

# The Complete Guide to the IT Help Desk

Everything you needed to  
know and more



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# Introduction

“IT service data is often considered the most mundane, overlooked source of insight. The truth is that it’s like the central nervous system of the enterprise, extending to every part of the business and to every connected device.”  
Gaurav Rewari, CEO Numerify

There’s an old Internet joke about the first help desk emerging soon after the discovery of fire—when one caveman would go to another for a reminder of just how to strike that spark again.

As technology has evolved, so has the need for a tightly integrated system of providing help and guidance to keep employees up and running so they can focus on their core competencies, moving the organization forward.

As technology has become more complex—and despite the friendly user interfaces and wealth of mobile tools, it has become more complex—the need grows for ever more efficient and seamless help desk solutions. In fact some of the user friendly elements of IT—such as the ubiquitous adoption of BYOD—have added new layers of complexity.

A well-designed help desk system can support flexible and granular reporting that offers deep insights into an organization’s operations. And the great news is that a well-crafted help desk solution can go beyond boosting productivity from an IT perspective, to playing a key role in enabling efficiencies for key HR services, facilities functions, and virtually any other area of the organization that has a focus on serving internal users or external customers. This book examines some of the analysis and decision making that helps lay a successful foundation for help desk deployment.

Chapter 1, *Identifying and Automating Core Business Practices*, covers what to consider when analyzing your needs and workflows, implementing automation for peak efficiency, and providing value to your help desk and other areas of the organization.

Creating categories, and crafting hierarchies, gives an organization the opportunity to step back and examine the elements that represent daily workflows and responsibilities. Categories can be used, in a sense, to actually create a model of daily life for the organization’s help desk or any other service operation. Chapter 2, *Defining and Organizing Category Structures*, covers how the categorization process can help to refine processes, identify what works, and discover new ways of enhancing efficiency while providing even better care for users.

Chapter 3, *The Importance of Infrastructure Analysis*, breaks down the complex elements in your environment and discusses how a great help desk solution should be tightly integrated with it.

A well-designed help desk portal, brimming with guidance and knowledge, is a powerful asset for the entire organization so it’s important to encourage self-service access to your help desk resources. Chapter 4, *Self-Service Strategies for Help Desk Portals*, covers how to drive users to your self-service portal so that the help desk—and the wider organization—can realize the great efficiencies that come from users resolving their own issues.

# Chapter 1: Identifying and Automating Core Business Practices

“None of us is as smart as all of us.”  
Ken Blanchard

It's important to bring people together and look at your current workflows, processes, opportunities, communication methods, and response times.

## Needs assessment: Take the first step

On the journey of identifying and automating core business practices, performing a needs analysis is a logical first step. While most organizations will already have some specific issues they're trying to address, it's important to step back and invest some time in a formal needs analysis. The better you understand your needs, the more wisely you can select your solution.

While it is natural for an initial needs assessment to focus on what isn't working, and what ought to be automated—and this is a very good place to start—it is important to also look forward toward how processes could be improved beyond solving current pain points. The needs assessment effort provides a great opportunity for analyzing the efficiency of current business processes and considering where redesigning existing, or creating new, business processes provides value.

## Put together a needs assessment team

Great things happen when you bring minds together, focused on a common goal. Or, as Helen Keller said: “Alone we can do so little; together we can do so much.” And for a more pragmatic take, Ken Blanchard observed: “None of us is as smart as all of us.”

To get a feel for who you might want to bring onto your needs assessment team, start with your good representatives from different functions within your own support organization, and then branch out for outside perspectives. A good place to start is to draw up a list of the different groups you serve. Involving other groups provides a wealth of perspectives and fresh thinking, while also providing a cross-functional foundation that should prove highly valuable once it comes time to roll out your solution and need internal champions to carry the message of its value.

It's wise to find a balance between seeking guidance from across the organization, while also keeping the assessment team a manageable size for efficient collaboration and decision making.

As obvious as this may be, it's very important to have a good representation from all levels of your IT support organization. Those who are working the issues every day should provide a wealth of ideas from their real-world experiences, and from their own ideas of how their daily work could be made easier and more efficient.

## Identify and define workflows and business processes

Once you have your needs assessment team together, it's time to identify the needs you want your new help desk system to answer. A good starting point is to ask all of your members, from across the organization, to identify their pain points and wish lists.

Collect a list of what isn't working. Collect a list of what is working. Along the way, encourage a green-field approach. Ask for suggested services that aren't offered, but that would add value. A good way to do this is to focus less on identifying what you want to find in a help desk solution, and instead focus on what would make life easier for all stakeholders.

This approach is echoed in something said by Daren Nelson, CEO of iSupport. “From the very beginning we went beyond creating a help desk solution—we designed a workflow engine that could be used throughout an organization.”

Common workflows your help desk solution should support include the following for work items such as incidents, problems, and changes.

- Automatic response to incoming email
- Work item escalation
- Time-based business rules (SLAs)
- Work item creation from email
- Work item creation from social media
- Work item assignment based on skill, location, and workload
- Work item update based on incoming email

Once you've collected the workflows you want to deploy, the next step is to define the processes within each workflow.

## Map out the processes you have and those you need to add

Creating a visual framework is a great way to start mapping out your existing business processes, and to help you to break large functions into their constituent building blocks, and to identify— and pencil in—how new processes could be added to enhance workflows.

As you map out your services, invest the time to break each one down into the basic building blocks of the workflow. Step by step, define what goes into responding to each service request. Along the way, work together as a team to fill in some basics such as:

- What are the services?
- Who delivers the services?
- What information do we need about the service requester?
- How do we collect this information?
- What information will be provided by their Active Directory or LDAP data?
- How are requests prioritized and resolved?
- What works with current workflows?
- What doesn't work?
- Who are the stakeholders?
- What permissions or approvals are needed within a workflow?
- How are approvals currently handled?
- How could they better be handled?
- What assets should be linked to the requester based upon directory or additional HR information?
- How can existing workflows be improved?
- What new workflows should be created?

By methodically working through your workflows, breaking them into logical steps, you open the door for identifying ways to enhance efficiency of existing workflows and to discover opportunities for creation of new workflows.

## Define categories

The concept of categories can be helpful. Categories are custom values that you create for support representatives and customers to use when describing an incident, problem, requested change, knowledge base entry, or whatever other interactions you would like to define.

Categories should be organized in a hierarchical structure with multiple levels—ranging from general to specific. When planning your category structure, decide on a basic set that applies to all incidents. It is useful to chart your

category structure to ensure that it is logical and complete; many customers use a large white board when brainstorming the category hierarchy.

Involve as many people as possible in category brainstorming, and be sure to consult with your support representatives. They'll utilize categories more effectively if they are involved in the design process. You can come up with a draft list and then have the support staff try to apply the list to current open issues in their existing application; this enables you to target missing items and make adjustments to the hierarchy.

## Create opportunities for automation

The process we've just explored of breaking down workflows into basic building blocks proves valuable later as you assemble workflows built upon an integrated set of elements that can be automated.

This front end work, including definition of categories for anticipated service requests and assignments, helps you to define the full nature of the work that's being done, including the parameters, problems, and resolutions. This work should be done with consideration for all stakeholders, and the data that these stakeholders will need. Needs will vary from one organization to another.

A location field, for example, might not be needed for a company working from a single location, but the location attribute can be essential to organizations with large campuses, or multiple locations around the U.S. or across the world.

The IT support group, depending upon size and number of locations, may want to take advantage of different options for routing assignments. For a small organization, it may simply be name-based routing, while a larger organization may want to implement location-based routing, or perhaps skills-based routing depending upon the subject of the service request, to most efficiently route incidents to the right resource to get requests resolved as quickly as possible.

## Utilize customizable fields

Whether you are starting with an incident form or a customer form or an asset form, you should be able to add or subtract fields so that the form precisely meets your workflow needs.

This prevents the help desk application from dictating what can and can't be done within your workflows. This type of flexibility also leaves the door open for redefining or augmenting workflows in the future.

## Incorporate multiple communication channels

An effective unifying strategy is to create a help desk portal that incorporates a spectrum of communication channels to help match the varied working styles of those within your organization. While you don't need a portal to provide phone-based and email-based support, a portal provides a great foundation for your help desk efforts. The spectrum of communication channels you provide users can include:

**Phone.** Phone support is the traditional channel for contacting the help desk. An interactive voice recognition system can guide callers through an initial branching question set to help expedite call routing. Your help desk solution should incorporate scripting support to help your agents on the help desk side walk users through a branching troubleshooting analysis.

**Email.** Another traditional communications channel, email should be well integrated with your help desk efforts, ideally in a solution that can grab email content to help fill out incident information.

**Texting.** Millennials, and similarly minded users, in many situations prefer texting to phone calls, which means help desk solutions should support texting—ideally with the ability to parse requests to start the incident process.

**Portal Forms.** Portals can enhance the efficiency of help desk operations, especially through use of forms in which users are led through a branching algorithm collecting information about their problem. While the completeness of forms will vary by user, they can all be used to help in automating triage and routing alerts and decisions.

**Portal Live Chat.** A help desk portal solution should be able to integrate seamlessly with a live chat function, which many users prefer over phone or email. Live chat provides the immediacy of phone contact, with the convenience of the user being able to control the pace, and the comfort that many have developed for text-based communication.

