising, the contracting officer shall attach a copy of the written authority see 5. Basic ordering

agreements may be placed with advertising agencies for assistance in producing and placing advertisements when a significant number will be placed in several publications and in national media. Services of advertising agencies include, but are not limited to, counseling as to selection of the media for placement of the advertisement, contacting the media in the interest of the Government, placing orders, selecting and ordering typography, copywriting, and preparing rough layouts. The services of advertising agencies in placing advertising with media often can be obtained at no cost to the Government, over and above the space cost, as many media give advertising agencies a commission or discount on the space cost that is not given to the Government. Some media do not grant advertising agencies a commission or discount, meaning the Government can obtain the same rate as the advertising agency. If the advertising agency agrees to place advertisements in noncommission-paying media as a no-cost service, the basic ordering agreement shall so provide. If the advertising agency will not agree to place advertisements at no cost, the agreement shall-- 1 Provide that the Government may place orders directly with the media, or 2 Specify an amount that the Government will pay if the agency places the orders. The basic ordering agreement also may provide for the furnishing by the advertising agency of art work, supplies, and incidentals, including brochures and pamphlets, but not their printing. This searchable database is a tool that may be used to identify existing contracts and other procurement instruments that may be used to fulfill Government needs. This subpart prescribes posting requirement for presolicitation and award notices for actions funded in whole or in part by the American Recovery and Reinvestment Act of Pub. The requirements of this subpart enhance transparency to the public. This does not include modifications to existing orders, but these modifications are covered postaward, see 5. Contracting officers should concurrently use their usual solicitation practice e. Use descriptions of the goods and services including construction , that can be understood by the general public. Avoid the use of acronyms or terminology that is not widely understood by the general public. Follow usual publication procedures at 5. Include in the description a statement specifically noting if the contract action was not awarded competitively, or was not fixed-price, or was neither competitive nor fixed-price. These notices and the rationale will be available to the public at the GPE, so do not include any proprietary information or information that would compromise national security. The following table provides examples for when a rationale is required.

Chapter 3 : enterprise request management | Kinetic Vision - Part 5

During this series I'm exploring thoughts around exactly what is Case Management and what technical features are really required to have a complete Case Management solution. In this post, I'll be exploring the role of Collaboration and Enterprise in the context of Case Management.

Sign up to our email newsletter to be notified about our special offers and latest articles. If you learn how to apply a systematic risk management process, and put into action the core 5 risk management process steps, then your projects will run more smoothly and be a positive experience for everyone involved. The potential for a risk to have a positive or negative effect is an important concept. Because it is natural to fall into the trap of thinking that risks have inherently negative effects. If you are also open to those risks that create positive opportunities, you can make your project smarter, streamlined and more profitable. Uncertainty is at the heart of risk. You may be unsure if an event is likely to occur or not. Also, you may be uncertain what its consequences would be if it did occur. Likelihood – the probability of an event occurring, and consequence – the impact or outcome of an event, are the two components that characterize the magnitude of the risk. All risk management processes follow the same basic steps, although sometimes different jargon is used to describe these steps. Together these 5 risk management process steps combine to deliver a simple and effective risk management process. You and your team uncover, recognize and describe risks that might affect your project or its outcomes. There are a number of techniques you can use to find project risks. During this step you start to prepare your Project Risk Register. Once risks are identified you determine the likelihood and consequence of each risk. You develop an understanding of the nature of the risk and its potential to affect project goals and objectives. This information is also input to your Project Risk Register. Evaluate or Rank the Risk. You evaluate or rank the risk by determining the risk magnitude, which is the combination of likelihood and consequence. You make decisions about whether the risk is acceptable or whether it is serious enough to warrant treatment. These risk rankings are also added to your Project Risk Register. This is also referred to as Risk Response Planning. During this step you assess your highest ranked risks and set out a plan to treat or modify these risks to achieve acceptable risk levels. How can you minimize the probability of the negative risks as well as enhancing the opportunities? You create risk mitigation strategies, preventive plans and contingency plans in this step. Monitor and Review the risk. This is the step where you take your Project Risk Register and use it to monitor, track and review risks. Risk is about uncertainty. If you put a framework around that uncertainty, then you effectively de-risk your project. And that means you can move much more confidently to achieve your project goals. By identifying and managing a comprehensive list of project risks, unpleasant surprises and barriers can be reduced and golden opportunities discovered. The risk management process also helps to resolve problems when they occur, because those problems have been envisaged, and plans to treat them have already been developed and agreed. This makes for happier, less stressed project teams and stakeholders. The end result is that you minimize the impacts of project threats and capture the opportunities that occur. If you enjoyed this article our Risk Management Online Course expands on these concepts and gives you the practical skills to impress your boss by developing a comprehensive risk management process.

