

Using TimeControl™, Microsoft Project and SharePoint to create an Enterprise Project Management Environment

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The desire to create a project management environment which spans the entire organization is very common and there are many tools now available to create an environment for your entire organization. Now HMS has combined two of the most popular tools: Microsoft Project and Microsoft SharePoint with its own TimeControl enterprise timesheet system to create an EPM solution for mid-sized organizations.

This combination brings 3 of the most popular systems in their categories together to make a powerful solution.

Microsoft Project is the undisputed leader in desktop project management. This is the most popular project scheduling system in the market. Project's ease of use and flexible interface has made it the tool of choice for individual project managers to make their own project schedules.

SharePoint is the fastest growing product of all time at Microsoft. SharePoint has become the most popular collaboration platform for organizations with both Windows SharePoint Services and Microsoft Office SharePoint Server providing essential elements of a collaboration system for organizations of all sizes. SharePoint already has over 100 million paid licensed users.

TimeControl is HMS Software's popular enterprise timesheet system which has been a leader in the market since its first release in 1994. TimeControl is designed to provide timesheet information to both Project Management and Finance. It has been in use in organizations of all sizes including many of the Fortune 1000. TimeControl integrates with both Microsoft Project and SharePoint to provide the fundamental building block needed by any organization: **time**.

Bringing project personnel together to collaborate on project is as old as the concept of project management. However, the challenge of bringing project teams together has changed dramatically in recent times.

Many years ago, it was sufficient to have a highly experience project scheduler to manage the project who, with a number of assistants would bring together the workers required and direct them in how to create the project at hand.

Now, project teams may include a wide range of people in a huge geographic area. Mobile phones, FAX machines, video conferencing and the Internet have resulted in the physical location of a person becoming almost irrelevant. Project teams also now often extend far beyond the centralized project schedulers. A project team may include an executive sponsor, the client, end users, developers, sub-contractors, prime contractors and others. Collaboration in a connected world has become critical to the project management paradigm.

Project management has also changed in that time. Where once we might have thought of project management and project scheduling to be synonymous, now we think of it in a much broader sense. Project management might now include document management, change or configuration management, contract management, communications management, resource management, risk management and more.

When we broaden our perspective to include these many aspects of successfully managing a project, there are many tools available to us to create a system that will empower our teams. Let's consider for a moment dividing the challenge along functional lines.

Scheduling and Resource analytics with Microsoft Project

Microsoft Project is the de-facto leader in desktop project management. There are over 20 million users of Microsoft Project worldwide with more being added all the time. Virtually every university and college has some kind of course for how to schedule a project using Microsoft Project. This is the most commonly understood and most prolific tool on the market for scheduling so let's ride the bus in the direction it's heading and put our schedules where they probably are already: Microsoft Project.

Collaboration with SharePoint

SharePoint is the fastest growing product at Microsoft. It is available both as a free component of Microsoft Windows Server called Windows SharePoint Services and as a purchased product called Microsoft Office SharePoint Server. Regardless of which flavor of SharePoint you adopt, the abilities of this versatile technology allow you to manage documents, workflow, list management of issues, risks, high-end deliverables and more. The SharePoint technology is designed to allow anyone who is given access to get informed, give feedback and take action immediately.

