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**KNOWLEDGE MANAGEMENT PROCESS
DESIGN FOR IS&T INTERNAL USE**

GEORGIA STATE UNIVERSITY

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Debra Meyer
debra.meyer@networkd.com
C949.231-9139

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PURPOSE

Georgia State University has recently embarked on an IT Customer Service improvement initiative. As part of the ongoing process improvement initiatives, GSU has elected to build an internal knowledge management process and solution push down process to be used by the Help Center and other IS&T support groups.

KNOWLEDGE MANAGEMENT OVERVIEW

In March of 2005, NetworkD provided GSU a high level knowledge management plan that outlined critical descriptions necessary to run a knowledge management process. Included in the document were the policies and processes that have served as a springboard for this knowledge management and solution push down design.

Through initial discussions with GSU, the decision was made to focus only on internal knowledge management and solution push down processes that can be incorporated into the current Remedy system, without the purchase of any outside knowledge management tool. The additional tool discussions as well as customer facing knowledge management design will be discussed in detail during the self service initiatives slated to start in February 2006. This document and all process designs are completely focused on the internal use for the Help Center and other IS&T support groups and with incorporation into the current Remedy solution process today.

KNOWLEDGE BASE DEFINED

A knowledge base is a universal store of information. Effectively managed, this information can be used by the Help Center Specialists as well as all resources in IS&T to resolve customer issues. The knowledge base will be used for diagnostic troubleshooting; to answer Frequently Asked Questions (FAQs), to standardize and optimize solutions, and to provide how-to instructions for common procedures.

The goal is to place all known problem resolutions *of high importance* into the knowledge base. If all information conforms to a set standard, it will enhance the retrieval and increase the retention of information by all users. A strong knowledge base is well organized, easily searchable, and available to all Help Center Specialists and IS&T support teams.

THE KNOWLEDGE SPECIALIST ROLE

Within the Help Center, the position of the Knowledge Specialist is critical to success of the overall knowledge management and solution push down process. The Knowledge Specialist is the owner of the knowledge base and process. He/she will be responsible for the ultimate success of the knowledge base.

Knowledge Specialist Responsibilities

Proactively Build Knowledge into Remedy

The Knowledge Specialist will proactively harvest existing Help Center documentation, manuals, and knowledge solicitation from other IS&T support staff; the university's brochures and website; closed cases; and from various other applicable sources. A large component of the information usually resides in employees' heads; therefore, a campaign to capture this information should be planned and managed by the Knowledge Specialist, with support by the Help Center Manager.

The Knowledge Specialist will incorporate the knowledge articles into the Remedy system and tie a CTI combination to the solution to ensure the article is available when a solution is needed.

Monitor Remedy Work Queue

The Knowledge Specialist will monitor his/her Remedy work queue daily to watch for knowledge article (proposed solutions) submissions as well as solution push down nominations.

Work with all Support Tiers

The Knowledge Specialist will work with all levels in IS&T to ensure submitted knowledge articles are appropriate for use. The Knowledge Specialist will also work with the managers to ensure that all OLAs are updated for those solutions that now might be in place for a lower level.

Participate in Training

The Knowledge Specialist will participate in all training that is needed as a result of the push down solution. The Knowledge Specialist will work with all group managers to ensure all new processes are understood.

Ensure Information Hierarchy Controls

The Knowledge Specialist will ensure the information contained in the knowledge base is in a hierarchical format to ensure an accurate measure for searching knowledge. Additionally, reports will be generated on most used solutions and articles. Without placing the resolutions in such a hierarchy, detailed searches would be very difficult and time consuming.

Placing information in such a hierarchy is most effective when used in conjunction with a categorization structure. Proper categorization of a case must be a requirement before a case can be resolved. The Knowledge Specialist will ensure that all CTIs are appropriately filled out.

The following categorization schema is used within the Remedy system.

Category—first (highest) level

Type—second level

Item—third level

Scrub all Knowledge Articles

The Knowledge Specialist will ensure that each knowledge article is scrubbed for accuracy and is worded in a manner that all parties can understand. The Knowledge Specialist is expected to use the writing guidelines in Appendix A of this document on each and every article.

