

Nobix JobQue® /X

Delivering the Best Value in Job Scheduling

WHITE PAPER – JULY 2008



001.925.659.3500
800.538.3818
925.659.3500
925.659.3599 fax
www.nobix.com

©2005 Nobix, Inc, JobQue, and JobRescue
are trademarks of Nobix, Inc. All other
trademarks are the property of their respective
owners.

Executive Summary

IT organizations are overwhelmed with the constant challenge of an ever-changing business environment. The pace and nature of business change necessitates that IT play a more integral role in the quick delivery of constantly available business processes and information to the right person at the right time.

Simultaneously, businesses struggle as recent profit growth has been sluggish, and in some industries profits have only risen to what was the previous low point in the past 40 years.¹ Accordingly, organizations are demanding improved return on highly scrutinized IT and other business expenses.

Today's IT environments are heterogeneous and in many cases disparate islands of computation. To ensure business users and processes have access to timely information, IT must ensure that cross-organization technology issues are detected and resolved without interruption to the business, and that IT jobs operate flawlessly. This heightened responsiveness of IT personnel and assets combined with better value IT investments are critical to the success of today's dynamic business organizations.

To achieve better responsiveness and return IT must:

- Simplify and automate core IT management functionality
- Invest in only what is needed
- Demonstrate quick returns

Reliable IT job scheduling is critical for overall IT management functionality. Nobix JobQue/X meets these challenges and allows the planning of long-and-short term schedules while also providing total control over job launching within a networked environment. JobQue/X is easy-to-use yet powerful IT job scheduling software that defines and schedules interdependent jobs in a heterogeneous IT environment. JobQue/X includes the *core functionality* required to execute the right software task at the right time to ensure proper business process operations. With JobQue/X, IT can facilitate a large number of complex business processes and associated interdependent IT jobs across diverse applications in multiple locations. Although job scheduling can quickly become a very sophisticated task, a job scheduler need not be an overcomplicated software product. Nobix JobQue/X is simple yet powerful and is up to 60% more cost-effective than the lowest price published by a competitor.

Simplify and automate core IT management functionality

IT job scheduling software executes the right software task at the right time to ensure the proper business process operations. Each day corporate IT environments facilitate a large number of complex business processes and associated interdependent IT jobs across diverse applications in multiple locations. Although job scheduling can quickly become a very sophisticated task, a job scheduler need not be an overcomplicated software product. Today's job scheduling products come in two flavors:

1. Simple yet powerful products: These job schedulers provide the core functionality that automates job definition, dependencies, calendaring, and reporting tasks to support even the most complex business environments. JobQue/X offers the core functionality found in most IT job scheduling software products but it is not over-engineered to include costly, less needed “bells and whistles.” For example, authorized remotes, in which any server can make its schedules available to any other server for execution, provides the ability to run accurate and consistent jobs with controlled dependencies.
2. Complex yet costly products: These job schedulers provide core functionality plus a variety of costly and less needed functionality such as sophisticated GUIs, graphical reporting capabilities, non-scheduled job features, and enhanced browser usability. Graphic reporting may be visually appealing; however the same information can be presented and just as useful in a straightforward text format as well. IT must be careful not to overbuy in these highly scrutinized times, and therefore must assess required functional versus ‘nice-to-have’ functionality.

Invest only in what you need

Competition from emerging markets and increasingly finicky consumers are creating unprecedented pricing pressures. Reduced prices are squeezing margins in almost every facet of business. Each and every functional group within a business is being called upon to cut costs while increasing productivity. IT is no exception.

To this end, IT must continue to scrutinize expenses and invest in only what is needed. “Bells and whistle” functionality is viewed by business management as reckless spending and must be avoided. More than ever, IT must determine which IT management functionality is essential and which features are “nice to have.”

Essential features would include the aforementioned authorized remotes as well as JobQue/X’s job dependencies which allow schedules and steps to be dependent upon any other schedules or steps. Schedules can be started by calendars, other schedules, or both.

In many cases, IT managers will find that simple yet powerful products like JobQue/X will meet true functional requirements and also contribute to demonstrable ROI better than the complex yet costly products.

Demonstrate quick returns

While simplification and automation of these IT management functions is critical for streamlined and timely business process operations, IT must scrutinize and balance the needs for essential software features with associated costs. Again, in many cases, IT managers will find that simple yet powerful products will not only meet true functional requirements but also deliver better ROI than the complex yet costly products.