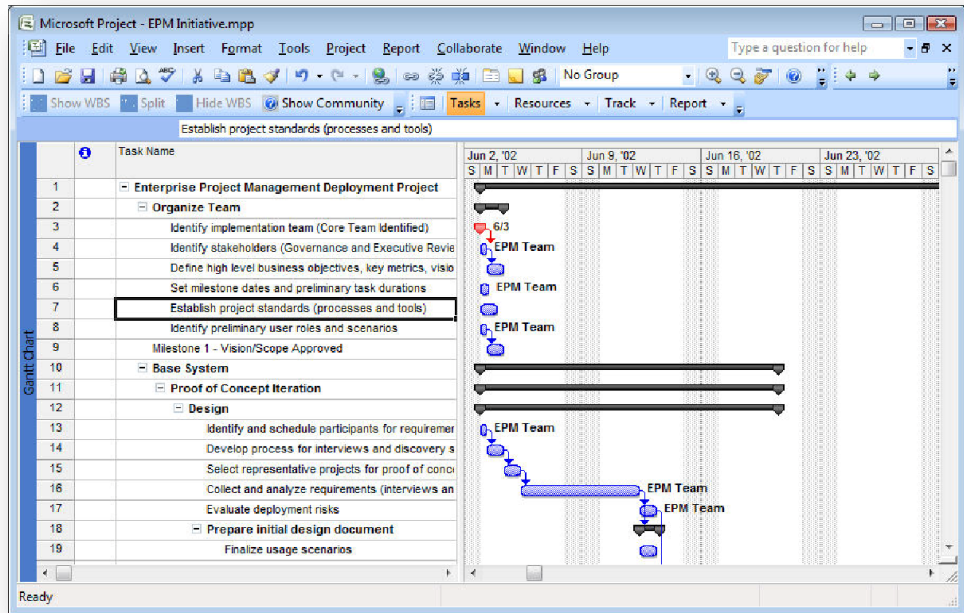
Timesheet management with TimeControl

What brings all these concepts together is “time” and that’s best managed with HMS Software’s TimeControl. TimeControl includes integration with Microsoft Project Standard and Project Professional and along with its own web interface, TimeControl can be installed right into SharePoint. TimeControl becomes the place that end users can update the tasks to which they’ve been assigned and return that information not only to Microsoft Project but also to any Finance systems such as Payroll, Billing, Human Resources and more.

Managing the Schedule

Managing a project schedule in Microsoft Project is one of the easiest to learn skills and something that is so common that it is quite likely that your project schedules are already in a Microsoft Project format.

There's nothing simpler than creating a schedule in Microsoft. Simply list the large tasks that need to get accomplished in the Excel-like spreadsheet at the left. If you have sub-tasks that you want to define that make up the larger task, then indent them below each large task. Add a duration for each task and either the dates when you are sure the tasks will occur or, better yet, make a dependency on one task to others to put them in a sequence. Microsoft Project will then generate the schedule automatically and create the barchart to the right.



Once the basic tasks are created, create a list of resources in a the Resource Sheet. If you're planning to use individuals as resources then create a resource code that will be unique for each one. This resource code will be taken into account later by TimeControl.

You can also do your resource management at the skill or competency level. Create the list of skills and how many people capable of doing that work in the level. Again, TimeControl will be taking the resource code into account when it brings in the Microsoft Project data. In this case, however, there may be more than one individual per competency.

Once you're done with your plan, save a copy of it by using the Save Baseline function. This will save an image of the current schedule so we can compare against it later and see if we're on track for our original plan or not. TimeControl will be able to update this information for you.

Connecting the timesheet

HMS Software designed TimeControl after over 10 years of providing customized timesheet solutions to the project management departments of numerous mid-to-large-sized firms.

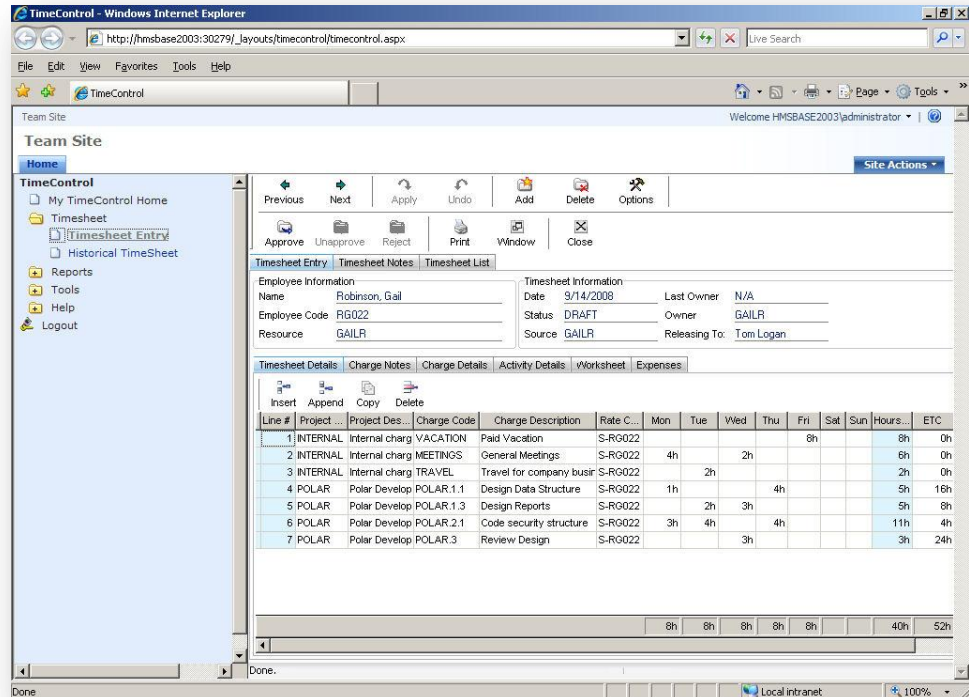
TimeControl was launched in 1994. TimeControl is designed as a financial tool with all the controls that finance managers typically require in order to use the timesheet data for auditable purposes such as payroll.

