Patrick Devine: Hello and welcome to today’s presentation, ‘Achieving Effective Automation in the Age of IT Complexity and Cloud Computing’. My name is Pat Devine and I am going to be the moderator for today’s presentation. Today’s presentation is being brought to you by ASG Software Solutions.

Before we begin today’s presentation, please note that the slides for this presentation will be pushed to your screen automatically and all audio will be streamed to you through your computer. If you have any questions today, you can enter them by clicking on the Questions tab, on the lower left-hand side of your screen, and click Submit Question. Your questions will be addressed at the end of the presentation.
With that said, it is my pleasure to introduce our speakers for today’s presentation. Joining us today is J.P. Garbani, Vice President, Principle Analyst, Forrester Research. Also joining us today is Ed Hallock, Senior Director of Solutions Management for IT Infrastructure and Operations over at ASG Software Solutions. With that said, I am now going to pass it over to you, J.P., to begin today’s presentation. You can take it away!

Jean Pierre Garbani: Thank you, Pat, and thank you, everyone, for attending! Welcome! My name is Jean Pierre Garbani, or J.P. Garbani, and I am the Forrester analyst covering automation, among other subjects, in IT operations.

Today, we are going to introduce the necessity of automation in our complex world and we will start by briefly looking at some IT challenges and then look at automation as a potential solution, what it brings, where does it benefit, what are the key elements of automation, and I will look at the future of automation and its rationalization when it gets adopted and, you know, of course come to a conclusion before passing the floor to my friend, Ed Hallock, from ASG.
Among the issues that we see, and this slide is really showing, I think, one of the most compelling problems that we have, everybody is talking about aligning IT and the business. But, that is possible only if IT has reached a maturity level where it’s considered by the business itself as a partner in crime, or in business, rather than a utility computing, something that is, you know, among the other utilities, like power and telephone, and that type of thing. What prevents IT to reach that level of confidence is the fact that many business leaders consider that their IT today is not able to support the growth of the business and the difficulty supporting that. What I think we would like to explore is why it is.

One of the reasons, I think, that it is in that situation is of course the multiplication of business services, the fact that, you know, prices of hardware and capacity of…compute capacity, storage capacity, the capacity of technology in general is going up, which means that there is more and more demand or possibilities to create new services or to expand current services. One of the problems that IT Operations is facing is that this evolution occurred in layers. So, there are, you know, layers of technology accumulated over layers of technology over time and that creates, you know, and added problem and added complex element to IT infrastructure. So, not only does IT have to cope with the increasing demand in terms of business services but it has also to cope with integrating older technologies, managing older technologies, keeping the lights on, managing the changes, etc. So, there is a lot of complexity due to volume and diversity in IT infrastructures today.

So, the first thing that people think about, you know IT organization, and I see that every day in my job as an analyst, talking to my client, is going to where the simplification of IT infrastructures, of saying, well, you know, one of the culprits of our situation is the fact that we have all of this diversity of platforms so
let’s simplify the platforms. Let’s standardize on one type of commodity chips, whether it’s Intel or AMD. But, as one of my clients put it a few hours ago, go to the Bic lighter type of hardware, so something that purer community that, you know, is simplified to the maximum and standardized across the infrastructure. And, once we have done that, let’s simplify again by using only a few operating systems and middleware components, etc., so trying to align all of the components that we are using in IT infrastructure and operations to a single model. And, then once we have done that, let’s put some automation on it and manage it from a service standpoint, so service-oriented (Inaudible) coming on top of...more automation coming on top of simplification and rationalization of infrastructure seems to be the solution.

