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Chapter 1 : Methods and tools - WikiEducator

Last Software Development Articles Published by Methods & Tools Performance Testing and Agile With the advent of DevOps, there is an increasing trend of projects trying to adopt Agile model for their delivery.

Estimate project costs and schedules. Establish a dependable project control and monitoring system. Tools Project management is a challenging task with many complex responsibilities. Fortunately, there are many tools available to assist with accomplishing the tasks and executing the responsibilities. Some require a computer with supporting software, while others can be used manually. Project managers should choose a project management tool that best suits their management style. No one tool addresses all project management needs. Both of these project management tools can be produced manually or with commercially available project management software. Both charts display the total project with all scheduled tasks shown in sequence. The displayed tasks show which ones are in parallel, those tasks that can be performed at the same time. The activities are the tasks of the project. The milestones are the events that mark the beginning and the end of one or more activities. Determine the proper sequence of activities. This step may be combined with 1 above since the activity sequence is evident for some tasks. Other tasks may require some analysis to determine the exact order in which they should be performed. Construct a network diagram. Using the activity sequence information, a network diagram can be drawn showing the sequence of the successive and parallel activities. Arrowed lines represent the activities and circles or "bubbles" represent milestones. Estimate the time required for each activity. Weeks are a commonly used unit of time for activity completion, but any consistent unit of time can be used. For each activity, the model usually includes three time estimates: Optimistic time - the shortest time in which the activity can be completed. Most likely time - the completion time having the highest probability. Pessimistic time - the longest time that an activity may take. From this, the expected time for each activity can be calculated using the following weighted average: Determine the critical path. The critical path is determined by adding the times for the activities in each sequence and determining the longest path in the project. The critical path determines the total calendar time required for the project. The amount of time that a non-critical path activity can be delayed without delaying the project is referred to as slack time. If the critical path is not immediately obvious, it may be helpful to determine the following four times for each activity: The earliest start and finish times of each activity are determined by working forward through the network and determining the earliest time at which an activity can start and finish considering its predecessor activities. The latest start and finish times are the latest times that an activity can start and finish without delaying the project. LS and LF are found by working backward through the network. The critical path then is the path through the network in which none of the activities have slack. The variance in the project completion time can be calculated by summing the variances in the completion times of the activities in the critical path. Given this variance, one can calculate the probability that the project will be completed by a certain date assuming a normal probability distribution for the critical path. The normal distribution assumption holds if the number of activities in the path is large enough for the central limit theorem to be applied. Update the PERT chart as the project progresses. As the project unfolds, the estimated times can be replaced with actual times. In cases where there are delays, additional resources may be needed to stay on schedule and the PERT chart may be modified to reflect the new situation. An example of a PERT chart is provided below: Improved forecasting of resource requirements. Identification of repetitive planning patterns which can be followed in other projects, thus simplifying the planning process. Ability to see and thus reschedule activities to reflect interproject dependencies and resource limitations following know priority rules. It also provides the following: Gantt charts are used to show calendar time task assignments in days, weeks or months. The tool uses graphic representations to show start, elapsed, and completion times of each task within a project. Gantt charts are ideal for tracking progress. The number of days actually required to complete a task that reaches a milestone can be compared with the planned or estimated number. The actual workdays, from actual start to actual finish, are plotted below the scheduled days. This information helps target potential timeline slippage or failure points. These charts serve as a valuable budgeting tool and can

show dollars allocated versus dollars spent. For each task, show the earliest start date, estimated length of time it will take, and whether it is parallel or sequential. If tasks are sequential, show which stages they depend on. Head up graph paper with the days or weeks through completion. Plot tasks onto graph paper. Show each task starting on the earliest possible date. Draw it as a bar, with the length of the bar being the length of the task. Above the task bars, mark the time taken to complete them. Schedule them in such a way that sequential actions are carried out in the required sequence. Ensure that dependent activities do not start until the activities they depend on have been completed. Where possible, schedule parallel tasks so that they do not interfere with sequential actions on the critical path. While scheduling, ensure that you make best use of the resources you have available, and do not over-commit resources. Also, allow some slack time in the schedule for holdups, overruns, failures, etc. In the final version of your Gantt chart, combine your draft analysis 3 above with your scheduling and analysis of resources 4 above. This chart will show when you anticipate that jobs should start and finish. An example of a Gantt chart is provided below: Benefits of using a Gantt chart include: Makes it easy to develop "what if" scenarios. Enables better project control by promoting clearer communication. Becomes a tool for negotiations. Shows the actual progress against the planned schedule. Can report results at appropriate levels. Allows comparison of multiple projects to determine risk or resource allocation. Rewards the project manager with more visibility and control over the project. The Future Project management tools have evolved from simple spreadsheet products to sophisticated, Web-based project information portals. The obvious trend in project management software, as with almost everything in information technology, is a move toward Web-based systems. Most project management tools can be accessed via browsers and those that do not currently have this capability are moving in that direction. The product acts as a portal development tool that allows firms to view information from products such as Microsoft Project over the Web. These project management portals are becoming more common as the collaboration capabilities of project management tools improve. WorkLenz is a software application that serves as a virtual project manager with intelligent agent features. The general direction is toward more integrated process and knowledge management systems, and user interfaces with a "Web" look. It is important for project management software vendors to keep things simple and easy to use.