TimeControl is ideally designed for those situations where timesheet data will be used for both project and financial purposes. In this scenario, the project managers require a system which will return actual hours task-by-task to the project systems or at a minimum, in project reports and finance managers require data to be integrated into the finance systems such as payroll, HR, job costing and/or billing.

TimeControl is a project-oriented timesheet system and because of its multiple-role nature, is very flexible. An unlimited number of user-defined fields can be added to the project, charge, employee and rate tables, allowing the data to be grouped, summarized or sub-divided in an infinite number of ways.

This allows data to be sent back to Microsoft Project at the task level yet group the same data to the department level for reporting and summarize the same data to an accounting code level for integration with an ERP system.

With TimeControl displayed right inside of SharePoint, the user does not have to depart the familiar SharePoint interface to complete their timesheet in the few minutes per week it will require. This has a significant impact on how quickly TimeControl can be deployed and be accepted by end users.

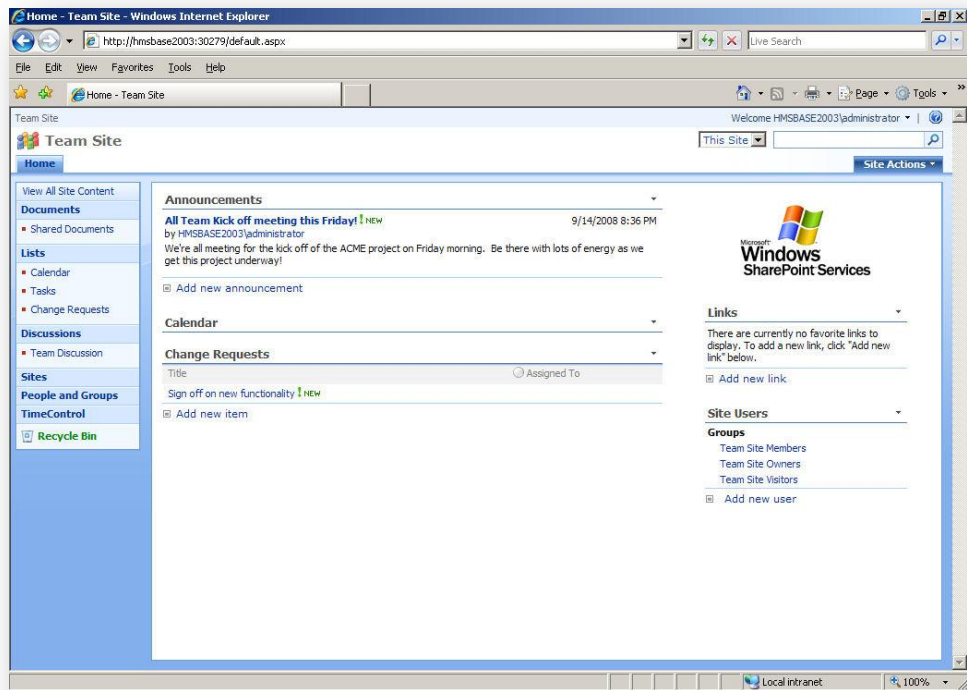


Project Collaboration with SharePoint

SharePoint was designed with collaboration in mind. It includes a wide range of functionality that is exciting to project managers as it enables them to create an environment where the project team can:

1. Be informed of information that will make them and the project at large more effective
2. Provide feedback to other team members and management of issues, challenges and progress from the field
3. Interact with other team members effectively in the context of specific project information.

Team members are no longer constrained by a hierarchical project organization when SharePoint is used. Instead of the passage of information going all the way up the authority chain, being processed and then hopefully redistributed down the chain to the right people who need to know something, now SharePoint enables a project team member to immediately make information available to anyone who might need it. This short-circuiting of project bureaucracy can make an huge impact on how quickly project team members can react to a change in the status of a project.