But cloud and virtualization accelerate complexity

What happens is that when we push this model a little bit further, we’re getting into, “Oh, let’s do virtualization. Let’s, you know, concentrate; rationalize again so that we take advantage of the flexibility of virtualization and maybe the flexibility of the cloud.” So, there is an elastic infrastructure now that we can contract or expand at will so we can resolve our performance and capacity problems by using, you know, things like vMotion or, you know, other types of agility component. But, what it does actually, when we do that, is that it spreads out more complexity, because all of the sudden we have, you know, the added layer of virtualization, this added layer of infrastructure that is somewhere else that, you know, most of the time will be mixed with the infrastructure that we have in-house. So, we actually accelerate complexity. And, so it becomes necessary to look at how can we again abstract that complexity, simplify it so that it doesn’t tax too much the infrastructure and operation personnel in our data center.

IT and business processes

End to end business process management
One of the approaches and one of the first things that we have to consider when we do this is the fact that, you know, managing from a business process standpoint, from a business service standpoint, means that we have to know the business process itself, what is it. And, you will probably notice that when people are talking about services, they are mostly talking about, in fact, applications, not real services. If I look at the business process from end to end, it looks a little bit like this, and this is a very, very simplified version for the sake of argument. But, we see that there is a mix of transactional activities and a mix of consolidation, the need to...you know, when I take orders, I take orders one by one, and then I have to consolidate orders by, you know, different types of criteria, by layer, by location, by etc. And, so there is a big mix of real-time activities and batch activities, or asynchronous activities, synchronous activities, asynchronous activities. But, the combination of all of these activities is actually what makes the business process. And, that, once we have considered that, we can certainly define where and how we are going to apply automation to make that whole process more effective and more efficient.

So, when we are looking at, you know, managing this end-to-end business service, there are things that we have got to consider. We have got to consider the whole business process as a holistic view of, you know, activities. We have got to consider making sure that the data we are manipulating is accurate. We, you know, got to introduce some level of automation between these different tasks and make sure that we take care of, you know, failures in backups. We have got to be independent of the platform. In other words, if we are using...if we have achieved that goal of simplifying and standardizing our platforms, we then can certainly be more efficient. But, in many cases this will be a work in progress. We may have simplified 70% of the platform and we may, on top of that, be using in-house and outside public cloud. So, we have got to consider all of these things when we want to become more efficient in terms of creating support for the business process that is better than what we do.

**Keys to efficient end to end business process support**

- Holistic view and support of the business process
- Data accuracy
- Automation
- Automation of failure recovery
- Accelerated development of batch processes
- Independence from platform technologies
- Scalability of the solution to enterprise level
Introducing automation

Processes are defined once and repeated with the same results as many times as needed:

- Repeatability, predictability of results and reliability
  - Automation of routine and repetitive tasks
  - No wasted resources chasing errors

- Abstraction of complexity
  - Abstraction layer on top of complex operations reduces time wasted in deploying, configuring and operating business services and management processes

- Better use of skills
  - Employees are free to use their full potential on higher level issues

So, if we introduce automation in that spectrum, what are the benefits that we are getting? Well, one of the things about automation which makes it so great, and we see that every day, you know, in the products that we are using, like you know, all of the consumer goods, all of the cars, the clothing, even the food now, we have a repeatability of the process. That is the process itself becomes, when it is automated, becomes predictable. It’s repeatable. It’s reliable. So, everything that, you know, was routine, where we could, through boredom or other impediment, introduce human error or introduce a glitch, all of that is, you know, automated and disappears. We are not wasting resources, chasing errors or chasing, you know, things that are imperfect.

What we do also with automation, which is important in the context of our discussion, is that we are abstracting complexity, because we are actually not seeing the details. These details are taken care of by the automation itself. Therefore, what we are seeing is the high-level view of the problem and, you know, that’s definitely a way to gain time and to be more effective and more efficient. So, the abstraction of complexity is one of the key benefits of automation and the sort of big benefit is the better use of skills, what we have, you know when we have a complex environment and a difficult environment, is that there are errors, there are things that are not done correctly that have to be re-done and re-worked. An unplanned task is a big chunk of activities in the data center. So, if we are using automation, we stand a very good chance of not having these problems anymore and therefore make more efficient use of the skills we have in our infrastructure and operation.