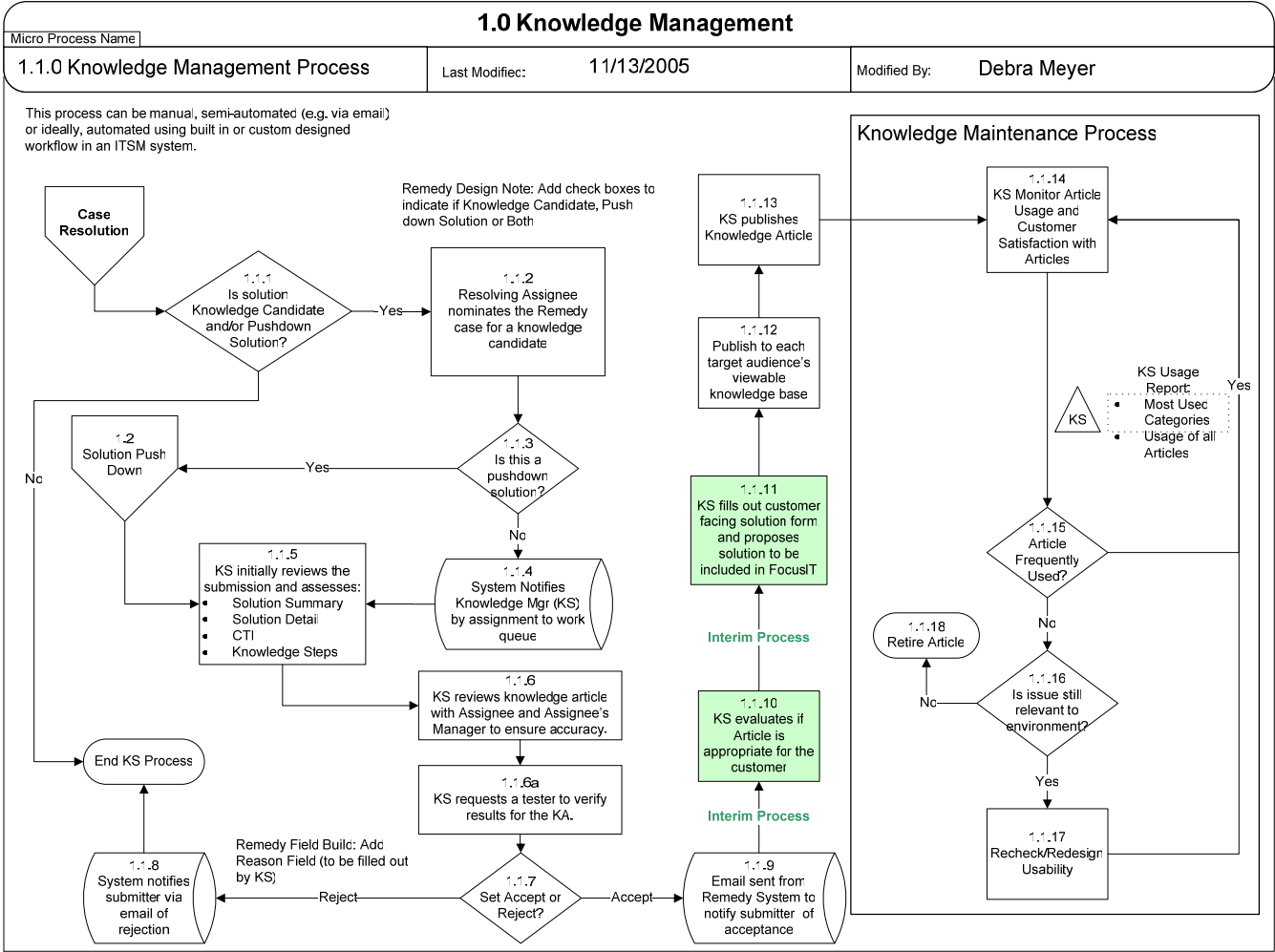
Knowledge Article Review

The Knowledge Specialist will use a review process to verify and test each solution that is written before placing it into the knowledge base. The Knowledge Specialist should rely on the Help Center Manager and IS&T support teams to help review and test knowledge articles.

KNOWLEDGE MANAGEMENT DESIGN

A solid Knowledge Management Process will allow the Help Center and IS&T support groups to become not only a best practice support service environment but an efficient process improvement center by improving first contact resolution. By using the current Remedy system's capabilities coupled with the enhanced process designs, the support teams will quickly begin disseminating knowledge and overall improving customer support. The flow diagram below is the best practice design for knowledge management.