Part 5 Automation Tool is an aviation safety management system software built specifically for aviation service providers operating under the FAA's Part 5 regulations. Part 5 Automation Tool provides all tools and guidance needed to quickly and easily achieve compliance with Part 5 regulations.

Videos Highly mature enterprise: Meet the challenges of enterprise information systems Part 5 of 5: Standard metrics and actionable rules help organizations move from Level 3 to Level 4 in the enterprise information system maturity model, where automated decision making creates a highly evolved and mature enterprise. See also 3 keys to automated success. The enterprise information system maturity model presents a general context for understanding enterprise systems and a set of criteria to evaluate enterprise system needs. It also helps determine next steps to increase decision efficiency and the bottom line. The diagram shows the maturity model, Levels What is a highly a mature enterprise? A highly mature enterprise focuses on automating manual activities that are routinely performed in response to analytics results. The Level 4 maturity model goal is to eliminate repetitive decisions so that personnel can focus on more difficult and complex issues. As usual, the purpose for moving up the maturity model is to increase efficiency. Automated decisions can range from simple to complex. An organization must determine if the efficiency gains are sufficient for the automation costs. The goal is not to assist personnel in making a decision in which the actual decision making is a manual activity. Plant manufacturing line scheduling is a good example of this type of decision making. Typically, inventory and manufacturing line availability data that is stored in a database or accessed in real time are compared to upcoming order requirements. A software application determines the best schedule to accommodate the constraints. The scheduler makes the decision to order the line based on this information. Here, the software application is used as a tool to assist in making a manual decision. Level 4 focuses on decision making that is fully automatic. In this case, manual approval may be required to execute the decision, but the decision and the decision making process are fully automated. A good example of this is automated integration with a computerized maintenance management system CMMS. Analytics are used to determine if a CMMS request needs to be triggered for a plant floor machine based on operational characteristics and run time values, perhaps. An organization at Level 3 would deliver information to the appropriate personnel based on an actionable rule. In turn, a manual activity would take place to log the request into the CMMS. At Level 4, this activity occurs automatically with integration between the analytics system and the CMMS—possibly without any manual interaction. If manual interaction is required, the action is simply an approval activity. If approved, the request is automatically logged by system. Correspondingly, as discussed throughout these articles, a large amount of effort and dedication is needed to implement the model. Also, as noted previously, the number of systems is inversely proportional to their maturity level. So, what does this mean for the plant floor? Plant floor operations are typically late in adopting new technologies and concepts compared to other industries. As a result, the plant floor is one of the last business operations to reach Level 4 of the maturity model. However, it can be argued that the plant floor is one of the best environments for automated decision making. Many examples of Level 4 maturity are encountered daily. For example, credit card monitoring and analytics can automatically decide to deactivate a credit card to prohibit fraud. These same approaches can be applied to the plant floor to make automated decisions and receive the same efficiencies. Getting started with automation The best way to determine what to automate is to investigate Level 3 activities. Review the actions that are manually performed based on the actionable information provided by analytics. Identify and rank the most repetitive actions, especially ones that occur most often and in the same way. From that list, examine the risks associated with automating each action. At first, look for the most highly repetitive actions which should gain the most efficiency through automation that have the lowest risk for implementation. It is important to build credibility and confidence with initial implementations. Failures at the start that result in poor decision making can dissuade businesses from the continued use of automated decision making. This is one of the most impactful events that prohibit an organization from reaching Level 4 maturity. Start with a few small implementations and keep them localized within the organization to reduce the impact of possible failure. As