Automation: moving the goal posts
Fundamentally what we are doing, as I’m showing you here, is moving the goal post. That is we are pushing the complexity curve one notch further so that we are not, you know, as saturated or we are not saturating and taxing the infrastructure and operation organization. We are just pushing it back a little bit. And, what we see on that chart is that our manual ability is in fact capable of going further in terms of scales and in terms of, you know, adding business services and overall complexity of the problem.

The Forrester “automation wheel”

So, what is automation really? Okay, how can we characterize automation and how can we see it? Well, we have, you know, presented at Forrester what we call the Forrester Automation Wheel and it has a number of elements in it. It is a centerpiece which is the automation orchestration that distributes the work and verifies that it’s really ready and executed. There is, you know, a starting point, a decision trigger, and the decision trigger can be a number of things. You could consider that the decision trigger could be an event. It could be, you know, like somebody putting an item in a file or a transaction coming in. Or, it could be a time of the day or day of the month, a month of the year, etc., etc. So, there are a number of ways to define this decision trigger that will actually start the automation. And, you know, one of the things that we have at that point in time is in fact a process flow. We have an idea of how things should, you know, be sequenced and linked together. And, then, you know from this process flow, we are extracting tasks once at a time and we are executing these tasks. So, this is...and of course, when this task is finished, it actually triggers, you know, the next task in the process flow, etc. So, that’s why it’s a continuous wheel and not a set of discrete events.

Workload management: requirements

- Event-driven Scheduling
- Integrated file transfer
- Integrating packaged applications
- J2EE support
- Non-Stop Operation
- Centralized Management
- Enterprise Scalability
- Multi-client capability
- Secure Data Maintenance
- Audit trail / SOX compliance
So, looking at this and the Forrester Automation Wheel, we can look at what is it that I need in order to, you know, automate this business process that we were talking about, which is composed of, you know, part of transactional activity and part of asynchronous or batch activity. I will need, you know, elements of scheduling, so globally what I would call event-driven scheduling, the capability to, you know, look at events that are happening or, you know, an event could be, as I said, a time. It could be a calendar. It could be a number of things. It could be a real event, something that, you know, is expected but which is relatively random, and anything that could trigger the task. And, then we have got to look at how we are going to support the different types of workload that we put in the business process.

So, integrated file transfer is a must in the sense that we are talking about a distributed environment. Therefore, things should be transferred; data and software, and tasks should be transferred as securely as possible, and automatically. Then, we have got to look at, you know, packaged application. Packaged application is a strange thing because they have their own scheduling process. They are looking at themselves as, you know, complete processes, business processes, so therefore they have their own queues for scheduling tasks, etc. We have got to look at, you know, machines that are abstractions of machines, like a JVM Java Machine, in which you are going to have, you know, a Java application. Well, that Java machine can certainly trigger things, but it cannot trigger things outside of the Java machine. So, we have got to have, you know, Java support and a link that allows us to expand the capabilities of that application throughout the infrastructure and throughout the file applications. We have got to look at, you know, (Inaudible) preparations, centralized management, scalability across the enterprise. Maybe, we have multiple divisions in this enterprise and we must have, you know, segregation of the different accounts that are automated, etc., compliance to a certain number of regulations. So, all of these are the requirements that we should put in our workload automation solution.

Resources: dynamic allocation

And, then there is this elasticity of the cloud and elasticity of the virtual environment that we should take into consideration. In many cases, what happens when we are, you know, automating a business process, we are looking at a series of jobs, a series of tasks that have to be executed and of course the amount of processing and the amount of data of each of these tasks may vary according to the time, for example. So, everybody, you know, in IT knows that at the end of the month we may have more things to consolidate than in the day-to-day operations. So, our batch process is going to actually have a far higher value at some point in time of more consolidation to be done, etc. And, it would be good because these things are constrained by time. They have got to be executed, you know, at a certain time. It would be good if we could allocate more resources to this execution than is usual, and that's where the elasticity of virtualization, the elasticity of the cloud is coming into play, that, you know, if we know these things from past history, if you know how long it takes to execute normally a certain job and we know that, you know, once a month at this precise date the amount of data is going to be greater than normal and we will
need more resources, it’s easy to use automation to actually provision these resources so, you know, virtualization, expand the virtual machine, acquire more resources from the cloud, etc. So, dynamic allocation of resources becomes an integral part of workload automation and workload management.