So, what can you do in your SharePoint project space? The sky's the limit. We've put a few examples into a webcast that is part of this solution at www.timecontrol.com/solutions/projectsharepoint. Here are a few ideas on the types of content you might make available. None of these require any programming to implement:

Connect TimeControl

TimeControl includes an installer to embed the TimeControl interface within SharePoint. While TimeControl does include its own web interface, presenting the timesheet within SharePoint is ideal if you are now SharePoint centric in your organization.

Project Deliverables

You can create a list of “Project Tasks” within SharePoint. These tasks are presented by SharePoint in a simple barchart. While these tasks are not automatically linked to Microsoft Project Standard or Professional, it’s an ideal communication tool to use for showing the high level tasks or delivery milestones to clients and upper management.

Project Documents

A SharePoint workspace allows you to create numerous libraries of documents. You can use one for project-specific documents. If you turn version control on, then you’ll always be able to return and check a previous version. This is a great help to configuration and change management.

This is also a good feature if you plan to put the Microsoft Project schedule file here. You’ll be able to see any time someone accessed it and even revert back to an older version if need be.

Contact List

This is easy. Create a list of contacts and fill it with all the key contact people on the project. No more wondering who has the proper phone number for a particular contact.

Change Request List

Create a customized list or Issue list with fields to log change requests. You can assign those requests and see your own Change items to manage in a filtered view. With version control here you’ll be able to see who updates the request and it’s status. Change Requests are a good place to weave in Workflow.

Risk Log

Create a customized list of identified risks and any mitigation plans. If one of these risks is then realized, you’ll be able to immediately go to the log and see what plans you made to get out of the trouble you find yourself in.

Project Announcements

These announcements should be prominent in your website and users can subscribe to an alert for them so they’re always informed. This is an effective method of updating the entire project team on key events in and around the project. Announcements will automatically archive on their expiration date.

Relevant Links

In this time of the Internet, so much material is available online. If there are key Websites either internally or externally this is a great place to keep track of those URLs. All too often this kind of information is available only in the Favorites/Bookmark lists of individuals.

Project Calendar

You can create calendars of events in the workspace that are independent of the project schedule. This is a great place for project oriented events like team meetings, project reviews and key milestones.

And that's not all...

Personal Alerts

SharePoint includes the ability to subscribe to changes in any of these types of modules. If the user subscribes to an alert, an email will be sent out based on new data, changed or deleted data. Users have a great deal of flexibility on how these alerts are sent and under what conditions.

Aside from Alerts, users can also subscribe to events in a SharePoint calendar right from Outlook to keep their personal calendars up to date.

Workflow

SharePoint includes its own Workflow engine which allows information to generate other actions. So, a new document might create an email asking for authority to proceed. Or, a Change request might automatically escalate to management if it is over a certain value or impact.

Where do we go from here?

Creating an enterprise project management environment the way we've described here can be done very quickly but what happens when your organization evolves? What happens if you are so successful that even more projects must be added and even more work flows through your project group.

Well, the good news is that the tools that are included here are each extremely extensible and extremely flexible.

With Microsoft Project, the obvious extension is to Microsoft Office Project Server. Project Server provides a wide range of functionality and a SharePoint-based user interface called "Project Web Access." If you move to Project Server, don't worry about TimeControl, it also includes a link to Project Server and it can be installed right into Project Web Access so your users won't suffer any interruption at all. Project Server also includes its own API for creating more extensions and interfaces that can add functionality that even Microsoft hasn't thought of yet.

TimeControl includes links not only to Project Standard and Professional but also to Project Server and other tools. There is really no limit to the number of users and range of function that can be added to TimeControl. Start with a basic installation and then look to what other corporate systems TimeControl can be linked to provide even more integration and even more efficiency.

SharePoint's obvious upgrade is from Windows SharePoint Services to Microsoft Office SharePoint Server. When you move to the more extensive system, you can start thinking about corporate portals, intranets and enterprise search. Enterprise Searches could even be created to present formatted data from Microsoft Project Server or from TimeControl.

Reporting and analysis can be extended using the tools included with SQL Server such as SQL Reporting Services and OLAP Services. Need a dashboard? Try server-based Excel spreadsheets with all the conditional formatting that is now available or, graduate to Microsoft's PerformancePoint to do data mining and Business Intelligence analysis.

The Matrix organization timesheet challenge

Challenge: Timesheet data must be approved by both the organizational element of the organization and the project or account element. This is most typical in a matrix organization where staff are managed by their department leaders and project managers must use staff from across multiple departments to accomplish their projects.