With core functionality in hand, IT must then quickly demonstrate returns to the business. Although very sophisticated ROI evaluations can be done, business and higher level IT managers tend to focus their evaluation of IT investments on the speed at which IT can demonstrate positive impact in the organization and the initial cost outlay. Speed is measured by the time it takes IT to procure, install and begin actively using an IT investment such as software. Initial cost outlay tends to be measured by the purchase price. So in addition to ensuring that an IT management software product provides core functionality, IT managers must be able to quickly access its functionality (preferably at the lowest cost).

Quicker returns are achieved in two ways:

1. **Free trials:** Free trials of Nobix JobQue/X are available today as downloads from www.nobix.com. This near-immediate accessibility to product functionality enables you to quickly improve IT job management throughout your IT environment. With no cost to you, you begin demonstrating positive impact to your organization in a matter of days.
2. **Easy and quick to purchase:** When you decide to purchase JobQue/X, the lower price points enable you to gain financial approvals and process the order through your procurement organization more quickly than if you bought higher priced products. Starting at under \$1,500 for a Windows® or Linux server, Nobix JobQue/X provides the same core functionality but is up to 60% less expensive than the lowest price published by a competitor.

Overview of JobQue/X

The following section provides an overview of JobQue/X's main features, core functionality and system requirements.

Main features:

- Easy to use Windows interfaces for schedule creation and management of customized job queues, calendars, and activity reports.
- Multiple machine scheduling allows any JobQue/X system to make its schedules available to any other JobQue/X system for execution.
- Job starting based on time, job completion, and events eliminates the need for manual intervention and offers total control over the timing of jobs.
- Job, schedule, and event dependencies provide total control over job starting even within a networked environment as schedules can be started by calendars, other schedules, events, or any combination.
- Between system dependencies allows schedules to control jobs running on networked JobQue/X systems.
- Unlimited number of calendars, events and schedules eliminates scheduling limitations.

- User-created jobs and their associated dependencies are seamlessly integrated with previously scheduled jobs.
- Multiple user features for delegating scheduling tasks to other personnel.
- Real-time monitoring and maintenance of schedules provides control over starting and stopping the main schedule, when to complete an active or pending schedule, and printing the schedule.
- Shared log files amongst networked JobQue/X systems facilitate viewing from any computer on the network.
- Server Groups features provide an easy way to distribute schedules and files to large numbers of systems.
- PageAlert (our notification and paging product) enhances JobQue/X by adding error detection and notification capabilities.

JobQue/X provides a very easy method for scheduling and managing processes and dependencies. JobQue/X dramatically simplifies administration and configuration of the scheduling process, while improving operational productivity. JobQue/X runs tasks consistently and accurately, eliminates the need for manual intervention, and offers total control over the order, timing and flow of work.

JobQue/X provides the ability to automate and monitor jobs based on reusable calendars, events, and cross-platform dependencies. Sharing log files amongst networked JobQue/X systems facilitates viewing from any of these machines on the network. Real-time monitoring and reporting make modifying the main schedule on the fly a breeze. JobQue/X is all about getting the centralized control and visibility for running your operation smoothly, improving response times, and increasing service levels, while avoiding reruns and costly downtime.

Core Functionality

The following few sections describe each of the main components that makeup the JobQue/X product. These include the:

- **Schedule Administration** client program
- **Scheduler Communications** client program
- **SCOM** client program
- **Scheduler Communications** web interface
- **Submit** client program
- **Reporting** client program
- **JobQue/X Server** (available in HP-UX, AIX, Red Hat Linux, Solaris and Windows versions)