### Automation efforts result in multiple directions

- **Job scheduling is now workload automation.**
  - Improved resource management, backups and alternate processing schemes and links to other IT management solutions.

- **Run book automation morphed into specialized solutions.**
  - Conceived as a way to simplify scripting and automate routine tasks,
  - Follows a workflow that represents the process to be automated,
  - Morphed into several specialized solutions like server provisioning, virtualization provisioning, release management, and change management.

- **Process workflow capabilities embedded in another tool.**
  - Early ITSM efforts needed to build their own process workflows, the vendors naturally provided workflow capabilities that have now evolved into sophisticated process automation engines.

So, what we can…the consequence of that, when we look at it, is that actually what we have in terms of automation is a spreading of efforts in different direction. We have been looking at, you know, automating some of the processes, automating the workload, the batch workload within the business process. So, job scheduling becomes workload automation. Okay? That’s something that is known. That is a quantity that is relatively known, that we know is useful, that we can master, we can simply look at it slightly differently in view of the resources that we have. But, if we want to provision things, we have a separate automation solution that appeared a few years ago, which was called Run Book and it’s a way to simplify routine tasks. So, there are, you know, repetitive things that I should do when I provision, for example, a virtual server, because these things are always the same, you know, and because I look at commodity infrastructure and it becomes effective to automate that into lists. So, we can do that with scripting, which is relatively inefficient, because we have to support and update these scripts. Or, we can use a graphical interface like workload automation does and create, you know, an automation that…the Run Book automation that will effectively do the provisioning for us and, you know, adapt to the different situations. Then we have, you know, the phenomenon of ITIL and processes, rationalization of processes that are now becoming workflows embedded into service centers, you know things like help desk and service desk. So, all of these things are actually gravitating around the same, you know, concept, which is to make IT and IT operation more efficient and more effective. And, the problem that we have here is that these things are actually living a life of their own.
So, we have, you know, different types of solutions, relatively chaotic. We have got server provisioning. We have got automation of virtualization. We have got Run Book automation, workload automation, (inaudible) automation, etc., all of these thing gravitating around the infrastructure and operation group, but all using different interfaces, different approaches, different GUIs, different resources. And, it comes...you know, if this thing develops, it's going to become chaos in a sense because they, as we have seen, are nestered within each other. You have workload automation calling on Run Book automation to provision machines. So, if these two elements are relatively independent, each time you do update one, you have got to update the other and, you know, they are different. It's creating, all of the sudden, complexity within automation itself and it stands to reason to think that all of these automation solutions are not fundamentally different and that therefore they should be part of an automation framework that is something that is, you know, as one element of orchestration and a number of, you know, special or focused type of operations that could be orchestrated. So, the automation wheel that we were talking about earlier, we can look at this as an example and say, well, we will have different task execution and different tasks, but the principle of having an orchestration at the center, an automation orchestration, and triggers and process workflows, all of that stays the same. So, there is now, if you wish, a commonality of components that makes the life of I&O of infrastructure and operation a lot simpler. So, we are going towards a direction of, you know, not only adopting automation as a way to become more efficient but rationalizing automation itself so that automation becomes simpler to use and more effective.