**Knowledge Base.** A portal provides a good home and access point to a living collection of data on the identification and resolution of problems. While a knowledge base is a major tool for your help desk personnel, it also provides a wealth of information for users inclined to explore on their own.

**Discussion Forums.** Supported by your help desk system, discussion forums pay dividends in that users and super users can gather to tap into (or share) acquired wisdom to solve their own problems. This removes load from help desk personnel, who can monitor and contribute to discussion forums.

**Facebook.** Yet another communications channel to consider is Facebook and other social media. This follows a strategy of extending communication options to those who like to work with social media platforms.

**Twitter.** While Twitter isn't designed for large content transfer, it can be a useful channel of communication to support and monitor. Twitter could work in situations such as: "Email's down." Or "Printer on 3rd floor is out." Or, if your help desk deployment is extended to help facilities with support, someone could tweet: "Card reader out on Building 2."

**Mobile.** All of the options above should include interfaces or landing pages optimized for mobile. The ubiquity of mobile devices mean that more and more workers are reaching for a smartphone, whether in the field, at home, or walking down the corridor.

A help desk solution that supports multiple channels of communication with deep integration can enhance help desk efficiency by harvesting initial data and, when possible, guiding users through forms that can begin the population of incidents—and provide guidance for triage and routing. "Supporting multiple channels of communication shows respect for the users," says Darren Grigg, Product Manager and Technical Sales Engineer at iSupport Software. "Converting an email to an incident is a courtesy for whomever might not feel comfortable filling out a form on a portal. Supporting chat is great for those who don't like to use the phone. And your portal, forms, and everything else should support mobile just as well as accessing resources from the desktop."

## Design for the spectrum of response time needs

As your needs assessment team gathers suggestions for creating optimum workflows, be sure that they are considering ways to categorize incidents for required response times.

Categories, discussed earlier, can be helpful here as each category can have its own forms for specifying attributes—including urgency and required responses.

Some categories are pragmatic: A crashed server impacting many should naturally be assigned a higher priority than someone requesting help for formatting their Excel spreadsheet. Other categories are more expedient—such as if it is the CEO who needs help formatting their Excel spreadsheet. And there is a full spectrum between. The key is to consider all of the situations likely to be faced and categorize them in a sensible manner.

## Work with reviewers and approvers

The needs assessment team should invest time on integrating the needs of reviewers and approvers so this can become an automated part of the workflow whenever needed. Help desk requests that may involve review and approval could range from someone requesting access to an unsupported browser, or a larger monitor, to a newly promoted manager requiring expanded access to your ERP system, or to a new application.

It's not enough to simply declare: "Approval is needed here." The needs assessment team should break down the process in the same way they've examined and defined (and perhaps restructured) other help desk workflows.

Drill into the details. For each item that requires approval, define who the approval is by job title, and specify whether multiple levels of approval are required—and if so, each approver and whether an automated workflow would send it to all approvers simultaneously or sequentially.

In the case of someone requesting a new browser or anything else not currently supported, is it routed to something like a change advisory board for consideration? If so, what constitutes the board's approval? Can any board member approve? Is a vote required? What's their preferred channel of notification? With each step defined, it will be easier to create automated workflows that incorporate review and approval.

## Define reporting needs

It's important for the needs assessment team to consider reporting needs—for the IT support organization and beyond. While a good help desk solution should generate and save a lot of data, what is the value of that data if it can't be reported on?

"You definitely want to think about reporting early on," says Grigg. "Break it down based on who will need reports on help desk data, what data different stakeholders might need, how the data can be filtered and searched for reporting."

The stakeholders represented on the needs assessment team should be able to provide a reporting wish list that provides a good insight into what is needed. The next step is to break down each report to define precisely what metrics are required.

A help desk solution should provide a robust and flexible capability to generate whatever fixed reports are identified, as well as the ability to support ad hoc and special request reports.

Integration plays a role. Your help desk system should be able to integrate with Excel, Word, and SQL Server, as well as third-party reporting tools to enable users to create powerful, highly filterable reports with little effort.

Just as you'll want an intuitive drag-and-drop design environment for creating workflows, you should have the same sort of do-it-yourself ease when creating reports. Examples of what you should look for in a reporting tool include:

- Out-of-the-box reports for the most common needs
- Drag-and-drop reporting environment
- Report filters for custom reporting
- Shared and personal reports
- Counts, percentages, averages, minimums, maximums
- Chart and graph displays
- Conditional highlighting
- A badge function for at-a-glance updates
- Ability to create scheduled reports delivered via email, or other channel, in formats such as .PDF, Excel, and Word
- Direct export to Excel capabilities
- Integration with SQL Server
- Integration with third-party reporting tools

With a reporting platform such as this, the IT support team can automate delivery of scheduled reports while also meeting the needs of one-off report requests or audits. This type of flexibility means that as the need for new forms of reporting arise—those unseen by the needs assessment team—captured data can be filtered for and reported against to fill the needs on either an automated delivery schedule or one-off basis.

"A robust reporting system can help IT Support spot problems that need addressing," Grigg says. "For instance a report might reveal that 80% of the incidents for a given application could be resolved through adjusting a setting on user desktops."

## Take advantage of existing infrastructure

While cloud-based resources have reduced the up-front costs for new organizations to deploy resources, organizations that have already invested in infrastructure should be mindful of the value they've already got in place, and search for solutions that can be deployed with it.

While this seems like common sense, some organizations, swept away by cloud messaging, ignore the substantial value they have at their disposal and send what can be critically sensitive data off to a cloud-based solution. For smaller organizations, say less than 50 employees, a cloud-based solution may make sense. Yet there are important questions to ask your cloud vendor, such as: Where will my data be stored? In what geographic and political/jurisdictional realm will it reside? How will it be secured, and how will our intellectual property be protected?



Some cloud-based solutions, while offered free of charge, have a revenue model based upon harvesting the information you store for analytics. If you've developed efficient workflows, you might want to keep them as a competitive advantage rather than leaving them open for a service provider to analyze, package, and re-sell to potential competitors. This raises questions such as: Who owns my data? What are they allowed to do with my data?

Cloud-based solutions can also create problems when it comes to integrating with your other resources. If you've assembled one cloud product that was written in Ruby on Rails, and another from a second vendor who wrote theirs in Python, integration with your Active Directory, email servers, or ERP systems could be problematic.

So, if you've already invested in something like a Microsoft shop and have invested in human resources with the knowledge to efficiently operate and secure it, there is value in taking advantage of your existing resources.

## Leverage your existing network directory

Ideally a help desk system integrates with your Windows Active Directory or LDAP directory. Directory integration is important because it helps associate tasks, workflows, and approvals with those who are requesting the services, along with information for any reviewers or approvers required by your workflow definitions. Directory integration also helps associate service requests, and requester contact and location information, with help desk requests.

With Active Directory integration, as soon as the help desk contact begins your reps can see exactly who they are talking with and have all of their contact information. Ideally the help desk system should also use the contact information to bring up the user's help desk history.

Active Directory information can be pulled into an automated system to determine, for example, the exact configurations and application sets required for a new employee's setup— based upon the category of their job type.

## Authentication

Authentication can also be controlled by Active Directory. Organizations should be able to use Active Directory authentication with their help desk application, which simplifies deployment and frees users from having to remember another username and password. The take-home lesson here is: Don't reinvent the wheel. Don't buy a solution that's going to require you to duplicate tasks and processes that can be pulled from your existing IT infrastructure.

## Imported asset data

A help desk solution should integrate seamlessly with other systems, including third-party asset tracking applications, into which your organization may have already scanned information on computers, printers, routers, and other assets. The key is to get this information into the help desk system so complete information is available for incident management or change management workflows.

Ideally your help desk solution should include scanning technology that queries your networks and builds databases with detected IT assets. This also helps you to perform real-time scans to compare with earlier scans when troubleshooting. The same scanning should also allow you to monitor CPU usage, disk space usage, and memory usage in real time. You should be able to set alerts that notify you when thresholds are exceeded, keep a log of the thresholds until service returns to a normal state, and create an incident for the event.

### Asset and services tracking should include:

- Asset owners and asset bar code printing
- Predefined and custom views and reports
- WMI and SNMP scanning methods
- Descriptive fields such as model, location, and manufacturer
- Custom fields
- Groups and types for establishing asset relationships and access
- Dynamic and scheduled scanning for IT assets with baselines and comparisons
- Device monitoring

- Audit history
- Software license tracking and unit count

## **Integrate with your existing email platform**

Email is so essential to help desk workflow automation that you will want to create, that it's essential from an efficiency standpoint to choose a help desk solution that will seamlessly integrate with your email platform. Along the way you will want to verify that your email server is either on-premises or that you can integrate with it if using a cloud-based resource such as a hosted Microsoft Exchange Server.

Integration includes the ability to send email from the help desk solution, so incident information can be easily included. Even when a user has entered their information from your portal, a help desk rep will likely still find email the most efficient tool to use for follow-up questions and similar communication.

## **Make sure you can easily customize and update**

Help desk teams generally know as well as anyone that: Things Change. Even with stellar work from your needs assessment team and great implementation of their suggested workflows and procedures, you can expect for there to be continual flow of suggestions—some highly valuable—on how to make things better.