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Chapter 2 : Monitoring and Evaluation: Some Tools, Methods and Approaches - GSDRC

Tools and methods How to undertake an HIA. This section will draw on a number of case studies to briefly describe the theory and practice of carrying out an HIA.

Enter your email to reset your password Or sign up using: She covers technology for Inc. Technology , coordinates Inc. Live chats and finds document templates for business owners. She lives in Manhattan. It is a relevant in manufacturing as it is in health care or food services. Of course, quality means different things for different industries, and takes a different meaning depending on whether a product, a service, or a combination of both is offered. The core of quality management is being able to guide your business towards improved performance. There are three main components to quality management: This guide highlights 10 tools that can help you to setup a management strategy to improve quality and documents you can use to track improvement. Six Sigma Management Guide Six Sigma is a business management strategy for improving the operational performance of a business by eliminating variability and waste. Popularized by jack Welch at General Electric, the philosophy takes a data-driven, methodological approach to eliminating defects with the aim of reaching six standard deviations from the desired target of quality. If you are considering restructuring your management style as a means of improving quality, you should consider the Six Sigma management style. This guide includes the fundamental objectives and how to calculate the cost and savings of Six Sigma quality. Six Sigma Template Six Sigma is a highly structured approach to process improvement through strategy and discipline. If you are convinced that the Six Sigma management style will work for your business, this template is customizable for your specific needs. It is designed to reduce defects, lower costs and improve customer satisfaction. But if you would like to see an example of its practical use in business this specific example is for the manufacturing industry. It can be adapted to your business. Total Quality Management Guide Total Quality Management is a set of practices put in place throughout a company that are geared to ensure the organization consistently meets or exceeds customer requirements. TQM places strong focus on process measurement and controls as means of continuous improvement. This Total Quality Management Guide discusses the primary elements of quality management, and includes chart, graphs, and tools to assist a company with setting up a program of quality management. Quality Management Presentation When you have determined what approach you will take for quality management you will have to educate and train your staff about new processes to improve performance. This Quality Management Presentation can be used to educate and implement the essentials of quality, as well as the discipline of quality management, into their daily work routines. The presentation provides an outline for quality in general, quality and business needs, principles for a quality system, and principles for quality management. Quality Manager Job Description If improving quality is a larger responsibility than you thought, it may be time to hire a Quality Manager. The job of a Quality Manager can encompass many different roles from managing day-to-day production activities to training engineers and operators to being the liaison to customers and suppliers. Use the Quality Manager Job Description to outline the position by listing key job tasks and specifications for the position customized to what your business requires. Small changes such as improved documentation can significantly affect quality. One example is keeping track of the condition of your equipment to ensure top performance and output. This Equipment Maintenance Log provides a comprehensive spreadsheet for tracking equipment maintenance records by equipment type, model number, serial number, and location. The Smart Vendor Audit Checklist When your business depends on vendors to produce your products or as an intricate part of a process you want to make sure you hire the best. If you are not sure how to evaluate a potential supplier, the supplier audit form is designed to help your company recruit the best vendors. Packing List Order Form Again, documentation and checklists are staples of quality management. For example, each item on this packing list is important in terms of quality customer service and reduced costs. Shipping the wrong quantity or type of a product affects your inventory, while returns or inaccurate weight information can cost you more in shipping. A proper packing list is probably one of the easiest ways to improve quality and reduce waste. Read More Published on:

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Chapter 3 : Best of Benchmarking Research: Tools and Methods

Tools and Methods from Haufe Increase your project's chances of success We know that projects can only be successful if you take on the underlying issues, and if everyone involved shares a vision, focuses on the same goals, and stays committed to success.