**Conclusion**

- Infrastructure and operations are faced with complexity that is amplified by virtualization and cloud technology adoption
- Automation is a solution that:
  - Abstract complexity and diversity
  - Results in predictability, quality and improved productivity
- Current solutions are a collection of point products: eventually, automation becomes itself more and more complex and chaotic
- IT Operations can alleviate these issues by:
  - Integrating automation solutions under a single ‘automation framework’ that brings order to chaos
  - Allows an analytical approach to automation,
  - Combines automation solutions to bring more flexibility and complexity abstraction
So, as a conclusion, what we said at the beginning is that most of the problems that we can see in IT today and most of the difficulties between business and IT come from complexity born from, you know, increased volumes of services and the diversity of infrastructures that are supporting these services. So, we see automation as a solution. And, why a solution? Because, we see it as an abstraction model. So, it will abstract complexity and diversity because from a single interface I can, you know, administer diverse things without knowing that they are diverse. There are high benefits that I can expect in predictability of results and repeatability of operations, and therefore an improvement, a great improvement, in productivity. But, eventually, you know, all of these automation solutions are going to come into play and create complexity of their own so we must be careful to make sure that we are in fact bringing all of these automation solutions under a single umbrella with commonalities of interfaces, commonalities of graphical user interface, commonalities of orchestration, etc. So, we think that the future is really, you know, not only automation but automation integrated and that will make really the life of I&O of infrastructure and operations a lot simpler.

Thank you

JP Garbani
+1 239.352.0129
jgarbani@forrester.com
www.forrester.com

With this, I conclude my presentation and I would like to thank you very much for your attention, and now, you know, leave the floor to my friend, Ed Hallock. Thank you very much!

ASG
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Who is ASG?
- Technologies across Business Service Management, IT Infrastructure & Operations, Applications Management, and leadership in Information, Metadata, & Cloud Orchestration Management
- $300 million (USD) privately-held ISV
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Our Values
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Our Goals
- To provide software solutions that help clients optimize IT from a quality-of-service and a business perspective
- To make your IT easier, friendlier, and more reliable

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Edward Hallock: Oh well, thank you J.P! I appreciate you sharing that information with us, always very informative and great to have you share that with us! I want to take just a couple of minutes to talk about who ASG is and then talk about what we do really to help our customers and prospects automate their IT environments. And, ASG is a privately held software company, headquartered in Naples, Florida. We do about $300 million a year in revenue and we’re a pretty geographically dispersed organization, with offices around the world. We have a presence in more than 50 countries and we have over 3,500 customers worldwide that are using ASG solutions to manage their IT infrastructures.

So, why automation? Why are we talking about automation today? And, J.P. touched on a couple of these topics. Obviously, budgets are tight. Right? IT complexity is increasing by the day. We are seeing qualified skills really diminishing a lot of IT organizations. We fuel that with some accelerants, like the economic conditions and infrastructure evolution(virtualization & cloud). We throw in some technology accelerants, like virtualization and cloud technologies, and we just see that the challenges for IT are immense in terms of getting their hands around complexity and making sure that their infrastructures run and produce, and service the business as it needs to be serviced. And, trying to do this manually doesn’t work anymore. We know manual procedures are error prone. They cost not only time but they cost money. And, as complexity grows, there’s just not enough manpower to address the issues that need to be addressed. So, this automation of repetitive tasks has an ancillary benefit, and that is it frees up staff to do what’s more important, and that really enables IT to support the business growth. And, that’s really why organizations are looking at different types of automation technologies and bringing those automation technologies together, to really enable them to automate their entire IT environment.
And, I’ll steal a quote from J.P., and this was really something that he talked about over a couple of years ago, and that is that automation has become a strategic initiative. It’s imperative. You know, IT is now evolving towards, and has evolved towards, this mass production model. So, it’s no longer a nice to have. Organizations are forced to really have to automate; otherwise they no longer can succeed.

And, then looking at that, now from my perspective, what does ASG do? Well, we’ve always been in the business really of managing complexity and helping IT environments manage the challenges around that complexity. So, our solutions in the automation space are really focused on helping our customers eliminate the errors, automate the processes and simplify the complex day-to-day operational tasks that they perform, and we do that in organizations across the globe.
So, how do we do that really? And, that is we have a pretty broad portfolio of products that we call our Operations Management portfolio. And, we think about it really in three silos. It’s about enabling workloads to be executed, planning for the execution and analyzing the execution of those workloads, and finally actually doing the scheduling and automation. So, there are a number of different products that play in those silos, and I’m going to focus really today on fundamentally workload scheduling and automation, but I do want to touch on the processes of enabling workloads and planning, and in analyzing those workloads so that they can be effectively scheduled and automated.