Response: TimeControl's *Matrix Approval Process for Labor Actuals*™ is designed to allow both Departmental and Project leaders to approve the timesheet data that is critical to them.

A matrix organization is set up in two dimensions. On one axis there is the organizational structure. This structure is sometimes the traditional hierarchical structure of an organization with supervisors reporting to department heads who report to a more centralized authority. At other times it is a more autonomous Resource Management structure where someone is responsible for the training and availability of a certain category of resource.

On the second axis is a work breakdown structure. This can be imagined as the top level being all work the organization does, the second level being, perhaps a project level with one entry per project and a third level being the tasks within that project. Obviously for more complicated projects, additional levels could be generated. This work will be managed by project managers who report to a more central authority and are responsible for the results of the project.

"It helps us identify our costs. Especially because we can see who's working on what projects, and how much time it's taking each individual to do a specific task."

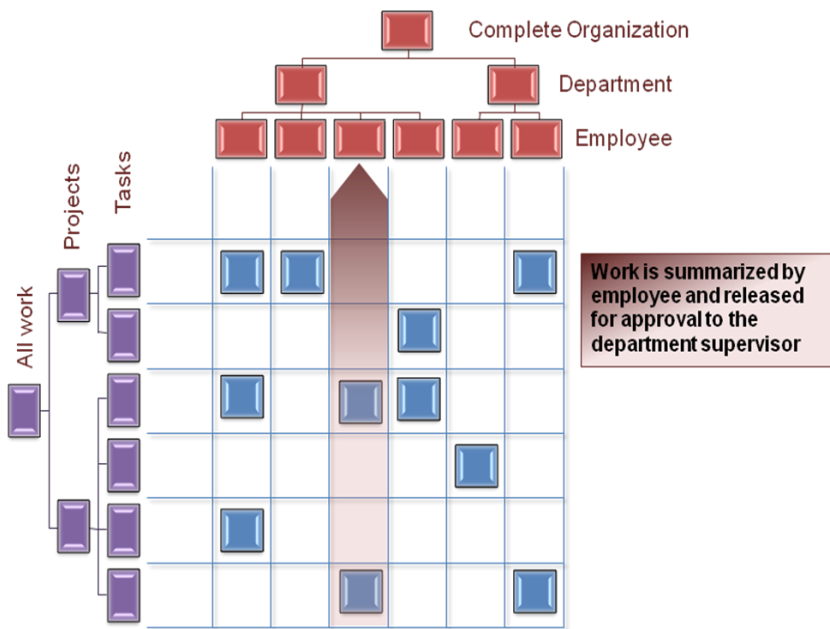
Rafael Silva,
ACR Systems

The matrix occurs where the project managers make requests of the resource managers for the resources required to accomplish the project. The project manager must contend with resources which come from a variety of sources. The resource manager must contend with their resources being used (sometime simultaneously) on a variety of projects.

The problem with this environment is that the hierarchical or organization breakdown structure typically collects time for reasons of "time and attendance" for payroll purposes and sometimes for purposes of "time and billing" for either internal and/or external invoicing. The requirement for such a system is generally payroll oriented. The requirements are usually quite simple. For salaried staff the only thing the payroll system requires is the number of days worked. If there was time not worked, the payroll system might also track such items as holidays, vacations and, paid or unpaid sick leave. For staff who are paid hourly, there is a further requirement for the number of hours worked and the rate at which work was performed such as standard or overtime.

For better or worse, most timesheet systems in use today have been established by the finance department for time and attendance purposes.

If billing is also automated, then there is an additional requirement put on the timesheet environment. In this case the timesheet system may also be required to provide more description to the invoice such as the project name being worked on and perhaps the category



of work being done. Such billing is often done monthly and is often a part of the month-ending process by Finance.

All of these finance-oriented functions are generally historical in perspective. The furthest forward a financial system will look is the status date of currently collected data.

The authorization process for this level of functionality is from the employee to their supervisor from there to the department level then on to the payroll department.