It allows those involved in development activities to learn from experience, to achieve better results and to be more accountable. This should translate into a more effective and transparent way of working. For each, it lists their purpose and use; advantages and disadvantages; the required costs, skills and time; and key references. It is emphasised that the list is not comprehensive. Some of the tools and approaches are complementary or substitutes; some are broad in scope, others narrower. These measure inputs, processes, outputs, outcomes and impacts of development interventions. They are used for setting targets and measuring progress towards them. The logical framework LogFrame approach. This identifies objectives and expected causal links and risks along the results chain. It is a vehicle for engaging partners and can help improve programme design. Similar to the LogFrame approach, this provides a deeper understanding of the workings of a complex intervention. It helps planning and management by identifying critical success factors. These are used to collect standardised information from a sample of people or households. They are useful for understanding actual conditions and changes over time. These are quick, cheap ways of providing decision-makers with views and feedback from beneficiaries and stakeholders. They include interviewing, focus groups and field observation. These allow stakeholders to be actively involved in decision-making. Public expenditure tracking surveys. These trace the flow of public funds and assess whether resources reach the intended recipients. They can help diagnose service-delivery problems and improve accountability. Cost-benefit and cost-effectiveness analysis. These tools assess whether the cost of an activity is justified by its impact. Cost-benefit measures inputs and outputs in monetary terms, whereas cost-effectiveness looks at outputs in non-monetary terms. This is the systematic identification of the effects of an intervention on households, institutions and the environment, using some of the above methods. It can be used to gauge the effectiveness of activities in reaching the poor.

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Chapter 4 : Basic statistical tools in research and data analysis

As nouns the difference between tool and method is that tool is (senseid)a mechanical device intended to make a task easier while method is.

Solving Engineering Problems in Dynamics An organization needs to define some standard of problem solving, so that leadership can effectively direct others in the research and resolution of issues. In problem solving, there are four basic steps. Define the problem Diagnose the situation so that your focus is on the problem, not just its symptoms. Helpful techniques at this stage include using flowcharts to identify the expected steps of a process and cause-and-effect diagrams to define and analyze root causes. The chart below identifies key steps for defining problems. These steps support the involvement of interested parties, the use of factual information, comparison of expectations to reality and a focus on root causes of a problem. Review and document how processes currently work who does what, with what information, using what tools, communicating with what organizations and individuals, in what time frame, using what format, etc. Generate alternative solutions Postpone the selection of one solution until several alternatives have been proposed. Having a standard with which to compare the characteristics of the final solution is not the same as defining the desired result. A standard allows us to evaluate the different intended results offered by alternatives. Considering multiple alternatives can significantly enhance the value of your final solution. Brainstorming and team problem-solving techniques are both useful tools in this stage of problem solving. Many alternative solutions should be generated before evaluating any of them. If we focus on trying to get the results we want, we miss the potential for learning something new that will allow for real improvement. Evaluate and select an alternative Skilled problem solvers use a series of considerations when selecting the best alternative. They consider the extent to which: A particular alternative will solve the problem without causing other unanticipated problems. All the individuals involved will accept the alternative. Implementation of the alternative is likely. The alternative fits within the organizational constraints. The most effective approach, by far, has been to involve others in the implementation as a way of minimizing resistance to subsequent changes. Feedback channels must be built into the implementation of the solution, to produce continuous monitoring and testing of actual events against expectations. Problem solving, and the techniques used to derive elucidation, can only be effective in an organization if the solution remains in place and is updated to respond to future changes. Dennis Beecroft, Grace L. Duffy, and John W.

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Chapter 5 : Social Analysis - Tools and Methods

The objective of analytical methods and tools is obtaining necessary and useful information from collected data and consequently utilizing them for active control and decision making.