So, when we talk about workload enablement, it’s really preparing those workloads for production processing, and a lot of that involves, for example in the mainframe environment, JCL management, the coding and the standardization of JCL to eliminate errors, identifying data transfer requirements and managing those data transfer requirements. J.P. talked about the fact that file transfer has to be an integral part of automation, and that’s a piece of really what we talk about in terms of workload enablement and including that as part of the automation technology.
Planning and analysis is being able to look at a before and after picture of the scheduling environment so that you can understand whether or not a work to be scheduled is being optimized appropriately, and that means having a detailed graphical view of what is the scheduling environment. And, that’s bringing in information from not only ASG scheduling technologies but other third-party schedulers, like IBM, BMC, CA, flowcharting the accuracy of that schedule in a pre-production mode and then also doing a post-production analysis of how big that scheduled work executed, and was it impacted by other work that was ingested into the systems that weren’t part of the scheduled work, that might have impacted what was a critical work as part of the schedule. So, that’s what we talk about in terms of planning and analysis.

Now, let’s talk about scheduling and automation because this is really the critical part and yet this is really fundamental, eliminating the manual requirements and making sure the production work runs. And, we have a number of different products that are integrated together to provide an enterprise-wide workflow automation solution. We have a Zeke technology for scheduling in ZOS and VSE environments. We have ASG Zena, which does scheduling from a distributed perspective. We have OpsCentral, which...
does a centralized management of...provides a centralized console for scheduling workloads across an enterprise. And, then we have two other technologies that play and Zebb, which handles rerun and restarts. Inevitably, there are going to be errors that occur that impact the production work and they're going to need to re-schedule jobs and processes, and that's where Zebb comes in, to handle that restart technology. And, then Zack, which is automation of events and messages that come through system consoles. And, finally, it's all pulled together with a solution that we call Enterprise Workload Automation, and that is a service-level technology that exposes information about the scheduling and the execution of critical workloads in dashboards so we can visualize impact to the business.

So, this kind of our integrated architecture for doing this cross-platform workload automation. You could see there are three...or four rather, four products that are integral to the automation, and that is Zena, which is the distributed scheduling technology, Zeke, which is the mainframe scheduling technology, and they are both fundamentally very similar in architecture, and that is they communicate with agents that can run on a variety of different platforms so that work can be scheduled on those different platforms. It really comes down to is the choice about where the driving of the scheduling should happen. Should it happen from a mainframe platform with Zeke or should it happen from a distributed server platform with Zena. Then Zebb, which handles rerun/restart, and Zack which handles console automation, those four products are integrated into the centralized console facility that we call OpsCentral, and that is really how we handle all of the scheduling and automation across multiple platforms and different application technologies. And, again, the flexibility is there so that it's really a platform of choice from the end user's perspective, in terms of whether they want to drive automation from the mainframe platform or drive automation from a distributed platform.
The next part that layers in is what we call our framework integration. This is really the technology that enables the service-level management capabilities. We call this our federation adaptor engine or integration bus.

And, what this enables customers to do is then take information from the entire scheduling environment and manage the service levels for the workloads that are supporting the business so we can see what’s at risk of not meeting its schedule and what’s causing something to be at risk, expose that information in dashboards and then drill down really to enable a more detailed analysis of what might be impacting business services and execution of work that is supporting the business.
So, I want to talk specifically about a few of the solutions and I’m going to focus on Zena, which is our cross-platform, multi-application workload automation technology. It runs in a distributed environment. And, if we think about job scheduling, and J.P. touched on the fact that job scheduling has really evolved to workload automation, job scheduling used to be simply about calendar-based scheduling. You know, we had jobs that we wanted to run on a certain date or time and we built that schedule, and that pretty much was what we did from a job scheduling perspective.