Ideally you should deploy a solution that makes it easy and intuitive to accomplish these changes on your own. The help desk is all about responsiveness, so when an opportunity—or need—to update workflows or other elements comes up, you don't want to be held hostage to submitting a change order to a vendor. By deploying a help desk system that has flexibility built in, you avoid the cost and time delays that otherwise come from submitting the work to a vendor, or calling in an on-site specialist.

The best solution will have a built-in drag and drop design tool that will let you customize every form, every field, and every label, as well as the overall layout in which you work with your system.

By the way, this also takes a bit of pressure off of the needs assessment team. On the one hand you want them to create an ideal solution, but on the other, you can't expect them to think of every form or field or label they will ever need.

"Those with administrative permission should have the ability to go directly to a form and add an extra field, alter the layout, or change the actual business process of the workflow," says Grigg of iSupport. "This kind of flexibility should be like a breath of fresh air to everyone because it means you don't need perfection on day one. You can always come back and make whatever additions or tweaks you need to make things even better."

## **Expand your value to beyond the help desk**

A great help desk solution should at its foundation be a workflow engine, capable of providing the same high-value business process and automation benefits for whatever area it is aimed at.

After deployment—or even as part of your needs assessment—you might identify ways in which your help desk workflow engine can be extended to help other areas of the organization. The same categories and workflows that bring efficiency and automation to your help desk can easily be extended toward HR, facilities, customer service, and other areas of the organization focused on meeting the needs of internal and external customers.

## **Supporting HR**

Human resources and IT support departments have long worked closely through necessity. Typically when new employees are hired, they are provisioned with a computer with a defined set of applications to fit their work needs along with an email account and network access to essential applications and services. Added to that mix could be laptops, smart phones, and other mobile devices.

Similarly, when an employee leaves the organization, IT support is typically essential to the offboarding process of deactivating passwords, blocking network access, and re-configuring hardware and other devices for redeployment.

A well-designed help desk workflow engine can be used to create categories and business processes— including approval routing—for onboarding and offboarding employees, and handling requests for new equipment or access to new network resources.

The same type of workflows and automations could be used to help HR accomplish other responsibilities such as responding to employee requests for changing 401K plans, adjusting insurance coverage, and a range of other services.

All of this points toward a great opportunity for the support team to approach HR and other organizations with the same type of needs assessment effort that went into designing and deploying their help desk deployment. Efforts like this expand the stature of IT as it provides leadership in bringing efficiencies to other areas of the organization.

## **Providing value to Facilities**

Facilities is another area in which workflow automation can be beneficial. In the same way that the IT support team helps HR with onboarding and offboarding employees, the facilities department is often part of the same basic efforts. When onboarding a new employee, the facilities department may need to prepare an office, get furniture moved to the right place, set up a cubicle, or run conduit for power or network access.

The same types of workflow and automation used for the help desk can bring efficiencies to the facilities department. and it can all be done, if desired, within the framework of the existing help desk deployment. Users entering the help desk portal can simply be offered a new category of options: Facilities, where users could go request a white board, request a furniture repair, report people were tripping on a piece of ripped carpeting, or request an HVAC specialist to adjust the heat or air conditioning.

All such requests could be handled and tracked, and flagged for approval using the same workflow engine upon which the help desk was built. And the same type of needs assessment team, made up of members of the facilities department and other stakeholders, could go through the process of defining and implementing their own workflows, designing their own forms, and creating their own categories.

As with HR, this gives the IT support team the ability to display leadership and expertise further across the organization.

## **Searching for additional opportunities**

The same workflow and automation technology that empowers a great help desk solution can have a positive impact on other departments. Some examples are:

- Human resources
- Facilities management
- Customer service
- Sales and marketing
- Quality assurance
- Service delivery teams

Whether it's customer service, sales and marketing, QA, or any other form of service delivery, the needs come down to the same basics as the help desk. You need to be able to receive a request, route the request to the proper service provider, attain any approvals required, and track the process through completion.

Many departments throughout your organization are focused on providing services to either internal or external customers. These services are found under a number of different names, but some exploration within your organization can uncover a wealth of opportunities for the IT support team to share the technology it has deployed—and the wisdom it has gained—to help other areas of the organization enhance their service offerings.

## Chapter 2: Defining and Organizing Category Structures

“For every minute spent organizing, an hour is earned.”  
Benjamin Franklin, a founding father of the United States

The need for order seems to be an innate part of the human spirit. After all, a foundational element of science is the organization of observations and inquiries. Within the world of the help desk, the need for organization is paramount. Fortunately a natural structure can be defined and refined through the use of categories.

In this chapter we'll explore the power of categories, and look at how they can be used for everything from work item assignments, to defining reports, to serving as building blocks for automation.

Categories are custom values that you create for support representatives and customers to use when describing an incident, problem, change record, or knowledge entry. Categories are organized in a hierarchical structure with levels typically ranging from general to specific.

The great news for help desk managers is that, with a properly structured help desk solution, the category creation process can be an enjoyable and enlightening exercise. Defining categories should provide an occasion for identifying everything a help desk currently does, with an eye toward refining processes, identifying what works, and discovering new ways of enhancing efficiency while providing even better care for users.

The categorization process can also enable more efficient reporting and identify new opportunities for time-saving automations. Along the way, the help desk organization may identify opportunities to extend its thought leadership across the organization through offering integrations to help meet the needs and extend the reach of other service-oriented organizations within the enterprise such as Facilities and Human Resources.

### The beauty and power of categories

Even after spending years within the realm of help desk solutions, it's easy for a professional to admire the logical beauty and power of a well-crafted category system. In the same way a philosopher might speak in terms of reason, or a mathematician on the purity of numbers, the process of creating—and updating—categories provides an opportunity to harness logic and capture clarity.

Creating categories, and crafting hierarchies, gives an organization the opportunity to step back and examine the elements that represent daily workflows and responsibilities. Categories can be used, in a sense, to actually create a model of daily life for the organization's help desk or any other service operation.

Categories can also serve as a de facto repository for intellectual property. “When deployed properly, categories capture intellectual property that might otherwise be lost when an employee leaves the company,” says Daren Nelson, CEO of iSupport. “The key to capturing that IP is properly recording and categorizing help desk tickets.”

Categorization is the key to finding problems that have been reported before and using that information to solve the problem faster and at less cost each time. Proper categorization is also the key to customers finding information in your knowledge base and solving the problem themselves.

When working with a solid help desk solution, an organization can take advantage of the category crafting process to enhance operations across the service organization. Part of the beauty of the process is that, when working with a robust help desk solution, you are free to create whatever categories you like, with whatever hierarchy you want. Categories give you the ability to customize your help desk application to model your own real-life operations, and to meet your own real-life needs, as well as the needs of other areas of the organization.

Categories can help you in a number of ways, including:

**Defining work items and workflows.** Categories can be used to define work items in terms that match specific workflows and meet the needs of service representatives and the customers they serve. Mapping out workflows, and the basic elements from which they are built, can help inform your category creation.

**Simplifying routing.** A well-designed category system simplifies routing, as each work item category can by definition be routed to the most efficient resources.

**Reporting.** A category system ideally is created with a consideration to reporting. Incorporating into your category system which metrics are required within your help desk operation, and beyond, can guide category creation that naturally feeds into matching reporting needs.

**Embedding business rules.** The category planning process ideally considers business rules so operational requirements and best practices are built into category definitions.

**Facilitating approvals.** Operations are streamlined, and ambiguity is removed, when your category creation integrates any approval processes such as budget authorization requirements for equipment replacement or new purchases.

**Enabling automation.** Categories—especially those that support business rules and facilitate approvals—provide building blocks that can be assembled into efficient automated processes.

**Building the knowledge base.** A logical set of categories make it easier—and more inviting for users to find the content they need in your knowledge base, as well as to contribute content to build out the resource.

With all of these great benefits from creating a category system that models your own service desk operations and wider organizational needs, a logical next step is to take a closer look at the process of creating categories.

## Just get going!

Q: What does it take to create a great set of categories?

A: Donuts, coffee, and a white board. Or beer and bagels and some post-it notes. Or maybe an off site in the south of France.

The take-home lesson is that creating categories should be fun—and inclusive. Don't get flustered by the gravity of the event, because while it's important, it's not rocket science. Whatever categories—and hierarchies—you create can be tweaked, replaced, or re-ordered whenever you like. John Stimson, Senior Manager at iSupport, puts it this way: "Give categorization thought—but not too much thought. Whatever you create today, you can tweak tomorrow. Nothing is written in stone. Just get going—it's easy."

Part of the "just get going" philosophy involves inviting a cross section of users and other stakeholders into a conference room to start tossing ideas up on a board. Rather than a single meeting, you can host a series, perhaps beginning with the help desk representatives who are already using your existing system on a daily basis, and should provide great insight into the categories that would work well for them.

Throughout the process, move toward creating something that reflects your own organization's collective genius. But along the way don't get bogged down or intimidated by the process. Remember that when it comes to creating categories, it is more art than science. You have the freedom to create whatever system works best for your operations.

"Give categorization thought—but not too much thought. Whatever you create today, you can tweak tomorrow."  
John Stimson, Senior Manager, iSupport

## Best practices

When planning your category structure, decide on a basic set that applies to all incidents. It is useful to chart your category structure to ensure that it is logical and complete. Many customers use a large white board when brainstorming categories and their hierarchies. Some best practices for getting started include:

**Learning from the old system.** If you are replacing an existing help desk system, take a close look at it and invite the input of others who use it regularly. What worked? What didn't? Ask your help desk representatives what they liked about it, and what they didn't. What reports worked? What reporting requests were difficult or impractical to meet? What categories worked? Which ones caused confusion?