KNOWLEDGE MANAGEMENT PROCESS



Knowledge Management Process Steps

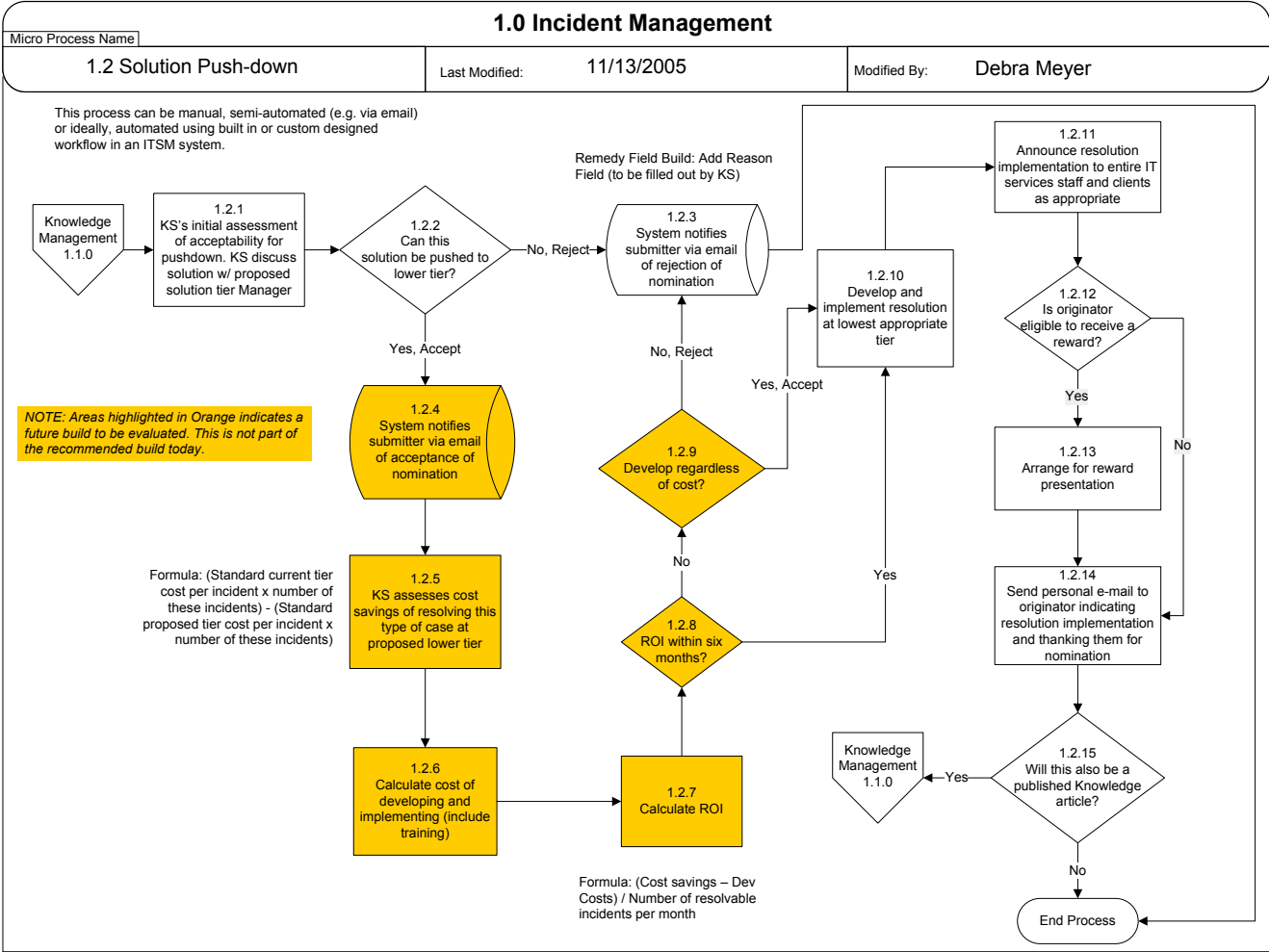
- Step 1:** Is the solution a Knowledge Candidate and/or Push down Solution? If yes, proceed to Step 2. If no, end the KS process.
- Step 2:** Resolving Assignee nominates the Incident to the KS. (Check solution box if appropriate)
- Step 3:** Is this a Push down solution? If no, proceed to Step 4. If yes, proceed to Micro Process 1.2. Solution Push down.
- Step 4:** System notifies the Knowledge Manager or Specialist (KS) by way of the Remedy work queue.
- Step 5:** KS reviews the submissions and Solution Summary, Detail, CTI, and Knowledge Steps.
- Step 6:** KS reviews article with Assignee and Assignee's Manager to ensure accuracy. If it is decided a worthy article to publish, proceed to step 6a, if not, proceed to step 8.
- Step 6a:** KS requests a tester to verify results for the knowledge article.
- Step 7:** Does the KS Accept or Reject the Knowledge Candidate? If Reject, proceed to Step 8. If Accept, proceed to 9.
- Step 8:** The KS rejects the draft and includes a reason for the rejection. The process ends.
- Step 9:** The KS accepts the submission.
- Step 10:** (Interim Process) The KS identifies the target audience(s) i.e. Customers, Help Center, Upper Tiers or all that the knowledge article is intended for.
- Step 11:** KS fills out the customer facing solution form and proposes solution to be included in FocusIT by way of an email to the communications manager.
- Step 12:** KS publishes the article to each target audience's viewable knowledge base.
- Step 13:** Ongoing, the KS should be monitoring the article usage and the customer satisfaction with the articles. This is all done through reporting. Some examples of Knowledge Management usage reports are Most Used Categories and Usage of All Articles.
- Step 14:** Is the article frequently used? If yes, repeat the Knowledge Maintenance Process by going back to Step 13. If no, proceed to Step 15.
- Step 15:** Is issue still relevant to the environment? If yes, proceed to Step 16. If no, proceed to 17.