But, it’s evolved and it’s evolved to become much more complex. And, what it’s become now is what I like to call a workload automation engine, and that is a piece of technology that, yes, still takes scheduled information, calendar information, based on date and time, but it also takes business policies, what are our service-level agreements, what are events that are happening within the infrastructure, whether those are things like the creation of a file, the modification of a file, an email message, a web service call, and SNMP alert, status information about resource availability or resource help, and uses that information now to make intelligent decisions from an automation perspective, do I need to run a task. We need to
invoke a file transfer again back to this integration of having managed file transfer integrated with automation, because in a lot of cases the decision about running something or executing something is going to be based upon the availability or unavailability of data that that task or process needs. So, that’s where events about, for example, file arrivals or file modifications are critical and will play into the decision process about how automation is going to occur.

So, Zena is a distributed server-based technology. Again, it has operating system agents that run on a variety of operating systems, Windows, variations of Unix, variations of Linux, as well as IBM ZOS operating system. And, then it has interfaces to different technologies that it can take information from, use that information to cause automation scenarios to be invoked, and those interfaces include things like .NET technologies, J2EE, web services, different Microsoft technologies, file transfer technologies. We also interface to a variety of different technologies that enable great computing, for example Sun Grid Engine as well as virtualization technologies. There is an interface capability to VMware. And, with VMware integration, we have directly from Zena, automation capabilities to power on and power off virtual machines, suspend them, reset them, a variety of different things that can be done to really automate a virtualized server environment from within ASG Zena.

Zen's scheduling model uses a workbench type of approach, a pallet to define the automation processes, drag and drop the different types of tasks that need to be done, connect those tasks together conditionally. And, what it provides also is a nice visual of what are the processes that need to be automated, what do they look like, what are the interrelated and interconnected tasks, and then it can also be used to actually monitor the execution of those. So, you have a very visual picture of here is what’s involved in this automation process, these are the tasks and here is where we are within the execution state of any given piece of that process.
OpsCentral, which is our centralized management console, supports really simultaneous access to multiple instances of Zeke or Zena, and then it provides common views across those scheduling components and exposes that information in sheet charts, and PERT charts and Gantt charts so we can get a variety of workload representations. It also brings together alerts from the different scheduling technologies so that we have a consolidated view of what’s the scheduling environment, what are alerts that are affecting the scheduling environment. This graphical representation really enables and addresses some of the skill gaps that we’re starting to see, for example, in mainframe environment. As the mainframe staff ages, folks no longer have the skills that they need to do the types of technology works and tasks that they would normally do, but now by taking that traditional mainframe-based scheduling and exposing it in a Windows type of GUI, somebody with a little less skill, from a mainframe perspective, can still get their hands around that scheduling environment and manage that scheduling environment from a mainframe perspective.
So, here is a kind of a view of a mainframe schedule exposing the GUI. We can see the things displayed in a row and column perspective, in terms of what’s scheduled, what remains to be run, what has already executed, as well as the alerts that have been exposed from the underlying scheduling technologies. But, that’s just one way of looking at it.

Another way is to take those related jobs and show their relations in a flow chart so that we can see what are, again, the dependencies of work, what are the predecessors to some jobs, the successors to other jobs that need to be run, where are we in the execution process of that work, and then we have the capability, for example, at any point to take actions on one of those jobs, right click and say I want to look at the output for a job that’s already executed. I want to edit the JCL for a downstream job that has not executed yet. I could see a job that’s failed in the stream. I want to invoke rerun and restart. So, this is a full console facility to really manage the execution of the scheduling environment.
Another way to look at it is a Gantt chart. Basically, what we see here is the red line showing the current time of day. That green square is showing a job that is currently in execution. What’s in blue, above it, has already executed. And, then in gray, we see the downstream jobs and a prediction of when they’re expected to start and end, so we have a very nice view of whether we’re going to meet the schedule that’s been proposed. And, again, from this chart, the same capabilities as we saw in the prior flow chart. Click on any job. Go and view its output if it’s already executed, edit its JCL if you need to do that for a downstream job, take full actions from this graphical interface.