Don't try to recreate your old category system While it is good to evaluate what worked and what didn't with your existing category set, you will be losing a great opportunity if you simply replicate your existing categories—unless you are fortunate enough to have already created a perfect system.

**Starting with the help desk team.** Your help desk representatives and managers provide a wealth of real-world, front-line perspective as to how categories—and their hierarchy—can help them more efficiently and easily get the job done. White boarding with this group can help sketch out a basic framework of categories and their hierarchical relationships. From a more pragmatic standpoint, rolling out the new system should go a lot smoother if those who will be using it had a hand in crafting the solution.

**Expanding to senior management and other stakeholders.** Senior management and other stakeholders should be involved with the creation of your category tree. While they may not have much to offer on how to categorize calls for software update help, it is vital to learn what types of reporting, key performance indicators, and other metrics they may want to access from the new system. Categories play a major role in reporting, making it important to link the two early in the design process.

Exploring the needs of other organizations. Your help desk may already be integrated to serve needs of other service organizations such as HR, Facilities, or Customer Service, in which case you will want to see how your category tree and reporting can help them. And, if you haven't yet reached out to serve them, this could be a good opportunity. Your same team and infrastructure that supports hardware and software could also be used to create tickets for Facilities to deliver a phone to a new hire or to coordinate an office move.

Involving your internal customers—the users Integrating the user's perspective is always important and particularly so if you plan to deploy a portal with branching questions or a knowledge base to guide self-help options. User involvement can raise pertinent categorization questions. For example, a user unable to print might see it as a hardware problem and search for an answer through hardware categories, while behind the scenes the actual resolution is all about an application having the incorrect driver. How do you categorize the ticket? How do you branch their queries?

## Brainstorm and draft

“Don't try to think of every category you need in the first pass.”  
Darren Grigg, Product Manager & Technical Sales Engineer, iSupport

With a sense of who you may want to include in category creation, let's take a closer look at what to consider during the process. Your structure should be:

**Complete.** When planning your category structure, identify a basic set of categories that can encompass all incidents, problems, changes, or other elements that cover daily help desk operations. If you end up with some miscellaneous items, they can be grouped within a category labeled “Other” for the time being.

**But not completely complete.** Don't let a search for completeness get in the way of progress. “Don't try to think of every category you need in the first pass,” says Darren Grigg, Product Manager & Technical Sales Engineer at iSupport. “Build out the categories your group members come up with easily. If you are in a branch where no one can think of another good node within thirty seconds, but you all feel more will be needed, just add ‘Other.’ Later your reporting of tickets per category will point to whether you need to add more.”

**Logical.** Part of defining categories is grouping them together in hierarchies. Again, a white board or large sheets of paper can be helpful when grouping categories and creating their hierarchies.

Be sure to:

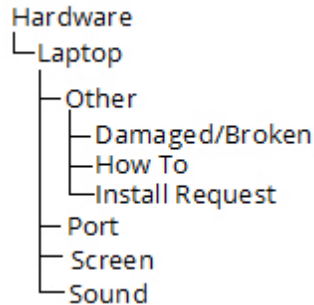
**Analyze.** Analyze the issues your company is addressing. If you have an existing support application, if possible, run a report on incidents by category. Review the incidents assigned to any categories named “Other” so you can create additional categories if necessary. This also allows you to identify support representatives that need more training in categorizing incidents.

**Look for what's missing.** Along the way, invite participants to check for completeness. Do the categories cover what your help desk representatives and users see in a day? Do the categories track with the issues your customers care about most, and the issues that allow you to efficiently plan company resources?

**Balance the hierarchy.** Be sure to balance the hierarchy; an extremely in-depth hierarchy makes for great reporting, but may make it difficult for support representatives as they spend more time trying to find the most applicable category. On the other hand, a hierarchy that is too generic can generate ineffective reports.

**Limit level one categories.** Try to limit the number of level-one entries. Generally it is good to keep your level-one categories to 10 or fewer, to make life easier for users. You can include an “Other” as a category for any miscellaneous items that do not fit into a specific category. Remember that you can always re-categorize items within “other” as new information or trends emerge.

**Limit hierarchy levels.** Limit the number of category levels you create. While some categories may call for more, it is generally user-friendly to limit hierarchies to three levels, and to set a maximum of five. An example of how “Other” can be used to reduce category clutter is shown below. Regularly review your “Other” categories for clusters that deserve their own categorization.



**Look at some basic examples.** You can create whatever categories work for your operations. Some basic examples include when supporting hardware-type assets, you can use the asset name as one level and all of the asset components as a sub level. When supporting applications, you can include categories such as installation, printing, error types, licensing, permissions, documentation, and reporting.

When supporting services, you can include categories such as how to, account creation, and password reset. With BYOD creating a more diverse support environment, for the category Phone, for example, you may give categories to the two or three most common phones, while grouping the rest into an “Others” category.

From there as you review tickets you can start to see trends where it might make sense to add the more commonly-reported phones, which can then spur knowledge articles and templates to automate solutions for the most commonly documented issues.

**Test your categories.** After you come up with a draft of categories, ask the support staff to try to categorize a day's worth of incidents within the structure. If they struggle to do this, work with them to create better solutions. This process helps you to target missing items, poorly defined categories, ambiguities and other problems within your category tree.

## Add value with rule groups, approvals, and scripts

Once you feel confident with your category structure, use this as the starting point for a value-add pass in which you look for ways to gain efficiencies through embedding elements such as rule groups, approvals, and scripts.

Again, your help desk representatives and other stakeholders should prove a great resource in exploring how to add more value to your system. Possibilities include:

**Rule Groups.** Associate a rule group with a category so that rules will be applied whenever the category is selected for a work item. The crash of a mission-critical server will trigger an immediate response, while the request from a C-level executive requiring help formatting a spreadsheet could trigger someone with corresponding expertise.

**Approval Cycles.** Associate an approval cycle with a category, so when an approval cycle is in effect most work item functionality is disabled until the cycle is complete. For each item that requires approval, define who the approver is by job title, and specify whether multiple levels of approval are required—and if so, each approver and whether an automated workflow would send it to all approvers simultaneously, or sequentially.

**Knowledge Entries.** Associate categories with knowledge entries for targeted knowledge searches if you are using an end user portal.

**Call Scripts.** Associate a call script to display when a category set is selected to provide consistency and completeness of messaging across your help desk efforts.

**Custom Fields.** If you need to collect a specific type of information about a category, set up a custom field to appear when a category is selected.

**Others to Notify.** Associate an Others to Notify list of customers and support representatives not directly involved in the incident, problem, or change process to be sent notifications and correspondence whenever the category is selected. For example, you could configure notifications to be sent to a different department whenever an incident is created with a server category.

**Skill-based Routing.** Associate support representative skill levels with categories. After a support representative classifies the incident, problem, or change and selects skill-based routing, a dialog can display the category levels selected for the incident for routing.

**Correspondence Templates.** Associate a correspondence template to appear in a list of categories to simplify and expedite communication.

**Workflow and Auto-close Templates.** Assign categories to workflow and auto-close templates. For example, you could create the following category set for tracking new employee setups: Administration | New Employees | Workstation Setup.

**Surveys.** Configure surveys to be sent after incidents with a specified categorization are closed. This allows you to monitor customer satisfaction.

**Reporting.** Use categories in reporting for supporting the key performance indicators, metrics, and other data required by the help desk and beyond. At its most basic level, reporting helps identify the assets, applications, and other areas that cause high volumes of customer calls.

John Stimson, Senior Manager at iSupport, provides this insight into the value of considering reporting when creating categories: "The ones who are typically concerned with trying to get information back out of the system by way of reporting and historical searches are typically folks at organizational levels where 'I don't know...' isn't an acceptable answer."

**Automation.** A well-crafted category tree with integrated rules provides a great foundation for creating automations. Once a specified condition has been met, rules can trigger an e-mail notification, alert, or some other action. Automations can prove especially powerful when integrating the help desk to other organizations.

## Integrate the help desk with other organizations

A great help desk system can provide value throughout an organization. The same concept of workflows and automations you create to bring efficiency to your help desk can also prove valuable to HR, Facilities Management, Customer Service, and a range of other service-oriented functions.

Stimson notes: "There's a familiar pattern of help desk solutions starting within IT and then branching out to serve other organizations as people see the capabilities in one area, and realize how the benefits could be extended to their own area as well."

The two classic examples are HR and Facilities, simply because there is already so much interaction as they work to serve internal customers. Hosting HR, Facilities, and other organizations within the same help desk solution—given an efficient categorization system, opens the door for cross-functional automations, in addition to rich reporting.

Automations could provide correct sequencing of events so that, in the case of a new hire, a series of tickets could be generated that would automatically:

- Notify Facilities that a new desk and chair was required in a specific space.
- Upon completion of that ticket, the system could automatically generate a ticket for the telephony group to deliver a desk phone.
- Upon completion of that ticket, the help desk could be notified to deliver a computer (now that there is a desk to place it on). Role-based rules from HR could dictate the applications and network access that the newly configured computer would include.
- Another ticket could request provisioning office supplies to the office so that all was ready to go on the new hire's first day of work.
- And if that employee found their office to be either too hot or too cold, they could log on to the help desk portal (or pick up their phone) and open a ticket that behind the scenes would be forwarded to the HVAC team.