Step 16: If the issue is still relevant but is not frequently used, generally the reason is because it is not written adequately to reflect the true reason for the article.

Step 17: Recheck and possibly redesign the article to better articulate its intent. Check out what CTI combination is used for this knowledge article.

Step 18: Pull the article from the database and retire the knowledge.

SOLUTION PUSH DOWN PROCESS



Solution Push down Process Steps

- Step 1:** KS does an initial assessment of acceptability for the knowledge to be a solution pushed down.
- Step 2:** Can this solution be pushed to a lower tier? If no, proceed to Step 3, if yes, go to step 4
- Step 3:** Submitter is emailed notifying them of the solution rejection.
- Step 4:** Submitter is emailed notifying them of the solution acceptance.
- Step 5:** KS assesses cost savings per month of resolving this type of Incident at the proposed lower tier. The formula for assessing this savings is: (Standard current tier cost per Incident x number of these Incidents per month) – (Standard proposed tier cost per Incident x number of these Incidents per month)
- Step 6:** Calculate cost of developing, implementing and training on the solution.
- Step 7:** Calculate the ROI (Return on Investment). The formula is: (Dev costs / Cost savings per month)
- Step 8:** Is the ROI within 6 months? If yes, proceed to Step 10. If no, proceed to Step 9.
- Step 9:** Is there a reason to develop this push down regardless of the cost? If yes, proceed to Step 10. If no, go back to Step 3.
- Step 10:** Develop and implement resolution at lowest appropriate tier.
- Step 11:** Announce resolution implementation to entire IT services staff and clients as appropriate.
- Step 12:** Is originator eligible to receive a reward? If yes, proceed to Step 13. If no, proceed to Step 14.
- Step 13:** Arrange for award presentation with appropriate parties.
- Step 14:** Send personal email to originator indicating resolution implementation and thanking them for the nomination.
- Step 15:** Will this also be a published knowledge article? If yes, return to 1.4.1 Knowledge Management. If no, end process.

APPENDIX A: WRITING A SOLUTION

The following standards are best practice when publishing solutions into a knowledge base.

1. Never refer to the customer as "the User." First person references are acceptable when they facilitate understanding. However, the solutions should be written as if they will be read to the customer. Short, directive statements are best. The solutions are directions written for your customer to hear or read. To write, "Have the customer click <Start>" is inconsistent with this approach. Simply write "Click <Start>."
2. Type titles in Title Case. Title Case is a form of writing where the First Letter of Each Significant Word is capitalized, e.g., Alarm System interfering with the Phone.
3. Write solutions using step-by-step instructions. Paragraph formatting is unacceptable for sequential procedures, but acceptable for explanations. Steps should be numbered with a period after the step and two spaces before the description, e.g., 1. Click on..., 2. Go to..., 3. Select the...
4. Start all solution steps with a verb, e.g., Click OK or Reboot your PC.
5. Use "when/then" statements for steps that include conditions, e.g., when this happens, then do that. The word 'if' can communicate that whatever happened isn't normal and may cause a lack of confidence if the customer is accessing the knowledge base for self-help.
6. Write Help Center as two capitalized words. This is done to maintain a consistent format and to ensure all knowledge base solutions are written to a standard. Consistency is one of the factors that make a knowledge base effective.
7. End all solutions with 'End Solution' in single quotes and sequentially number it as part of the solution. This format keeps all solutions consistent and indicates clearly when all steps toward resolution have been completed. When the customer or the HCS sees 'End Solution', he/she knows that all steps have been completed. For example:
 1. Click <OK>.
 2. 'End Solution'
8. Use present tense when describing an issue, e.g., the machine displays the following message.
9. Capitalize letters to emphasize important warnings, e.g., DO NOT TURN OFF THE CPU.
10. Do not use bold, colors, underline or any auto formatting. This type of formatting may not transfer to the knowledge base fields.
11. Enclose keyboard actions, buttons, screen names, tab names and menu names in brackets < >. Type bracketed items in all capital letters, e.g., <ENTER> or <DEPRESS>.
12. Capitalize the word "NOTE" and follow it with a colon (:). The text contained in the note should be in Title Case. (NOTE: Check the Caps Lock Key).
13. Use dashes to list examples. Follow the dash with a space.