And, also, we integrate in here all of the other underlying scheduling technologies. So, the rerun/restart technology is integrated into OpsCentral. The console and event management technology is integrated as well. Again, this is a Workbench, Windows Workbench GUI interface that enables full administration and management of the scheduling environment.
We talked a little bit earlier about our integration layer, and it’s really part of what we call our Enterprise Automation Management Suite, and it’s really comprised of this foundation technology in the middle and this adaptor capability that lets us pull information from a variety of data sources. They could be ASG tools. They could be other third-party tools. They could be applications in your environment. They could be unstructured data sources. We can take that information. We can analyze it. We can store what’s critical in our metadata repository, what we call our business asset repository. And, then we can expose that information either in dashboards. We can show configuration information about the environment. We can produce composite views and key performance indices. In essence, what we do is we enable really the business to dice and slice, and expose the information so that it meets the needs of the business. And, again, our underlying scheduling technologies are plugged in through this federation adaptor capability through this EAMS foundation technology.

So, it looks like, from an automation perspective for us, and we’ll get to that, but here is a way we manage our entire global IT infrastructure. And, you can see we have what I call a refined view of IT services and the infrastructure. So, we’ve broken down what’s the virtualization environment look like, what’s the corporate report or what’s does the help desk, what’s happening from the mainframe perspective, what’s happening from an automation perspective.
And, we can use this to now drill down and look at what's happening within the automation environment, and it will look like something like this. It will provide an overview of workload automation across the enterprise, which in essence is monitoring the scheduling environment, looking at executions of the workloads, and providing a multilevel, a multi-platform service-level view of workload scheduling and execution. So, it's bringing together the information from the scheduling environment coupled with what we see from a resource perspective and saying these service levels are going to be met or are there some service levels that are at risk. The reason that they are at risk is we have potentially some impacts to jobs or processes that are executing, and that's really what's done with this technology.

It enables you then to drill down and say, what is really the impact of something that's at risk? Why is the service level not being met?
We feel we have a pretty solid solution and offering in this space and fortunately the analysts agree. We can see here, from Forrester that we’ve been recognized as a top tier workload automation vendor in both the mainframe and distributed environments. You can see there is only a handful of vendors that play both in the mainframe and distributed solution areas for scheduling and automation. So, we’re quite proud of our position in the market.

So, I’d like to just leave you with some final thoughts and why ASG when you’re thinking about operations management and automation, and that is we really do have a very extensive background in IT management and we brought together really a number of different products, and services, and offerings that can help you manage complexity in your IT environment. We have a very broad range of technologies that go from mainframe to distributed, to virtualized environments. They integrate very well together as well as integrating other third-party technologies using our EAMS foundation. And, in essence, we have a very well-integrated workflow automation and scheduling solution that enable IT organizations to manage their infrastructures and get the most really out of their IT infrastructure environments.

Ed Hallock - Senior Director, Solutions Management
IT Infrastructure and Operations Management
ed.hallock@asg.com

Additional information:
www.asg.com

THANK YOU FOR YOUR TIME TODAY!
So, I want to thank you really for your time today, spending some time with J.P. and I. If you have any questions, feel free to reach out and contact me directly. I encourage you to go to asg.com. Take a look at our solution offerings. And, with that being said, I'll just turn it back over to Pat.

**Patrick Devine:** Thanks Ed! And, at this time, I’d like to thank today’s speakers, J.P. Garbani and Ed Hallock, for taking the time to join us today. I would also like to thank today’s sponsor, ASG Software Solutions for making this event possible. And, as always, thank you for taking the time to join us today. This is Pat Devine wishing everybody a great day!