with all other maturity levels, success requires collaboration among many parties. Plant floor personnel need to understand the impact of the automation and how it affects their daily operations. Controls personnel which can sometimes be an external vendor or integrator need to understand the various systems to make modifications and provide ongoing support. IT personnel are required to support network connectivity and other underlying system support. And management personnel must approve the process and understand implications of changes. Failure needs to be included as part of the normal operation of an automated decision and its associated actions. For each decision, determine what failure means within the context of the decision. What is the necessary corrective action in the event an incorrect decision is made? What if the automated decision process is unable to execute the action based on the result? Sometimes a notification or failover mechanism is required. In other cases, production may be affected or modified as a result. Keeping statistics on the success and failure of automated decisions and their impact on efficiency helps in understanding the overall effectiveness. Continual and scheduled review of these statistics is necessary to sustain Level 4 maturity operation. This data should be shared with all members of the collaboration team and evaluated over time to identify any trends. Examine failures as they occur within the process and redevelop response plans accordingly. Context, understanding The maturity model presents a context for understanding enterprise systems. It provides a set of criteria to evaluate enterprise system needs and help determine next steps to increase decision efficiency and the bottom line. It also helps owners communicate more clearly with integrators, vendors, and other providers. An organization can be at different levels throughout its different business operations. The model provides a guide and presents a roadmap for organizations and their partners to increase their system maturity and, correspondingly, their overall success. Edited by Mark T. Hoske, content manager, Control Engineering, mhoske cfemedia. Key concepts A highly mature Level 4 enterprise meets the challenges of enterprise information systems. Standard metrics and actionable rules help organizations move from Level 3 to Level 4 in the enterprise information system maturity model. Automated decision creates a highly evolved and mature enterprise. See 3 keys to automated success. Consider this What systems can you more effectively automate using the tools provided in this five-part series? ONLINE extra This article online contains links to each part of this full five-part series on meeting the challenges of enterprise information systems looking at the maturity model introduction, taking the first step, gaining a competitive advantage, optimizing resources, and a highly mature enterprise.

Chapter 5 : What are the 5 Risk Management Process Steps?

Enterprise Project Management Analytics: A Data-Driven Approach to Making Rational and Effective Project Decisions by Harjit Singh Stay ahead with the world's most comprehensive technology and business learning platform.

System Security Encryption of data storage on device Require Note: Once you have done that, you end up in a new window. On the Properties menu, you can adjust the rules we just set, but at this point we are more interested in assigning this Policy. Make sure to Save your assignment. This is important as we go forward! Logon to your test machine and force an Intune policy sync to make sure that our compliance policy is applied to this client. As we can see, we are not compliant because we are lacking disk encryption. Setting up Conditional Access Conditional access, as the name implies, allows you to access a certain resource if you meet all of the required conditions. It basically prevents access to your company resources if you do not meet a set of required conditions and that is a bit of a paradigm shift in how IT works. We used to have this method of trying to protect the device as much as we can anti-virus, anti-theft, but with conditional access we shift that away from the device and to the data. We just lay out some ground rules, and if those are met, we trust the device is secure enough to access the corporate data. Select the users you want to assign it to it makes sense to at least target the same users you target with the compliance policy and select the cloud apps you want to protect. Grant access once the device is marked as Compliant. Finally, Enable the policy and Create it. That should be all there is to it. Every policy you create in the portal takes time to apply. In order to become compliant again, I have enabled bitlocker on my device. Once encryption is complete, we can validate from that same software center that we are now compliant! The same note from before applies. If you immediately check compliance after remediating, it could very well be that you are still being marked as non-compliant. Give it a bit more time to process all the changes. And as my final result I have now access to my Configmgr Reporting!! I tried to cover an end-to-end scenario where co-management could be useful for you. I hope you enjoyed reading the series as much as I had writing them. Let me know if you run into any issues or if you were able to replicate the setup in your own environment.

Chapter 6 : Part 5: Illustrative case studies – Office of the Auditor-General New Zealand

Amit Bhagwat - Data Modeling & Enterprise Project Management, Part 4: Estimation - Considering Derived & Intermediate Data - TDAN (Issue 30) [5] The square brackets used for certain attributes within the data-structures newly created in this article are for the purpose of drawing readers' attention.