- The same systems could also generate an automated reminder to have someone from HR drop by at the end of the first week to see how things were going.

The possibilities go on. A foundational element is a category structure that supports embedded business rules, approvals, and automation.

## Enhance categories with custom fields

A solid help desk solution should support the use of custom fields. The ability to customize fields should be considered during the category creation process because customization can eliminate the need for excessive categories. Custom fields can also help capture data for reporting—providing extra granularity to your categories.

Rather than using a fifth layer category for Install | Repair | Replace options, you could simply apply these as a custom field for equipment or other items that might be subject to the three decisions. This frees you from

deploying a 5th level category that would only be relevant for a small subset of categories. Because custom fields can be reported against, the information is captured so you could generate reports to see what was being repaired or replaced.

Custom fields should be used sparingly, though. Be sure you aren't cluttering forms and confusing users by collecting non-relevant information. When needed, though, you can deploy as many custom fields as needed, and they should be able to support user-friendly elements such as radio buttons, checkboxes, multi-select, single select, drop-downs, and free-form text.

Multiple fields may be helpful when supporting troubleshooting tickets. And the fields should be easy to create and support immediate deployment in case you identify areas where you want to collect more information.

You can also use custom fields to deploy tips and tricks if you identify recurring problems that can be proactively solved with guidance.

## Keep your categories relevant and renewed

Earlier we noted that categories aren't written in stone...that what is created today can be tweaked tomorrow. And actually, it isn't just that categories can be tweaked. It's that they should be tweaked, on a regular basis.

The idea is to regularly monitor your category structure to see if some categories or hierarchies can be improved—or perhaps removed. You want to keep your system in pace with changing needs and workflows. You can add granularity or condense. You can add new supported software and hardware, as well as remove products that have been removed from your IT environment.

"You want to keep your category tree as clean and tidy as possible," Stimson says. "The fewer choices presented to the user, the more likely they are going to make the right choice. So you don't want to have unused debris sitting out there cluttering up your categories."

Ryan Terrell, iSupport Vice President of Sales, agrees with the need to keep things clean with periodic reviews of the system. "As cool as they were at the time, today you probably don't support many Palm Pilots or Handspring Visor Deluxes," Terrell says. "So if you run across lingering categories, you want to remove them."

However, Terrell cautions it isn't enough to just remove the category. You also need to remove all of the resources that may have been supporting them such as FAQs, self-service articles, support rep skill sets, and templates.

Growth can also introduce the need for change. If your help desk solution is expanded to serve HR or some other group, you will likely want to make these new top-level categories, as they will have their own tasks to describe and manage.

"The help desk is an ever-changing piece of a growing organization that needs to learn, improve, and adapt," Terrell says. "Put processes in place to manage your categories regularly, and you'll be well on your way to helping your system become ever better."

## Chapter 3: The Importance of Infrastructure Analysis

“Coming together is a beginning; keeping together is progress; working together is success.”  
Henry Ford, American automotive pioneer

Infrastructure makes the world go round. From the tectonic plates upon which the continents sit, to the industrial revolution, to the exploration of subatomic particles at CERN, it's all about infrastructure.

Of course all of this means that every IT professional tasked with designing, assembling, managing (or even thinking about) infrastructure deserves to take an extra-long lunch today. Tell your manager you saw it in writing.

Henry Ford, the American automotive pioneer, could have been speaking of IT infrastructure when he said, “Coming together is a beginning; keeping together is progress; working together is success.”

Infrastructure analysis is critically important prior to deployment of a help desk solution because infrastructure can be so complex, and because a great help desk solution should be tightly integrated with it.

“Infrastructure is not just the physical hardware, the software that the hardware runs, or even the network that keeps the bits flowing,” writes John Stimson, Senior Manager at iSupport. “It’s the entire environment that permits computing in your environment. Sure, it can be simplified for the sake of conversation and troubleshooting, but infrastructure needs to be considered and treated as one dynamic, ever-changing entity. This interconnected, interrelated, dependent relationship must be understood in order to correctly implement new applications or troubleshoot existing ones.”

As we explore the interconnected realm of infrastructure we'll look at some basic elements such as:

- Considerations for on-premises, cloud-based and hybrid deployments
- Evaluating current hardware and network capacity
- Integrating with existing Active Directory, email, and other infrastructure resources
- Avoiding client-side software
- Managing updates
- Asset configuration management
- Monitoring hardware
- Application customizations
- Support for mobile devices, including BYOD
- Protecting data and intellectual property
- Building for future expansion

### On-premises, cloud-based, and hybrid deployment considerations

One of the big recurring questions most IT groups face today whenever contemplating a new deployment is: Cloud, on-premises, or hybrid? This question is especially pertinent for help desk solutions because they can now be seamlessly integrated with your existing infrastructure—including essentials like directory system, authentication, email, asset management, and a range of data stores.

Some organizations, especially newer small companies and startups, have made a commitment to a total-cloud infrastructure. Adding a cloud-based help desk application to an existing instance hosting other services is simple when you are already 100% cloud. Other organizations want to selectively add cloud-based resources to an on-premises infrastructure. This is best accomplished using a hybrid cloud approach—creating a VPC to serve as a trusted tunnel between your cloud-based applications and your on-premises infrastructure such as Active Directory, CRM applications, and databases.

Hybrid cloud deployments support a number of configurations. Through the VPC you could connect a cloud-based help desk application to on-premises Active Directory and email. Or you could use your VPC to connect cloud-based

email and help desk applications with your on-premises Active Directory and other resources. In addition to a VPC, you can connect to a private—or non- shared—cloud-based resource. Unlike public clouds, with a private cloud you aren't placing your data on hardware shared with others.

Ownership control and integration with existing infrastructure factors form the basis of some—but not all—of what to consider with cloud-based, on-premises, and hybrid solutions:

**Regulations and policies.** For some organizations, especially those in healthcare and financial services, regulatory issues (such as HIPAA in healthcare) or internal policies may include privacy and data residency requirements. Be sure to consider rules for the location of a cloud provider's data centers, including backups. Regulations such as HIPAA may require a business associate agreement with the cloud provider, software vendor, and other third party vendors to ensure the safety of the data. If business associate agreements are required, someone will be needed to maintain those agreements.

**Authentication and security.** Security should be a mission-critical element of every decision IT makes. As mentioned earlier, a virtual private connection (VPC) can be established for authentication to cloud- based services, but any third party application integrations may add to legal complexity if there is a data breach. If you want to take advantage of your on-premises Active Directory (or other LDAP directory system) for authentication, security, and providing access to role-based resources, and you want to have your help desk application on the cloud, you'll need to involve your security team with configuring the connection.

**Service monitoring.** While cloud-based solutions may provide basic service monitoring, you may want to have deeper control of your monitoring and reporting with a feature such as iSupport's Cloud Monitor for customized visibility into your operations.

**Capital expenditures.** One of the primary attractions of cloud-based deployments, especially for smaller organizations, is the absence of upfront capital expenditure. You don't have to purchase a new server and provision it with software and licensing.

**Recurring service fees.** While cloud-based services don't require capital expenditures, the recurring monthly service charges can—especially after a few years—eclipse the cost of deploying on your own hardware and purchasing a one-time license.

A help desk solution should be flexible enough to support cloud-based, on-premise, or hybrid deployment, including support for deploying initially on the cloud and then migrating seamlessly to on-premises. This can save you time and money should you ever decide—or for regulatory or internal policy changes—be required to move from the cloud to on-premises. Deployment flexibility also benefits large organizations that want to get up and running on the cloud for testing and early deployment, while acquiring and provisioning hardware for their on-premises deployment.

## Evaluate current hardware and network capacity

Whenever planning for a new installation or upgrade, it's wise to perform an infrastructure evaluation and review your current bandwidth capabilities against projected needs. Consider the following.

**Hardware.** An old server might be sufficient for a proof of concept test—as long as it meets the CPU and memory requirements of the application being tested. But when it comes time to deploy, you want to have everything going your way.

"Application uptime and performance are often used to measure an application, and performance is the most commented on— especially from the perspective of the end user," notes Robert Alexander, Assistant Operations Manager at iSupport. "Meeting just the suggested minimum requirements, although perhaps acceptable for evaluating an application, when left in place will in most cases come back to haunt you in the long run."

This isn't to say that, if you have a great server with plenty of life and technology left, you can't use it. You just need to make a solid evaluation of the demands that will be placed on your system and the ability for your various infrastructure elements to support the performance you desire.

"Technology advances to offer better performance in hardware; software then advances to take advantage of it in order to offer a richer experience or greater capabilities," Stimson says. "There is a symbiosis between the two, and only the system engineer who is familiar with all the numerous factors at work within an organization can make the decisions for the appropriate trade-offs."

**Bandwidth.** The best help desk applications incorporate a web-based browser—rather than a client application—to interface with the back end system. This means your deployment can benefit by making sure you have sufficient bandwidth, and a robust web server, to handle anticipated traffic.

If insufficient network bandwidth impacts the delivery of the user interface, your new system can be unfairly labeled as slow. Simply throwing more memory into the equation post-deployment is a common response. This can't help, though, if the actual cause of latency is a bottleneck somewhere else on the network. Alexander notes: "If you're deploying an enterprise-level application, you need enterprise-level networking behind the scenes to support it."