E.g., several things can cause this:

- 2nd RX line is dead from telephony circuit issues.
- One or more of the new phone system lines is dead.

14. Do not use uncommon abbreviations for words, e.g., Printer should not be abbreviated as Prtr or Ptr. Abbreviations can greatly reduce the effectiveness of searches.
15. Use a period to end a sentence.
16. Place a space before and after any keyboard character. This will allow for thesaurus and synonym matching, e.g., Print / Printer or Print * Printer.
17. Do not enclose text in special characters, such as quotation marks, asterisks, etc. Parentheses should not be used in writing solutions as they indicate "aside" information. Solutions should contain only relevant and explicitly stated information.
18. Write solutions in a commanding tone. A solution is a procedure and must be written in language that leaves no ambiguity. Avoid using words like "please" and "should" in the solution. Effective solutions dictate specific steps that are not optional.
19. Write out the problem descriptions as statements, not questions. Questions or additional information can be provided in the Issue Cause section of the solution.

Solutions can be written in an MS Access database, in a Word file, or directly into the knowledge base. When populating the knowledge base, it will be easier to manipulate this information if it is saved in a standard and singular format. If some members of your team use Word while others use Access, or if the formats do not match, additional time will be needed to manipulate the solutions before importing them into the knowledge base.

If solutions are to be housed in a database, e.g., Remedy, it will be useful to build a form such as the Sample Solution form in Word, or a Knowledge Article Template, so that the Knowledge Specialist has a common tool that is easy to use. The Knowledge Specialist will translate the information into the database as a part of getting the article ready for publication. However, the Knowledge Specialist should insert as much streamlining into this process as possible to increase productivity.

What form should solutions take? How much background information is needed when describing a problem? How much detail should be offered in creating solutions? These are all questions that need answers before beginning to write solutions. The only rule that must remain unbroken is: BE CONSISTENT. Whatever form is chosen for solutions should become the standard for every solution created and published in the knowledge base. Only in this way will the knowledge base become a familiar friend to the HCSs, IS&T support teams and the customers.

Solutions must have some background information. The following items are excellent examples of the type of background all solutions should contain:

- Summary of Solution
- Details of Solutions (including Steps)
- Category, Type, and Item

APPENDIX B: KNOWLEDGE TEMPLATE

Created By: Name of Author	Date: Date article was created (m/d/yy)
Solution Summary <ul style="list-style-type: none">- Title Should Be Short & Precise.- Title Should Briefly Describe What The Solution Is For.	
Category Tree: (Category Type Item): Each Article must have a Category, Type, and Item	
Priority Level: 1 - Urgent	Audience: 2 - IT Facing
Solution Details: <ul style="list-style-type: none">- Problem description should be detailed.- Problem description should be written in sentence format.- Problem description should be no more than (1) sentence.- Account names should precede the problem description.- Never refer to the customer as "user".- Use present tense when describing a problem.- Problem description should be statements, not questions.	
Step-by-Step Resolution Instructions: <ul style="list-style-type: none">- Write solutions using step-by-step instructions.- Start all solution steps with a verb. (i.e., "Click OK" or "Launch Browser")- Capitalize letters to emphasize important words or phrases.- Do not use bold, colors, underlining or any auto formatting.- Capitalize the word "Note" and follow it with a colon.- Avoid using uncommon abbreviations for words.- Use a period to end a sentence.- Write solutions in a commanding tone.- Avoid using words like "you", "your", "please."- Use the verb "press" when referring to keyboard keys.- Use the verb "click" when referring to mouse functions.- Use the verb "select" when referring to menu options.	