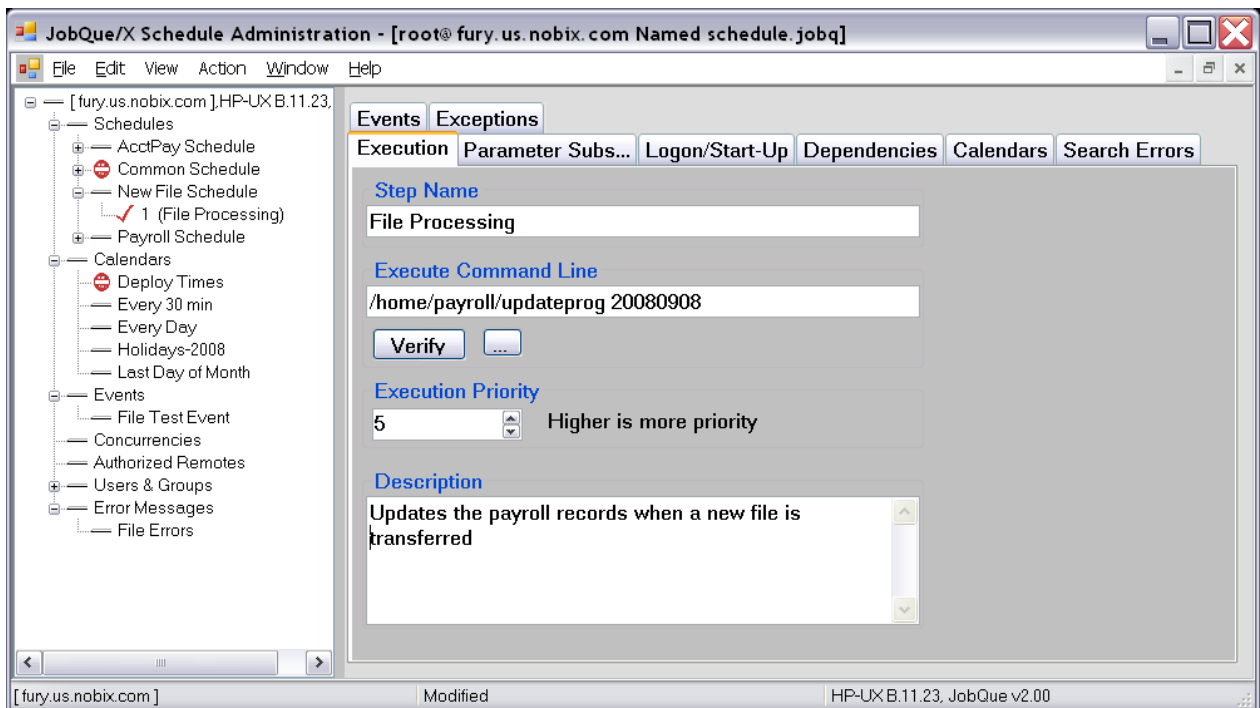
Schedule Administration Program

JobQue/X uses a number of constructs including the *schedule*, *calendar*, and *event*. Essentially, schedules contain a list of jobs to be run. Calendars list the dates and times on which schedules should run. Events define conditions that when met, may be used to start schedules and satisfy dependencies.

This information is contained in a file known as the *MAIN SCHEDULE*. Using the Schedule Administration program, the *MAIN SCHEDULE* file is created and configured so jobs run consistently and accurately.

JobQue/X allows several different relationships to be created between jobs. A dependency is a relationship that prevents one job from running until another job has completed. JobQue/X can be configured so that a job runs after the preliminary job has completed. In addition, JobQue/X can be configured so that a job runs only if the preliminary job or set of jobs completes without any errors.

Concurrencies specify which jobs, and how many, may be running at the same time. When there is a group of jobs that all make use of the same database, or several jobs use significant amounts of system resources, concurrencies ensure that only a few jobs can run at any given time.



Scheduler Communications Program

The Scheduler Communications program features an easy to use interface used to control JobQue/X. It can be used to start, stop, pause and resume JobQue/X's scheduling operations. It also allows users to reload the current schedule so the most recent changes are recognized.

Featuring a series of command buttons, the program provides a wide range of job manipulation capabilities. It can be used to start, suspend, and even delete schedules and steps. It also allows the completion status of a job to be changed and it provides complete control over executing jobs.