It therefore stands to reason that individuals managing enterprise projects should leverage on data modeling to execute their projects successfully and deliver not only capable and cost effective but also maintainable and extendable systems. Virtually all of these activities are influenced by evolution of the data model and may benefit by taking it as the primary reference. This series of articles by Amit Bhagwat will go through the links between data modeling and various aspects of project management. A Recap In the first article[1] of this series, we established data-operation to be the principal function of most enterprise systems and inferred that data structure associated with a system should prove an effective starting point for estimating its development. In the last article[4], we continued with the illustrative example and considered the effect of intermediate and derived data on estimation. Quantities that are important to business logic must be counted in estimation process, whether or not these quantities form a part of the final persistent data structure and whether or not they are fundamental. For estimation purposes, entities, attributes and relationships are considered in their logical sense. Agenda Having considered significance of data elements that may not appear in the final data structure, it is now turn of considering arrangement of data elements across entities as it may or may not exist in the final data structure. It will also become evident that denormalization should be a carefully applied final process, applied to a data structure well-normalized first. These are provided in fig. A view of important data elements Fig. Data structure with Fine denormalized into Past Borrowing[5] With this denormalization exercise, Current Borrowing and Past Borrowing do not have identical attribute structure. Past Borrowing has additional optional attributes thanks to presence of zero or one Fine associated with each Past Borrowing and an optional relationship with Total Fine. The data owned by our subsystem may therefore be represented as in fig. Data owned by the lending facility subsystem as perceived after denormalized Past Borrowing Now, applying data-based approach to these entities owned by our subsystem, we have: Denormalization, in general, tends to give a lower estimate of efforts in Data-based approach. This not only raises the level of inaccuracy in the estimate, but also makes the data-structure extremely tiresome to deal with, definitely at design time and often at runtime too. You have no doubt appreciated now that denormalization can give disastrously low estimates; more so, in data-based approach. Given that Relationships, and to a lesser extent Entities, contribute the greatest to UFP, and that denormalization lowers the extrinsic entity and relationship count, analysts can end up pinching a substantial quantity of UFP simply by clubbing entities together and thus making the relations between them intrinsic. So UFP becomes 1. Remember, FPA is essentially function-based. We have studied how function-based approach works. We also know that the data-based approach is its simplified approximation. Therefore, a denormalized physical data-model, whereas useful for certain performance considerations, is a false start for FPA-based estimation. The situation is particularly bad when the data-access and data-manipulation pattern deviates widely from the underlying assumptions of FPA as they allowed us to establish various formulae in the second and third part of this series. As a thumb-rule therefore, during your analysis if you can perceive a thing by itself, let it remain thus, rather than huddling it with or into another thing, and let it be associated with other things by relations which are explicit. And that, by the way, serves to remind us of what denormalization really is. Denormalization is neither the default way of representing data nor an excuse for not doing normalization. Indeed, a well-normalized logical data structure must exist and should be maintained for every physical data structure defined to implement it. All changes to the data structure, resulting from changed functional requirements of the system, must first be applied to the underlying normalized data structure. A further exercise of normalization, as may be warranted by a significant functional change, must then be undertaken, before reflecting the changes onto its operationally denormalized form. In our example, you may be wondering about one thing. In third part of this series and indeed as depicted in fig. In this article, as we denormalized Fine into Past Borrowing, we declared that

Present and Past Borrowing are no longer equivalent. We therefore once again had three entities. The reduction we obtained in the estimate was by considering that Present and Past Borrowing are unrelated. However, I do acknowledge that the relationship between the two Borrowing entities does make a difference, particularly in the OO paradigm. I would like you to ponder over this for the next three months. Normalization There will be some among you, who will have query on the other side of the normalization-denormalization line. Suppose we have a many-to-many relationship between two entities, which in the normalized form becomes a third entity subordinate to the first two or an association class, if you speak OO languages ; how then should we count the number of entities and relationships? The simple answer, which I have found practically effective, is: This is because, while implementing business logic, this third entity simply stores the one-to-many relationships coming into it from either side, to manifest the many-to-many relationship, thus acting as a grid point and not itself an originator of transactions. However, oftener than not, this linkage entity also contains some useful information of its own and has business logic associated with it. Some of the important points noted here include: Denormalized data structure can give an inaccurate and significantly reduced UFP count. FPA is based on considering each separately definable concept and relationships between such concepts explicitly. As FPA is based on transactions likely to be performed on separately definable concepts, data-elements defined purely to serve as holders-of-relationships do not count as separate entities. As classical FPA was established in procedural programming paradigm, it requires refinement when applied in the OO paradigm. The emergence of Object-Oriented and Object-Relational data structures and their corresponding implementation platforms, with focus on encapsulation and inheritance, naturally require us to evolve our analysis approach from how we applied it in classical FPA.

Chapter 7 : FAR -- Part 5 Publicizing Contract Actions

Five steps to Enterprise Risk Management by as part of the Owner and Leader roles as illustrated in Figure 3. This for decision-making Step 5 - Changing.