Practical Assessment In this module, we are investigating different methods of assessing - written, exams and tests, self and peer-assessment student role and practical, and a range of tools e. Previously, we explored some principles of aligning and designing assessment considering several factors. Language including instruction words. Effectiveness of different types of assessments. Requirements identified in the learning outcomes and their alignment with the assessments. Consideration of cultural diversity. Now it is time to think more in-depth about the methods and tools of assessment, and whether they are appropriate for what needs to be assessed. To do this, the methods and tools of assessment need to be examined more closely for effectiveness. In the last module you were given the opportunity to think about the effectiveness of different types of assessment. Now we are going to link this more closely to the principles or values of assessment. For example, if you are using multiple choice questions for summative assessment, it is advisable to give students plenty of practice in answering this type of question beforehand, and also in doing tests online. Therefore, formative assessment is necessary to help students develop their skills and knowledge and to become familiar with taking online tests. It is also good practice to give the students feedback on their responses. In online tests this can be built into the questions to guide the students, and allows the teacher the opportunity to suggest how they can extend their learning. Otherwise, the value of fair assessment is not adhered to, nor is this type of assessment going to enhance learning. Fundamentals of Effective Assessment Regardless of whether assessment is formal or informal, or formative or summative, a number of principles apply if effective assessments are to be designed. The fundamentals of effective assessment: Assessment should help students to learn. Interestingly, you may find that formative assessment is often used with a dual purpose; to enable feedback and to encourage participation by students. Since students may value marked work more highly than unmarked work. Assessment must be consistent with the objectives of the course and what is taught and learned. This means that the assessment tools or methods that are chosen must align with the learning outcomes, and as mentioned previously, the language used to write the outcomes must match the instruction words in the assessments. The assessments are chosen to induce the required level of thinking. For example, open-ended questions could be used to encourage students to demonstrate they can analyse analysis level and create new knowledge synthesis level whereas multiple choice questions might be used for demonstrating recall knowledge level. Reflection Consider how effectively formative and summative assessments are used in your teaching context? How well do the instructions and marking criteria in your existing assessments align with the descriptors or terms used in the learning outcomes? Defining Assessment Methods and Tools Sitting exams An assessment method is defined as the philosophical or pedagogical approach to assessing. For example, written assessment or practical assessment, formative or summative assessment. Assessment tools are used for different assessment methods and are more specific. For example, posters, essays, exams, interviews etc, and can be used across a number of assessment methods. Also the tools used to mark assessments, e. Selecting methods of assessment for a list of potential tools for each category. The authors of this resource refer to assessment methods such as portfolios, posters, reports group work under each of the eight categories. However, for the purposes of this course, these methods are regarded as tools for assessment. Thinking critically and making judgements - e. Solving problems and developing plans - e. Performing procedures and demonstrating techniques - e. Managing and developing oneself - e. Accessing and managing information - e. Demonstrating knowledge and understanding - e. Designing, creating, performing - e. Selecting methods of assessment. Access information on the different methods: Written , Tests and exams , Student role refers to self and peer assessment , and Practical. You can also access this information using the menu at the top of the page. Check out the e-Assessment Resources. What are the advantages and disadvantages of this method and the associated tools? How could this method and tools be used within a course that you teach?

Chapter 6 : Project Management: Tools & Techniques

The seven basic tools stand in contrast to more advanced statistical methods such as survey sampling, acceptance sampling, statistical hypothesis testing, design of experiments, multivariate analysis, and various methods developed in the field of operations research.

For example, some authors refer to TPM as a method while others call it tools. Where do you stand on this? In your terms, we could probably say that the MIFA is a method a procedure or processes for attaining an object according to Merriam Webster while the MIFD is a tool a device that aid in accomplishing a task according to Merriam Webster. With this in mind we could then make the case that Value Stream Mapping is a method whereas a Value Steam Map is a tool. What problem are you trying to improve? Lean guys talk instead about countermeasures. Our minds grew while roaming the African veldt for quick certainty, not for open minded rigorous confirmation of hypotheses. However finding root cause countermeasures to complex problems requires careful observation and methodical hypothesis testing, which completely goes against the grain. A little while ago I was on the shop floor looking at a group of engineers dealing with a recalcitrant robot. Because of all sorts of problems, the robot was often down. The people there had responded by adding an operator making the part manually with a clever little jig to hold the part. The operator worked occasionally, when parts were missing to complete the batch, and the engineers were looking at quality. Now, the operator worked more slowly than the robot, but as the operation was mostly welding, he actually made better welds than the robot, because the operator could adapt his welding to the components he was given. A large part of the trouble with the robot was that the new supplier selected in the Far East by Purchasing kept sending non-standard components. Then someone asked the unthinkable: The answer was obvious. The operator was far too slow to achieve the required piece rate. But hang on a second. When the group calculated the customer Takt Time they found that the operator worked well within Takt. The difference would be between one reliable operator per shift three heads as opposed to one operator feeding the robot for two shifts two heads overproducing and hence stockpiling an entire shift. Only a genuine lean fanatic would argue that Takt has to be followed no matter what. In the case of capacity equipment such as presses that work much faster than Takt it often makes sense to batch. Lean methods and tools spring out of applying scientific thinking to the shop floor. Their purpose is to describe the universe more accurately so that we can take the correct decisions about living in it although changing neighborhoods remains somewhat problematic. Lean methods and tools are about describing the reality of the shop floor in a way to reveal the true cost and the added cost due to waste. Nothing more, but still a big thing. The object of these particular procedures is NOT to resolve the problem, but to learn by: Indeed, the point of lean is that you get better and better at your job by practicing the tools in real life as part of your work , every day. And you get better at developing mutual trust when you practice the same tools with others. As a result, when all people practice the lean tools all the time together, they come up with smarter processes, and answers they had not thought of before â€” creating sustainable results.

Chapter 7 : Project Management Skills from www.nxgvision.com

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Chapter 8 : 10 Quality Management Tools | www.nxgvision.com

Both of these project management tools can be produced manually or with commercially available project management software. PERT is a planning and control tool used for defining and controlling the tasks necessary to complete a project.

Chapter 9 : An Overview of Quality Control Tools in Project Management

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