Schedule N...	Schd No.	Parent	Start Time	OverRide	Last Change	Queue Limit
AcctPay Sch...	1	TopLevel	07/09 09:44	Yes	07/09 09:50	999
Payroll Sche...	46	1	07/09 09:50	No	07/09 09:51	0
Payroll Sche...	47	TopLevel	07/09 09:45	Yes	07/09 09:50	0
AcctPay Sch...	48	TopLevel	07/09 10:00	No	07/09 10:01	999
Common Sch...	23	TopLevel	07/09 10:00	No	07/09 10:00	0
Payroll Sche...	49	48	07/09 10:01	No	07/09 10:02	0
AcctPay Sch...	2	TopLevel	07/09 10:30	No	07/09 10:31	999
Common Sch...	24	TopLevel	07/09 10:30	No	07/09 10:30	0
Payroll Sche...	50	2	07/09 10:31	No	07/09 10:32	0
AcctPay Sch...	3	TopLevel	07/09 11:00	No	07/09 11:01	999
Common Sch...	25	TopLevel	07/09 11:00	No	07/09 11:00	0
Payroll Sche...	55	3	07/09 11:01	No	07/09 11:02	0
AcctPay Sch...	4	TopLevel	07/09 11:30	No	07/09 11:31	999

Client time is 2008/07/09 11:44:55, fury time is 2008/07/09 12:44:14

12:45:15 Schedules fury, Since 2008/07/07 15:06:24 Exec/Loaded, Limit 9999, Exec 0 HP-UX B.11.23, JobQueX v2.00

SCOM Program

The SCOM program is an on-line utility that offers all of the same capabilities and functionality as the Scheduler Communications program. It is offered as an alternative for users who prefer using a command line interface.

Like the Scheduler Communications program, the SCOM program is used to manage most of JobQue/X's functionality. It's used to start, stop, pause, suspend and resume JobQue/X's scheduling operations. It also allows the completion status of a job to be changed and it provides complete on-line control over executing jobs.

```

C:\WINNT\System32\telnet.exe
2004/08/30 14:47:09
JobQue: SHOWAJT
# Schedule Name          Step #J   Status   Start@Time  Ovr
1 AcctPay Schedule       1      J1331   Normal EoJ 08/30 14:35:00
1 AcctPay Schedule       2      J1332   Normal EoJ 08/30 14:35:00
2 AcctPay Schedule       1      J1333   Normal EoJ 08/30 14:40:00
2 AcctPay Schedule       2      J1334   Normal EoJ 08/30 14:40:01
3 AcctPay Schedule       1      J1335   Normal EoJ 08/30 14:45:00
3 AcctPay Schedule       2      J1336   Normal EoJ 08/30 14:45:00
JobQue: KILL 2,1_
  
```

Scheduler Communications Web Interface

Like the Windows-based Scheduler Communications program and the command-line-driven SCOM program, the Scheduler Communications web interface is used to manage most of JobQue/X's functionality. It's used to start, stop, pause, suspend and resume JobQue/X's scheduling operations. It also allows the completion status of a job to be changed and it provides complete on-line control over executing jobs. It is offered as an alternative for users who want to communicate with JobQue/X via the Internet.

You are logged on hellcat.us.nobix.com as tmadm
[logon as another user](#), or [logout](#)

JobQue

Display Options: Schedule/Step Control: Server Control:

Include Message History for the

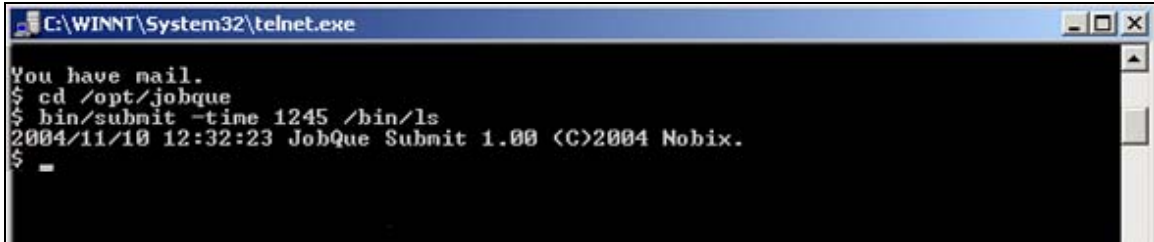
Active Job Table

<input type="checkbox"/> Schedule Name	Step	Schd	Job No	Last Chan	Start Tim	End Time	Notes	Status
<input type="checkbox"/> Inventory Schedule	1	1	0208	1127	N/A	N/A		Restart
<input type="checkbox"/> Inventory Schedule	1	2	0207	1350	N/A	N/A		on HOLD
<input checked="" type="checkbox"/> Inventory Schedule	2	2	0207	1350	N/A	N/A		on HOLD
<input checked="" type="checkbox"/> Inventory Schedule	1	3	0207	1358	N/A	N/A		on HOLD
<input type="checkbox"/> Inventory Schedule	1	4	0207	1400	N/A	N/A		on HOLD
<input type="checkbox"/> Inventory Schedule	2	4	0207	1400	N/A	N/A		on HOLD

Submit Program

The Submit program is an on-line utility that is designed to be used by users from a terminal session on the JobQue/X server. The program is used to submit a job to JobQue/X so that it can be integrated into JobQue/X's scheduling operations.