If one particular alternative is clearly better than the rest, your choice will be obvious. However, if you still have several competing options, there are plenty of tools that will help you decide between them. If you have various criteria to consider, use Decision Matrix Analysis to compare them reliably and rigorously. Or, if you want to determine their relative importance, conduct a Paired Comparison Analysis Decision Trees are also useful when choosing between different financial options. These help you to lay options out clearly, and bring the likelihood of your project succeeding or failing into the decision-making process. When anonymity is important, decision-makers dislike one another, or there is a tendency for certain individuals to dominate the process, use the Delphi Technique to reach a fair and impartial decision. This uses cycles of anonymous, written discussion and argument, managed by a facilitator. Finding This Article Useful? But now, more than ever, is the time to "sense check" your decision. Your final decision is only as good as the facts and research you used to make it. This will help you avoid confirmation bias, a common psychological bias in decision making. Discuss your preliminary conclusions with important stakeholders to enable them to spot flaws, make recommendations, and support your conclusions. Listen to your own intuition, too, and quietly and methodically test assumptions and decisions against your own experience. Use Blindspot Analysis to review whether common decision-making problems like over-confidence, escalating commitment, or groupthink may have undermined the process. And consider checking the logical structure of your process with the Ladder of Inference , to make sure that a well-founded and consistent decision emerges at the end. Get them involved in implementing the solution by discussing how and why you arrived at your decision. The more information you provide about risks and projected benefits, the more likely people will be to support your decision. There are many tools and techniques that you can use as part of making a good decision. If you use them all, however, you could wind up spending a very long time making a very small decision. Pick and choose tools appropriately, depending on the nature and scale of the decision you want to take. Key Points Although problem solving and decision making are different processes, it is often necessary to combine them when making a complex decision. Systematically incorporating problem-solving and decision-making tools can help you make fully-informed decisions, either individually or as part of a group. The seven-step strategy is: Create a constructive environment. Investigate the situation in detail.

Chapter 8 : IBM Operational Decision Management - Wikipedia

FAR -- Part 5 Publicizing Contract Actions (FAC) (13 January) (FAC) (22 Aug) -- Scope of Part. This part prescribes policies and procedures for publicizing contract opportunities and award information.

Funding for a club 5. In her role, she carries out an initial assessment of applications and writes reports for the committee that will consider and decide on each funding round. She also monitors the use of the funding. The association has applied for funding to clean up a local stream and carry out a native shrub replanting programme in her community. If the manager takes this view, it may also be preferable that the other person should not be someone for whom Sam has line management responsibility. Another possibility is that the above steps are impracticable, because Sam is the only person in the organisation who can do the work. In that case, some other option such as carrying out an additional peer review of her work on the matter might have to be used. The association is small, and so Sam is likely to know its leaders well and work closely with them. However, the situation might be different if the association was a large nationwide organisation like Rotary, and the application was from a different branch of that organisation. Family connection to a tenderer for a contract 5. The DHB contracts out some functions to private providers. As part of his role, Hoani is running a tender process for contracts for a provider to deliver certain health services. It is not a financial conflict of interest, because Hoani is not involved in the tendering company and is not dependent on his brother-in-law. But the family connection to the company is a reasonably close one, and the decision to be made by the DHB directly relates to the company. Hoani is likely to have feelings of loyalty to his brother-in-law or at least this would be a likely perception. It may also be prudent to take steps to ensure that Hoani does not have access to information about the other tenders, or other confidential information about this particular tender process. The answer might also be different if the relative was a distant relative whom Hoani had met only a few times in his life. Assessing the closeness of a personal connection to someone or the appearance of such closeness requires careful judgement. Employment of a relative 5. She takes a leading role in handling the recruitment of key staff. The school needs to employ staff on merit, and must avoid perceptions of undue influence or preferential treatment in appointment decisions. The board should ensure that this appointment process is handled entirely by others, and that Stephanie has no involvement in the process. Issues are also likely to arise in the ongoing working relationship, where there are matters that directly affect or involve both Stephanie and her husband. That is not usually improper in itself. Indeed, it would often be wrong for someone to be disadvantaged simply because of who they are related to, especially in a large organisation where the two people do not work closely together each day. This is because it can create a risk of a lack of independence, rigour, and professionalism in ongoing decision-making. In a public entity, it would usually be unwise for relatives to hold two of the most senior positions, or to hold positions that are in a direct reporting relationship. Here, the board might decide not to appoint the husband because it would be too burdensome and complex to try and manage the likely ongoing conflicts of interest. Public statements suggesting predetermination 5. One of her published campaign pledges was "Ruth will sink the rink". Later, she declared in the local newspaper that the proposal would succeed "over my dead body". The developer has now applied to the council for resource consent to build the rink, and the application is about to be considered by the planning hearings committee. Even if she is not biased, there will certainly be a very strong public perception that she is. If she participates in decision-making on the resource consent application by the council or its committee, the developer could argue that it has not had a fair and impartial hearing, because one of the decision-makers had a predetermined view. If she refused to do so, and the council was very concerned about the legal risk to its decision that her involvement would cause, the council might be able to resolve to remove her from the committee. When acting in that capacity, they should take extra care not to express views in a way that suggests their mind is firmly made up about such a matter before having heard all views, or that their position is so fixed that they are unwilling to fairly consider the views of others, or that they are not prepared to be persuaded by further evidence or argument. The council needs to follow a fair process and make its decision on lawful grounds that comply with the Resource Management Act , because it is making a decision that could