## Integrate with Active Directory and other resources

When considering help desk applications, be sure to analyze how well it can integrate with your existing infrastructure. Deploying a solution with its own proprietary messaging, or that's based on the Linux operating system, could prove an expensive and complex systems integration task if the rest of your infrastructure is based upon the Windows platform.

Take advantage of the investments in physical infrastructure—and IT expertise—that you've already made. When purchasing a help desk system, you don't want to be forced to purchase additional software that duplicates what existing assets already provide.

"Integration goes beyond leveraging Active Directory and other resources," says Daren Nelson, iSupport CEO. "For me integration also means leveraging every single employee that I have on my staff who has earned Microsoft certifications, and has worked in a Microsoft infrastructure environment, developing so much valuable knowledge."

Consider the following:

**Active Directory.** Active Directory plays such an integral part in enterprise infrastructure that even if a help desk application claims to be Active Directory compatible, it is good to verify the depth and seamlessness of its integration. It should include customer, support representative, and asset synchronization, as well as individual attribute mapping and directory node exclusion.

**Email.** It is essential to ensure that your help desk application will seamlessly integrate with your existing email infrastructure because email serves as a critically important communications channel to and from the help desk.

From an incoming email standpoint, your solution should support the spectrum of email protocols and platforms, working with SMTP, POP3, and IMAP to receive messages from Gmail, Outlook Exchange, IBM Domino and Lotus Notes, and other systems.

Tight integration between a help desk application and email—as well as Active Directory and HR applications—should give you the ability to automate processing of incoming emails for incident creation and triage, and automate responses through outgoing email.

**Asset management.** If you already have an asset management tool in place, you'll want to make sure that your help desk application can integrate with it. Choosing a help desk application that was created using the Microsoft .NET Framework makes it especially easy to integrate with Microsoft asset management tools and Windows management instrumentation. Building on the platform also makes it easy to tap into SQL Server databases and reporting tools.

**Remote support and other third-party applications.** Remote support applications such as Bomgar and Citrix GoToAssist can be important diagnostic and repair tools for a help desk operation. If you already use remote support applications, or are planning to do so in the future, you will want to ensure that your help desk application integrates with the tools of your choice. If you want to use SharePoint Server or any other products as part of your overall help desk infrastructure, verify the ability to integrate from your help desk operation.

## Avoid client-side software

You can make life easier from the standpoint of deployment—and ongoing maintenance—by seeking a help desk application that provides a 100% web-based front end. A web-based solution frees organizations from the ongoing task of deploying, and updating, client-side software.

By only requiring a browser, your users—with proper authentication—can log into your help desk from their laptops while on the road or at home, from tablets in the field, or from smartphones, including BYOD. A browser-based solution also means you don't have to send iPhone and Android users to online sites to update their apps, because

they don't need an app—just a browser. All of this makes it far easier to control and optimize the user experience without having to touch client devices.

## Manage updates

When considering help desk applications it is good to analyze the completeness and efficiency with which vendors manage software updates. As noted above, a good first step is to go with a solution that is designed around using a 100% web-based front end— as this removes the time sink of updating client-side software. On the server side, you should search out a vendor who has a comprehensive program for testing and releasing updates for automatic deployment on your end.

You can learn a lot by simply asking a vendor: What is your update solution? The answer should begin with: Glad you asked! The more complete answer should include basic elements such as:

**Proactive vigilance.** A help desk solution that is integrated with your back end infrastructure requires vigilance on the part of the vendor to monitor for updates up and down the software stack. Whenever a service patch is issued for the Windows operating system, for example, or whenever SQL Server or Exchange are updated, they must be tested to ensure that the software updates don't adversely affect the help desk application. The same goes for browser releases—whether for Google Chrome, Mozilla Firefox, Apple iOS Safari, Android, or any other supported browser. The same vigilance is required going the other way. When the help desk software is updated, the vendor needs to automatically scan your server to ensure it's running the correct and properly patched OS and supporting applications.

**Thorough pre-release testing.** Your vendor must have a solid pre-release testing program. Whether testing their own help desk software or testing a new operating system or application upgrade, you need to be able to trust their pre-release testing when they release the code to you for deployment.

**Tight communications.** If a new browser release or OS patch has the potential to create a problem with your help desk software, the vendor should immediately communicate the issue, even if it may be a day or more before they can release updated code or a work-around.

**Automatic deployment (with your click).** Your software vendor should provide auto-deployment of software upgrades so you don't have to download an installer and manually execute. When working with a vendor that has thorough pre-release testing and tight communications, you should be able to respond to the alert that an update is available by simply clicking OK, and let the auto update do the rest. Auto update should also include a feedback mechanism so that an alert is issued if the process can't be completed, triggering troubleshooting and remediation.

## Manage asset configuration

Your help desk application should support a configuration management database (CMDB). Ideally the CMDB is internal to your help desk application, and if not it should integrate with a third party solution to provide a repository of information related to all the components of your information system. The CMDB can serve as a record for the authorized configuration of the significant components within your IT environment.

The CMDB can be used to track the assets, services, and other resources that are crucial to your organization's operation, which helps you understand the relationships between these components and track their configuration.

Additionally, CMDB information should provide the option for graphical display showing relationships so you can immediately answer questions about events—planned or unplanned—that may impact aspects of your company's IT operations.

Your solution should support key elements such as:

- Asset owners and asset bar code printing
- Predefined and custom views and reports
- WMI and SNMP scanning methods
- Descriptive fields such as model, location, and manufacturer
- Custom fields
- Groups and types for establishing asset relationships and access

- Dynamic and scheduled scanning for IT assets with baselines and comparisons
- Device monitoring
- Audit history
- Software license tracking and unit count

## Take advantage of existing infrastructure

While cloud-based resources have reduced the up-front costs for new organizations to deploy resources, organizations that have already invested in infrastructure should be mindful of the value they've already got in place, and search for solutions that can be deployed with it.

While this seems like common sense, some organizations, swept away by cloud messaging, ignore the substantial value they have at their disposal and send what can be critically sensitive data off to a cloud-based solution. For smaller organizations, say less than 50 employees, a cloud-based solution may make sense. Yet there are important questions to ask your cloud vendor, such as: Where will my data be stored? In what geographic and political/jurisdictional realm will it reside? How will it be secured? How will our intellectual property be protected?

Some cloud-based solutions, while offered free of charge, have a revenue model based upon harvesting the information you store for analytics. If you've developed efficient workflows, you might want to keep them as a competitive advantage rather than leaving them open for a service provider to analyze, package, and re-sell to potential competitors. This raises questions such as: Who owns my data? What are they allowed to do with my data?

Cloud-based solutions can also create problems when it comes to integrating with your other resources. If you've assembled one cloud product that was written in Ruby on Rails, and another from a second vendor who wrote theirs in Python, integration with your Active Directory, email servers, or ERP systems could be problematic.

So, if you've already invested in something like a Microsoft shop and have invested in human resources with the knowledge to efficiently operate and secure it, there is value in taking advantage of your existing resources.

## Monitor hardware

The ability to monitor hardware should be built into your help desk application, or at least readily available through integration with a third-party monitoring application. You need to be able to monitor CPU usage, memory utilization, and disk space in real time.

Your application should give you the ability to set your own thresholds to trigger automatic alerts, and log the events. Of course the monitoring system, when built into the help desk system, should be able to automatically create a ticket from the event that is routed to the appropriate group for corrective action.

## Customize the application

A major consideration should be the ease—or difficulty—with which your help desk application can be customized after deployment. You want a system that is flexible and so easy to use that you can create new or modify existing forms, reports, configurations, and other elements on your own—without having to spend the money and time for a consultant to do it for you.

Ideally, your help desk solution will be organic—something you can easily evolve and customize to meet the changing needs of the organization. Some cloud-based software as a service (SaaS) applications, while providing a range of tunable options, can't actually be customized to meet your precise needs in the same way that a robust on-premises solution might.

**Look for great UI, not custom code.** One question you might ask during the evaluation process is: How much of your revenue comes from consulting services? Some companies earn more than half of their revenue from having their customers pay to customize software that is too poorly designed and rigid for self-service customizations. Another good test is to sit down with a list of customizations and simply say: "Show me how to do this."

What you want to see is a well-designed user interface that makes it easy to customize the application to meet the needs of your organization—as well as the needs of individual users. What you don't want to see is someone having to write custom code.

**Look for ease of deployment.** Some help desk solutions are so cumbersome and difficult to integrate with your underlying infrastructure that organizations can incur consultant fees just for setting the product up for an evaluation. With a start like that, you could expect additional consulting fees for moving into full production, as well as for customizations.

Ask the questions early: “Is this something we can set up ourselves, or will consulting services be required?” This isn’t to say that there can’t be substantial value to be found in an experienced consultant working with a great product. The sign of a great consultant with a great product will be an attitude along the lines of: “Let me show you how to do this. It’s easy. And be sure not to miss this feature because you’ll love it.” In cases like this, the consultant is there to give you a flying start, not to become a recurring expense.

**Reporting and portals.** Your help desk solution should have robust (yet flexible) reporting capabilities built into it. And it should also integrate seamlessly with data stores relevant to help desk operations and reporting. If your solution doesn’t include reporting, or doesn’t include sufficient reporting capability, it can be expensive to bring in a systems integrator to try to plumb in databases and reporting tools after the fact.