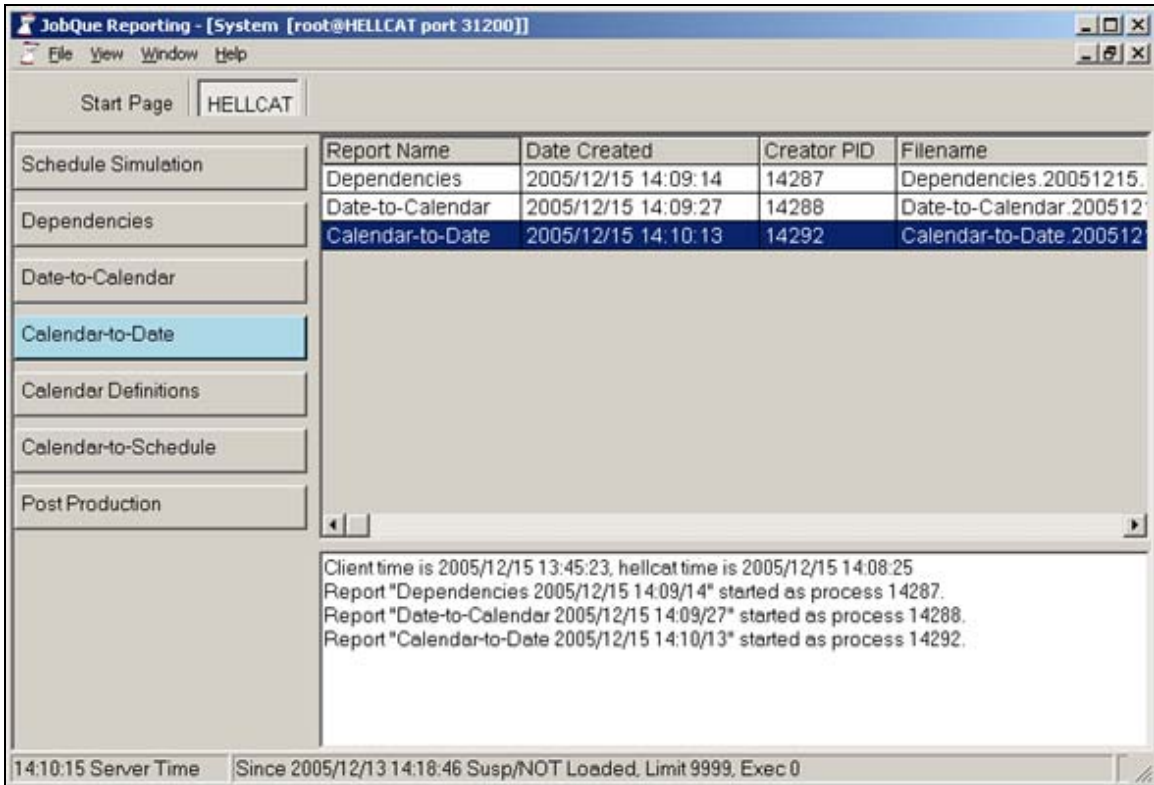
To use the Submit program, a user specifies an executable program or script along with an optional start time and/or one or more dependencies. A name for the job (i.e., step name) may also be specified.



```
C:\WINNT\System32\telnet.exe
You have mail.
$ cd /opt/jobque
$ bin/submit -time 1245 /bin/ls
2004/11/10 12:32:23 JobQue Submit 1.00 <C>2004 Nobix.
$
$
```

JobQue/X Reporting Program

The JobQue/X Reporting program can be used to generate various types of reports. Schedule simulation reports show all the schedules JobQue/X plans to run during a set period of time, while calendar reports list all the days specific calendars are valid. A set of command buttons makes it easy to create the type of report users need.