be appealed to the Environment Court or be subject to judicial review by the High Court. Decision affecting land 5. The SOE is planning to build a major new mains pipeline to increase supply capacity from a refinery to a large city. The SOE has to acquire land “compulsorily if necessary” along its chosen route. The project is opposed by many people who live along the possible routes, who fear the pipeline will adversely affect the natural environment and devalue their remaining land. Tom has worked on a number of areas of the project, and has now been appointed to the Route Options Working Group that will assess the route options and make a recommendation to the board. He has a personal stake in the decision about which route to choose, because his land could be affected. Although the working group is not the final decision-maker in this matter, it does have a key role in analysing the route options and making a recommendation. He may believe that he could contribute conscientiously to the working group to help it arrive at the best technical answer. There may be other aspects of the project that Tom remains well-suited to work on, which have no connection to the question of which route to choose. It may also be prudent to ensure that Tom does not have access to confidential information about the decision before it is made public, in case he is considering selling his land. Some other options might therefore need to be considered such as only partly limiting his role, or imposing extra supervision.

Gifts and hospitality 5. The arrangement with this preferred supplier has been in place for several years, and so the department has decided to re-tender the contract. Rawiri has told the existing provider that he will soon be inviting expressions of interest for a new contract from the existing provider and its main competitors. At a recent meeting, the provider offered to fly him to another city to inspect a new fleet of cars that will shortly be available, and said that the provider would also be able to arrange for Rawiri to have complimentary corporate box tickets to a rugby test match that happened to be on that night, and to stay on for the weekend in a downtown hotel. Rawiri might not be seen as impartial if he is involved in choosing the new preferred supplier. A competitor of the existing provider could allege that Rawiri is being given an inducement or reward in the implicit expectation that he will look more favourably on the existing provider in the coming tender round or that he will receive further gifts if the existing provider is successful. With the offer to be flown to another city to inspect the new fleet of cars, careful consideration should be given to whether business reasons can justify the visit. If it goes ahead, the public entity might decide to offer to pay the cost of it. If other forms of gift or hospitality have already been accepted, the appropriateness of Rawiri having a role in the coming tender process might need to be reconsidered, too. It is reasonable to consider the value or nature of the gift and extent of personal benefit for example, it may be acceptable to accept a gift that is inexpensive and widely distributed. The context and reason or occasion for the gift is relevant, too. For an entity that operates in a more commercial environment, some types of gift or hospitality may be seen as a necessary element in maintaining relationships with stakeholders and clients. Making a public submission in a private capacity 5. The council is proposing to adopt a new bylaw regulating the location of brothels. As it is required to carry out a formal public consultation process on its draft bylaw, the council has invited written submissions and will hold a public hearing where submitters can make an oral presentation to a council committee. The adoption of the bylaw will be decided by a vote of the full council. Otherwise, his behaviour could indicate predetermination. Ken would create the perception that he is attempting to act as both an interested party and a decision-maker on the same matter or, in other words, acting as a judge in his own cause.