Portals have become a popular gateway into help desk services. Ideally your help desk application will have gateway functionality already built in, just waiting to be populated. The alternative is to pay a third-party to create a portal and integrate it into the application.

**Avoid forks.** It’s important to verify prior to purchase that customizations you make to your help desk application won’t create a code fork that interferes with future upgrades. Your help desk application should be architected so that customizations you make—ideally through a robust and user-friendly UI—will survive future updates.

Some organizations go through the agony of having to first pay a consultant to create customizations, and then later find that they need a consultant again to create workarounds after the application code has been updated.

“Even when a company was working with the software vendor, we’ve heard of cases where the customer had to first pay the vendor to create customizations, and then pay the vendor again when the application was updated because the customer was no longer using an out-of-the-box application,” says Darren Grigg, Product Manager & Technical Sales Engineer at iSupport. “Needing a specialist to create customizations for you is the sign of a poorly architected application. It is also something that can inspire the frustrated customer to search for a better help desk solution.”

## Utilize support for mobile devices (including BYOD)

With the whole world seemingly moving to mobile, and the tide of bring your own device rolling through most enterprises, you’ll definitely want your help desk to provide easy—though secure—access for mobile users, including BYOD practitioners.

The best way to do this is through a web-based design philosophy that eliminates the need for client-side applications. Client-side solutions only become more complex with mobile, as they require you to create, distribute, update, and re-distribute mobile apps specifically designed to support Apple iOS, Google Android, and other mobile platforms.

Whether your help desk application supports 100 users or 100,000 users, you don’t want to depend upon everyone dutifully downloading the latest release of your mobile app—nor do you want to manage continuing compatibility with the vast backlog of earlier device and mobile OS releases.

As we’ve noted earlier, deploying a help desk application with a 100% web-based front end saves you from the expense and agony of updating client applications. Whether working from the desktop, laptop, tablet, or smartphone, all a user needs is a browser.

## Utilize support for social media

In much the same way that organizations have embraced BYOD, they are finding big opportunities for integrating social media into their traditional communication channels. When considering help desk applications you should ask whether they are pre-wired for social media integration.

It all comes down to providing users with a spectrum of communication channels. Some users enjoy Facebook as a communications tool. Others enjoy the brevity and immediacy of Twitter, which might be an efficient way to communicate: “Printer on 2nd floor is out of toner.”

Along the way, you should ensure that your help desk solution also supports chat functionality. Some users love chat because it is more immediate than email, yet less formal than a phone call. The common thread is to provide a range of integrated communication channels.

## **Protect data and intellectual property**

Earlier we looked at some considerations for cloud-based help desk applications and on-premises deployments. At this point we'd like to examine an area which is largely overlooked in the discussion, which is protecting data and intellectual property.

While a tightly administered hybrid private cloud deployment may be able to provide you with acceptable security, many cloud-based help desk vendors offer their products on a multi-tenant basis, storing your data along with everyone else's. And some of these vendors offer free, or low-cost, cloud hosting with a provision that they are able to search and analyze your data looking for ad-selling opportunities, or for other data analytic projects—such as developing branded best practices. Indeed, some offer survey applications you can use with your own customers—while the answers are harvested by the cloud-provider to fuel their own analytics and reporting.

How the information is used is likely to evolve. If your cloud-based help desk vendor sees you have a lot of Dell computers, they can sell this information either to Dell—so they can more precisely target you with offers, or they can sell it to another hardware vendor who can precisely aim ads your way. Apart from the annoying ads, and even if you pay more to opt out of the ads, a deeper analysis of your data, compared to that of other hosted customers, could generate high-value metrics about your operations that could be sold to others.

“When did businesses decide it was okay to start giving away all of their data?” asks iSupport CEO Nelson. “Even if you're not giving up individual customer names, in some cases you're giving the cloud provider a right to look at general trends that are happening within your company, and to use those trends and metrics to sell to others, some of whom may be competitors. If you have developed a better way of doing business, you don't want to just give away what amounts to intellectual property that provides you with a competitive advantage.”

Somewhere along the line, people got so hung up on the cost of software and the cost of infrastructure, that they signed away (probably without knowing it) their proprietary data just to save a few dollars here and there. This is information that used to be guarded like the crown jewels. Nelson notes: “Nobody wants to go to their CIO and say: “We've just given away all of our infrastructure data so our cloud provider can sell it back to us and others.”

A related question is ownership of data stored on the cloud, as well as jurisdictional issues based on a data center's global location. While cloud-based resources can be effective augmentations (or wholesale replacements) for IT infrastructure, it's essential that you have a clear and deep understanding of how your data and intellectual property will be protected.

## **Build for future expansion**

Startups and other small companies will often have limited resources that must be carefully allocated to fuel growth. The advent of cloud-based resources provides a way to forego the costs of purchasing, provisioning, and managing IT infrastructure. For someone creating the organization's first help desk, this may translate into a cloud-based solution.

Fortunately some vendors provide cloud-based versions of their software that can be seamlessly migrated—at a later date—to on-premises infrastructure. This kind of deployment flexibility allows you to enjoy the immediate savings of a cloud-based solution while preparing the way for future on-premises deployment and expansion.



## Chapter 4: Self-Service Strategies for Help Desk Portals

“The only important thing about design is how it relates to people.”  
Victor Papnek, American designer and educator

A well-designed help desk portal, brimming with guidance and knowledge, is a powerful asset for the entire organization. The great challenge, at least initially, can be driving users to the portal so that the help desk—and the wider organization—can realize the great efficiencies that come from users resolving their own issues, whenever possible, rather than picking up the phone for an expensive 1-on-1 conversation.

Success, to a great extent, is dependent upon great content framed within a welcoming and easy to navigate design. “The only important thing about design is how it relates to people,” wrote Victor Papanek, the late great American designer and educator. Were he working today, he’d likely say that part of great design is allowing many pathways to the gateway of wisdom that is your help desk portal.

There are big benefits for organizations that get this right because creating an inviting self-service portal can decrease help desk costs.

“The underlying business need for customer self-support is simple: any way you can support your customer that doesn’t involve a phone call is cheaper,” writes Daren Nelson, iSupport CEO. “If I can use email, discussion boards, knowledge bases, chat, Twitter, Facebook, LinkedIn, etc., it will be less expensive than if I have to pick up a telephone.”

At the same time, providing rewarding self-service experiences can also boost customer satisfaction as users feel empowered to resolve their own issues, and perhaps even help others.

### The importance of making it easy

When it comes to help desk software, you want a solution that is powerful, extensible, customizable, and designed from beginning to end to be easy to use.

Working with an extensible help desk solution means you can integrate with a wealth of other organizational services and infrastructure, including Active Directory to support a seamless, single sign-on, transition to your help desk portal. Active Directory integration should also mean your help desk application already knows who the user is, what system is on their desktop, what company-issued laptop, tablet, or smartphone they have. This makes it easier for users to self-serve because they don’t have to type in such data.

Your help desk solution should be customizable to help you create help desk offerings that meet specific needs across diverse sets of users. From a design standpoint, your help desk solution should make it easy for you to use the same color palette, look & feel, and navigational elements used elsewhere across your organization. This makes for a seamless transition to help desk resources, and good design can also encourage self-service exploration and discovery.

### Use automation to make it easier for users

Automation provides a great way to make things easier for your help desk users. Regardless of the path that users utilize to contact the help desk—whether by phone, email, a portal, or some other channel—well-integrated automation makes life easier for the user by harvesting Active Directory information and guiding users through forms that can begin the population of incidents. This, in turn, provides guidance for triage and routing.

“Converting an email to a ticket is a courtesy for whomever might not feel comfortable filling out a form on a portal,” says Darren Grigg, Product Manager & Technical Sales Engineer at iSupport. “Supporting chat is great for those who don’t like to use the phone.”

The same Active Directory integration and forms automation that makes life easier for on-site users should also be extended to those accessing help desk resources from a smartphone or other mobile device.

## Provide multiple portals

Self-service can also be boosted if your help desk solution supports—and makes it easy to deploy— multiple portals to make it easier for multiple user populations to tap into your same back end of knowledge and services. Multiple portals can enhance use of self-service by providing custom entry ways such as:

**General Help Desk Portal.** Your general help desk portal should provide an inviting, user-friendly front end to your suite of help desk services and resources. Have a problem? Click here, and a ticket opens in the background, pre-populates information from Active Directory, and walks the user through basic questions to categorize their needs. The same portal should also make it easy for the user to explore the problem on their own with an easily spotted global search bar, and easy access to FAQs, knowledge base articles, discussion groups, or chat.

**Specialized Services Portal.** A custom portal can support groups with specialized needs, including users of specialized applications such as customer relationship management (CRM), enterprise resource planning (ERP), or supply chain management (SCM). Such custom portals can greet users with an interface geared to meet their particular needs.

**Facilities Portal.** If your help desk solution is easily extendable to other departments, you can create a custom portal for facilities, making it easier for users to request a new chair, or to ask for an HVAC adjustment.

**HR Portal.** Users wanting to check on vacation time, look at healthcare options, or sign up for a class, will find it easier to do with a dedicated HR portal. Of course all of these functions can also be accessed from your main site, but from a navigational standpoint dedicated portals can provide a nice front end to services.