The screenshot shows the JobQue Reporting application window. The title bar reads "JobQue Reporting - [System [root@HELLCAT port 31200]]". The interface includes a menu bar (File, View, Window, Help) and a "Start Page" dropdown menu currently set to "HELLCAT". A table lists various report types with their creation dates, creator PIDs, and filenames. The "Calendar-to-Date" report is selected and highlighted in blue. Below the table, a log area displays client and server times and the start times of the selected reports. The status bar at the bottom shows the server time as 14:10:15 and provides system information: "Since 2005/12/13 14:18:46 Susp/NOT Loaded, Limit 9999, Exec 0".

Report Name	Date Created	Creator PID	Filename
Dependencies	2005/12/15 14:09:14	14287	Dependencies.20051215.
Date-to-Calendar	2005/12/15 14:09:27	14288	Date-to-Calendar.200512
Calendar-to-Date	2005/12/15 14:10:13	14292	Calendar-to-Date.200512

Client time is 2005/12/15 13:45:23, hellcat time is 2005/12/15 14:08:25
Report "Dependencies 2005/12/15 14:09/14" started as process 14287.
Report "Date-to-Calendar 2005/12/15 14:09/27" started as process 14288.
Report "Calendar-to-Date 2005/12/15 14:10/13" started as process 14292.

14:10:15 Server Time | Since 2005/12/13 14:18:46 Susp/NOT Loaded, Limit 9999, Exec 0

The JobQue/X Server – HP/UX, AIX, Solaris, Linux version

JobQue/X's server software is installed on an HP-UX, AIX, Solaris or Redhat or openSUSE Linux computer. Along with the server software, various types of JobQue/X files are stored on this computer such as output files (stdin, stderr, stdout) schedule configuration files, and log files. All of these files are eventually purged from the computer based on JobQue/X's retention management settings.

On UNIX/Linux systems, JobQue/X runs as a background process.

The JobQue/X Server – Windows version

JobQue/X's server software can be installed on a Windows computer. Along with the server software, various types of JobQue/X files are stored on this computer such as output files, schedule configuration files, and log files. As with the UNIX-type version, the same types of JobQue/X files are stored and eventually purged based on retention management settings.

On Windows systems, JobQue/X runs as a service.

Safeguarding and Protecting IT Processing – PageAlert Add-On

JobQue/X can be integrated with PageAlert which is alerting and notification software that provides advanced messaging and escalation management of IT resource problems. It will monitor JobQue/X's activity and logs, while also monitoring other applications, operating systems, devices, system and network-delivered services. PageAlert first checks for availability, performance issues, conditional exceptions, problems, errors or threshold penetrations, and then alerts the appropriate personnel. It also adds automated error detection and notification to the job management and scheduling process so when problems are detected, designated individuals are immediately alerted by email, pagers, PDA's or standard land line and cell phones. Escalation management features then provide options for reaching alternative parties.

System Requirements

The JobQue/X server software is to be installed on an HP-UX, AIX, Solaris, Linux or Windows host, specifically an HP9000 system running HP-UX 11.0 or later; a system running AIX 4.3 (or later); a system running Solaris 7.0 (or later); a system running Redhat Linux 7.0 (or later); openSuse Linux 10.2 or later; or a system running Windows 2000, XP or 2003. A minimum of 20 Mb of hard drive space is required. If output files are to be stored for a significant amount of time, more drive space will be required.

The JobQue/X client software requires Windows 2000, XP or 2003 running on a Pentium-class processor. Microsoft .NET Framework 2.0 or later must also be installed on the computer. The .NET Framework and other Microsoft libraries are automatically installed with JobQue/X if necessary.

About Nobix

Nobix has been providing the best value in the IT management software market since 1985. Nobix delivers IT management products specifically for job scheduling, and problem alerting and notification at prices lower than alternative products. Nobix's simple

yet powerful products provide the core functionality required to cost-effectively manage interdependent IT jobs and deliver problem alerts across AIX, HP-UX, Linux, MPE/iX, Solaris, and Windows environments. Thousands of customers have benefited by using Nobix products to simplify and automate IT management functions. See for yourself – improve your IT capabilities and realize returns in a matter of days with Nobix's free trial software available at www.nobix.com or call 925-659-3500.

ⁱ "The Profit Squeeze for U.S. Manufacturers: A Close Look at Five Major Industries," October 2005, National Association of Manufacturers, http://www.nam.org/s_nam/bin.asp?TrackID=&SID=1&DID=235347&CID=201715&VID=2