Mixing public and private roles 5. The CRI has developed a new product that has significant revenue-earning potential, and Antonia has worked on the product as part of her role in the CRI. However, the CRI needs help in manufacturing and marketing the product on a large scale, so plans to enter into a joint venture with a private company. The CRI is considering appointing Antonia as one of its representatives on the governing body of the joint venture. She stands to benefit from the financial success of the private company. The fact that there may be no direct disadvantage to the CRI because the joint venture partners are working together, hopefully for their mutual benefit does not remove the conflict of interest. Her interests in both the CRI and the private company could create confusion about her role and primary loyalty. She could be accused of using her official position in a way that advances her own private interests. It will probably be necessary for Antonia not to be given any major role in governing or managing the joint venture, while she has an interest in the private company. This decision may not be clear-cut. Her manager might judge that some

involvement in the project is acceptable or even necessary , but it may also be desirable to confine this. Alternatively, Antonia might be asked to give up one of her roles – that of employee or that of shareholder. Personal dealings with a tenderer for a contract 5. Her services have been engaged by a government department to help it carry out a new building project. She used that firm to build her own house last year, and she is currently using it to carry out structural alterations on several investment properties that she owns. Because of this, she knows the directors of the company very well, and has a high regard for their work. She is expected to impartially and professionally assess each of the tenders, yet she could be regarded as being too close to one of the tenderers. This may or may not require ending the consultancy arrangement altogether, depending on what else Sandra has been engaged to do. Her dealings with the firm are recent and significant. Particularly in small or specialised industries, people often have had some degree of personal knowledge of, or previous dealings with, other people or organisations that they have to make decisions about. That is not necessarily wrong. Indeed, they will often be chosen for this role precisely because of their experience or expert knowledge, and that might include general impressions about the reputation or competence of others. So, sometimes, these sorts of connections might be judged to be too remote or insignificant. For example, it might be improper for Sandra to be involved in assessing the tenders if the firm was run by a very good friend she had known for many years and who had attended her wedding. By contrast, there might not be any problem if Sandra simply knew the person in a casual way through membership of the same sports club. Further careful judgements might be necessary if Sandra had worked for the firm. For instance, the situation might be problematic if she had been a full-time employee within the last year, or was also currently providing significant consultancy advice to the firm on another matter. On the other hand, it might not be problematic if she had worked for the firm several years ago, or if she had provided only occasional pieces of consultancy advice in the past. She should be required to agree to abide by the relevant conflict of interest policy that exists for staff. The departmental manager who oversees her work should ensure that she understands the policy, and should monitor her in the same way as an employee. Duties to two different entities 5. The TEI has some contracting arrangements with private organisations to help to deliver some educational courses. One of those arrangements is with a charitable trust, under which the trust is funded by the TEI to prepare, administer, and teach the course on behalf of the TEI.

This is the fifth and final part of a five part post that explores various types of organizational structures that either already exist in today's business landscape or are starting to emerge as.

Workload Characteristics and Candidates for Containerization we investigated the level of effort necessary to containerize different types of workloads. In this article I am going to address several challenges facing organizations that are deploying containers – how to patch containers and how to determine which teams are responsible for the container images. Should they be controlled by development or operations? Since they are typically layered images, we can think of them as a software supply chain. This software supply chain can address mapping your current business processes and teams to the container build process to meet the needs of a production container deployment in a flexible and manageable way. Red Hat has always been concerned with creating an enterprise class user space. Operations, middleware and development teams each have responsibility for different pieces of what gets deployed into production. The resulting image is often called a core build, gold build, or standard operating environment. Once the operations team is finished with a new server, they often hand it off to an application delivery team. This could be a specialist team that focuses on databases, Java application servers, message buses, integration software, or even Web servers. The specialist team will further configure the server to their standards. Finally, if the server is meant to be a development platform, access will be given to the development team. At this point, the development team will begin to work on their code. This deployment process has historically been replicated for development, testing, and production environments – amounting to a lot of work. Below is a list of common package formats and artifacts that are used by each team: Slow because each team can only start their work after the last team has finished their part. Difficult to change because each team uses their own set of tools. Difficult to understand what has been changed because each team has their own methodologies; some may use automation while others may change things manually. Tracking changes is difficult because there is no temporal when or spatial what record between teams; often it is a hand off in a ticketing system. Many have tried to solve these problems by standardizing on one tool, but this has always been painful. Each format has its own strengths and weaknesses. For example, RPMs are good for tracking provenance, but require gymnastics when installing multiple versions of the same software. Can anyone? Operations wants some form of governance because they get called in the middle of the night, while developers just want to push their files and go. Adopting a standardized build methodology and artifact format allows each team to retain control over the bits they care about while maintaining a clean hand off to teams that will consume their work: The Docker format provides each team a way to easily share the output of their work. Building from Dockerfiles encourages transparency and collaboration between teams. Build artifacts allow the deployment logic to be completely separated from the the build logic. Teams can operate at different speeds temporal and on different software spatial. Operations can update the underlying standard operating environment – developers can change their applications as much as they like – both teams have confidence that the final build artifact will run correctly in production. This allows clean separation of temporal and spatial concerns – teams can operate at different speeds, only changing their pieces of the container repository. Incompatibilities can now be found during the build instead of the deploy. Tests can be used to provide confidence. Tests can be augmented when problems are discovered and resolved. Analyzing Existing Supply Chains One of the first questions asked is, who else is doing this? The answer is, anyone that has containers in production. There are several examples of public containerized multi-tier software supply chains. In this section, we are going to analyze several of them: Before we can analyze the container supply chain which is embedded in the the docker repositories , we are going to need a tool. Regretfully, this tooling used to be built into Docker, but was removed. Luckily, Nate Jones built an awesome little tool called DockViz. We are going to use DockViz to analyze several different supply chains. Docker Hub We are going to analyze the wordpress image on Docker Hub because it is a very popular place to pull images from. The wordpress image is tagged so that users can select different versions of wordpress, for example, built on Apache, or FPM. Docker Hub also provides links to the Dockerfiles which