**External Portal.** If your company sells products or provides services that you support through your help desk software, a separate portal can be used to provide an external entry point geared to customer use, and designed to enhance customer satisfaction.

For all portals, it's important to use an inviting design, which doesn't overwhelm the user with choices upon arrival. "A good starting point is to assume that everyone—except your more technical users—may feel lost upon first arriving at your site," says John Stimson, Senior Manager at iSupport. "This is why you need a clean and inviting interface that minimizes immediate choices until the user starts drilling into something on their own, and discovers how easy it is to search for additional information."

## Support multiple channels

Your help desk represents a house of knowledge, and to maximize the number of people who are able to find value within that knowledge, it is good to provide multiple pathways to your open door. The people you support have many different learning styles and communication preferences. The more options you provide, the more likely you are to boost rates of help desk self-service.

"Providing multiple support channels increases the reach and productivity of your support organization," Nelson says. "Different people like to communicate in different ways." Offering multiple channels also enhances productivity by providing alternatives to the traditional phone call. Nelson notes: "A good support rep can handle two or three chats simultaneously whereas it is almost impossible to support more than one person at a time on the phone."

The spectrum of communication channels you provide users can include:

**Phone.** Phone support is the traditional channel for contacting the help desk. An interactive voice recognition system can guide callers through an initial branching question set to help expedite call routing. Your help desk solution should incorporate scripting support to help your agents on the help desk side walk users through a branching/troubleshooting analysis.

**Email.** Another traditional communications channel, email should be well integrated with your help desk efforts, ideally in a solution that can grab email content to help fill out ticket information.

**Texting.** Millennials, and similarly minded users, in many situations prefer texting to phone calls, which means help desk solutions should support texting—ideally with the ability to parse requests to start the ticketing process.

**Portal Forms.** Portals can enhance the efficiency of help desk operations, especially through use of forms in which users are led through a branching algorithm collecting information about their problem. While the completeness of forms will vary by user, they can all be used to help in automating triage and routing alerts and decisions.

**Portal Live Chat.** A help desk portal solution should be able to integrate seamlessly with a live chat function, which many users prefer to using the phone or email. Live chat provides the immediacy of phone contact, with the convenience of the user being able to control the pace, and the comfort that many have developed for text-based communication.

**Knowledge Base.** A portal also provides a good home, or at least access point to, a living collection of FAQs, how-to articles, and other information on the identification and resolution of problems. While a knowledge base is a major tool for your help desk personnel, it also provides a wealth of information for users inclined to explore on their own.

**Discussion Forums.** Discussion forums, which should be supported by your help desk system, pay nice dividends in that users and super users can gather to tap into (or share) acquired wisdom to solve their own problems. This removes load from help desk personnel, who can monitor and contribute to discussion forums.

**Twitter.** While Twitter isn't designed for large content transfer, it can be a useful channel of communication to support and monitor. Twitter could work in situations such as: "Email's down." Or "Printer on 3rd floor is out." Or, if your help desk deployment is extended to help facilities with support, someone could tweet: "Card reader out on Building 2."

**Facebook.** Yet another communications channel to consider is Facebook and other social media. This follows a strategy of extending communication options to those who like to work with social media platforms.

**Mobile.** All of the options above should include interfaces or landing pages optimized for mobile applications. The ubiquity of mobile devices means that more and more workers are reaching for a smartphone, whether in the field, at home, or walking down the corridor.

## Plug into the power of social

Supporting social channels, as noted above, can pay surprising dividends in boosting self-service. Support for social can help you create a community around a portal, where users share information, and enjoy exploring.

"Think about why sites like Yelp are so popular, and why people spend the time to post thousands of comments under news articles and debate each other on Facebook," says Ryan Terrell, Vice President of Sales at iSupport. "People like the social interaction, they love to be heard, and they see a value in open conversations. Adding these social opportunities as an element to your service portal gives you a much better chance of success."

## Build upon a powerful and flexible foundation

So, self-service begins with a great user interface, and multiple channels of entry. Meanwhile, behind the scenes, self-service is enabled through use of a powerful and flexible foundation. The more robust your help desk application, the more self-service options you'll be able to offer, and the better you'll be able to draw these offerings together into a seamless and rewarding user experience.

Your help desk solution should be so easy to use that it can be deployed out of the box, with virtually no configuration. Additionally, you want your help desk solution to be designed with the understanding that business processes vary from company to company, and provide you with the flexibility and extensibility to configure custom forms, custom workflows, custom integrations, and complex business rules.

A well-designed help desk solution combines the attributes of easy deployment with extensibility and customization so that you can craft it into the ideal solution—without having to spend the time and money on an outside consultant.

## Utilize a robust feature set

To gain the power you need to make things seamlessly easy for self-service users, while providing an efficient feature set to help your service organization thrive, organizations need a help desk solution that provides a robust feature set. Some of the essentials you should look for include:

- Strong end-user support tools
- Incident, problem, and change management
- Powerful workflow rules and automation

- Active Directory and LDAP integration
- Third-party remote control integration
- Email processing
- Real-time and scheduled reporting
- Discussion forums with polling and voting
- Survey management
- Social media integration
- Full support for mobile devices and smart phones
- Asset scanning and reporting
- Asset monitoring
- Configuration management database (CMDB)
- Purchasing support
- Service level agreements (SLAs)
- Service contracts
- Service catalog

It's worth noting that something as simple as search is a user-friendly function that should be easy to spot on your site. "It is important to analyze who will be using your customer self-service site and give options for each type of user, but the key component is the search option," says Lisa Kimery, Senior Documentation Specialist at iSupport. "It always frustrates me when I am on a web site that doesn't have one."

## Look for flexibility to support workflows and customization

Self-service is greatly improved if your help desk solution gives you the flexibility and automation to support workflows and customizations that mirror the business practices and policies of the wider organization. The ability to craft your own workflows and customizations enhance the internal operations of the support group. These same behind-the-scenes efficiencies make for a more intuitive and user-friendly user experience that encourages and rewards self-service.

Common workflows your help desk solution should support include:

- Ticket creation from email and social media
- Manual and automatic ticket assignment based on location, skill, and workload
- Ticket update and automatic response based on incoming email
- Ticket escalation
- Time-based business rules (SLAs)

Again, it's important that your help desk solution is designed to make it easy to create workflows and customizations as needed and to modify forms, reports, configurations and other elements on your own—without having to spend the money and time for a consultant to do it for you.

It is also helpful to use a solution that provides a 100% web-based front end—which removes the danger of creating client-side customizations which may need to be re-coded for product updates. A web-based client also saves you from the time burden and expense of managing and updating client applications.

## Market what you've built

First you build a great help desk site...then you invite the users. It's kind of like what Walt Disney did with Disneyland, when Disney noted: "You can design and create, and build the most wonderful place in the world. But it takes people to make the dream a reality."

Don't assume: "If you build it they will come." And if you've had a false start with an earlier, clunky system, your marketing efforts may need to be even better. Stimson puts it this way: "If the old application was difficult to use and frustrated your users, your new system will be haunted by the old until you coax them into seeing how much better the new one is."

**Avoid mandates.** The internal marketing of your new site is so important to driving use that, your support organization may want to work with your marketing group—as well as senior management—to come up with an internal marketing plan to drive users to your new platform. You want to attract users—not issue a mandate.

"The clients that I have seen most successfully promote a new support model did exactly that— they promoted it," says Terrell. "In the planning stage they went to upper management and sold the idea of the new self-service initiative. They asked for their involvement in making the new site part of everyone's regular work week."

**Use fun votes and discussions to attract users.** Terrell knows of one organization that came up with a brilliant way to drive users to the new site—not for help, but to vote on things of broad interest. "One success story started with the service team soliciting feedback on what park should be used for the company picnic," Terrell says. "Instead of creating an email chain they offered a link—to the new help site—where employees could cast their vote. Management participated and followed up with messages such as, "So far X location is leading with five days left to vote. Don't miss out on your chance to be heard."

The following weeks were staged with other topics where employee feedback was invited. Discussion forums were created, voting on topics was encouraged, and other resources were promoted. Eventually most of the organization had logged onto the new help desk site and gotten involved with it. Along the way, users got accustomed to going to the site, using it to vote and post comments, and getting a look at what else was up there and how they could use it.

"They didn't just tell people what to do; they showed them how the tool had value to them," Terrell says. "They gave them a reason to want to bookmark and return to the site. The fact that additional resources were continually added just made it even more valuable over time."

**Market continually.** Your marketing should be an ongoing effort. It can be as simple as including a link to your site on every piece of email you send and on every automated response. Announce new additions to your knowledge base library, or what's trending with FAQ use. Continue to push your site as the best place to host fun company polling and discussion groups. With ever more familiarity, users will feel comfortable turning to your solution for self-service help and exploration.



Content contributed by these good folks at iSupport Software: Daren Nelson, 24 years experience; Ryan Terrell, 18 years experience; Darren Grigg, 18 years experience; Lisa Kimery, 16 years experience; John Stimson, 15 years experience; and Robert Alexander, 15 years experience. iSupport has been providing IT help desk software and service delivery software since 1992. Hundreds of thousands of users rely on their flexible solutions to provide multi-channel help desk support to customers worldwide. For more information, call (888) 494-7638 or visit [www.isupport.com](http://www.isupport.com).

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