were used to build the images – see Apache or FPM as examples. This is great to get a better understanding of how a software supply chain should be setup. One downside is there are a lot of different tags in the repository and it can be difficult to understand which version you need. These images are great for getting started, but what happens if you want a wordpress image built on a specially hardened version of Apache, or a NGINX? What if you have a standard operating environment built on Red Hat Enterprise Linux? You could go to the community and see if there is something that meets your needs, but this is a Turing Complete problem. Notice the layers in the image above. Each of the layers that are tagged debian: There are so many layers because each line of a Dockerfile creates a new layer. These are intermodal images which are built to run applications and build new images which will run applications. If you were to build wordpress on this image, you would have a standard three tier supply chain. First, notice that this supply chain is built with Red Hat Enterprise Linux as the base image. This is a good starting point and this repository has much stronger provenance than pulling an arbitrary image from Docker Hub. Next you might notice, there are not many layers. This is because Red Hat build tool squashes layers after it is done building the images. This leaves a very clean repository with a minimal amount of layers. This is a good image to start building off of if you need quick access to Ruby, Python, Node. The downside of the Red Hat Software Collections images is that engineering decisions have already been made for you. Very concise software supply chain. This is how Red Hat builds all of our official images. This makes it much easier to see the relation between layers.

Custom Software Supply Chain Next we are going to analyze a custom built software supply chain with strong provenance and the ability to make any customization necessary. Notice that the below supply chain has a clean chain of custody. Red Hat provides the base rhel7 image Your operations team customizes the corebuild layer Your middleware teams customize their own layers Your developers customize their own layers This custom supply chain enforces clean separation of concerns and the ability to adopt containers without having to heavily modify your processes or organizational structure. Each of your current teams still retain control over the bits they care about. Finally, this supply chain allows for very sophisticated and granular delegation of control – ops can patch anywhere in the stack and only modify the images that are necessary e. There are a lot of engineering advantages to this supply chain, which will be explained in the following sections. Notice, this is a very clean software supply chain. Each of the tags designate a component that can be reused in multiple applications. Each is created with a separate Dockerfile.

Building Your Own So, how do you build a container supply chain that is right for you and your teams? Well, not quite – Docker repositories are built in layers, and there are limitations in the tooling. If the operations team rebuilds the corebuild in our example above, all of the dependent layers have to be rebuilt. Certain problems now become blurred: Who controls each layer? Who controls what goes into production? Who is responsible for updates? Who is responsible for fixing regressions in performance, functionality, etc.? Well, the good news is, I think I have some answers for you –

State of the World: Who Owns What Here is a suggestion on how control of the supply chain can be broken down by team. The biggest change is each team will have to adopt Dockerfiles for their builds. This will allow clear communication between teams. Also, designing a supply chain so that each team uses a dockerfile as the currency for collaboration allows for cascading builds as mentioned above.