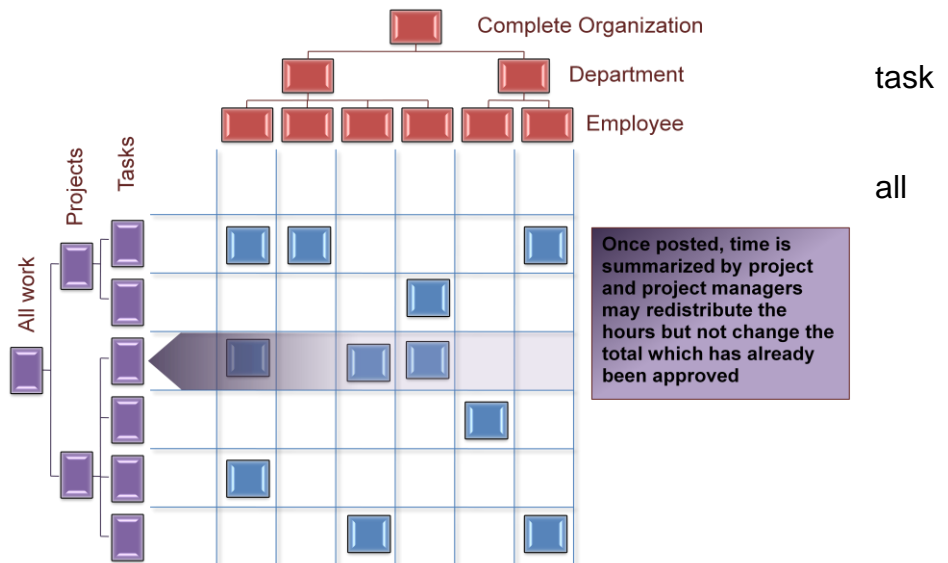
Unfortunately for the project managers of the organization, their requirements for time collection are quite different. A project manager needs to know what hours have been spent on which tasks. This will enable them to produce a budget vs. actual analysis and forms the basis of forward forecasting. The project manager also needs to know what progress has been made on a particular task or, more exactly, what the Estimate to Complete is.

The project manager has virtually no interest in which employee actually did the work or in how many hours a particular employee may have worked in the past week.

Unlike Finance, Project Management is future-oriented. The project manager's job is to consistently look for what is left to do. While the project is in progress, the oldest data of interest to the project manager is the current reporting period (e.g. the past week or past month).

The authorization for project data is done by and aggregated to the project level. Each project manager must approve of charges against the project for each period.

Yet another issue to further complicate an already unworkable situation is the conflicting requirement for the timeliness of the data.



Payroll must have the timekeeping data quickly in order to produce the payroll. Yet, returning timesheet data to other

systems usually has to wait until the current financial cycle is complete. This often means that project managers often cannot see the timesheet data for as long as 6 weeks after it is spent. Why? For example: If an employee enters his timesheet on the first day of the month, it will not be summarized by Finance for redistribution to other systems until month's end. By the time the month is "closed" it could easily be the middle of the month following.

This is, of course absolutely unacceptable to Project Management. By the time this data can deliver a useful variance report, whatever opportunity existed to make an impact on the project has been lost. Most project managers need to know the actual labor costs within a few days of when they were spent not a few weeks.

TimeControl's Matrix Approval process is designed to first approve the total hours and any payroll or HR oriented information such as vacation, sick leave, personal time off etc. This information is then locked by TimeControl and the timesheet information is made available to Project or Account Managers to look at the data not employee-by-employee but project-by-project. First of all, Project and Account Managers are assured that they are looking at 100% of the week's labor for that project. This is very important to ensuring that any adjustments are done in context of the overall charges to the project. Project Managers are given the ability to redistribute the hours through a Debit/Credit function but not to change the total. All changes are distinct and are audited. In this manner both Finance and Project Management can deal with the information required for their purposes without interrupting, delaying or interfering with the other.

In today's challenging economy, tracking productivity is more important than ever. It is no longer enough to know only how much time has been spent. Now management demands that you know what was done with the time. Many organizations are turning to project and task based management as a way of being more effective. One of the most difficult aspects of implementing project control is the capture and approval of labor actuals. *TimeControl* provides an electronic timesheet system designed to serve both Finance and Project Management

Open Architecture

TimeControl is an open architecture system which supports a variety of databases including Microsoft SQL Server, Oracle and Sybase. Customizable user profiles allow the *TimeControl* interface to be tailored to each user's requirements.

Timesheet Approvals

TimeControl supports HMS Software's unique Matrix Approval Process for Labor Actuals which allows for quick authorization of project data. This process resolves the inherent conflict that is found when both the financial and project management hierarchies must approve timesheet data simultaneously. Automated validation of timesheet data is handled by *TimeControl*'s remarkable Validation Rules. Additional approvals can be done manually with a simple Approve/Reject or Approve Update process. The Project Manager Validation screen displays an easy-to-view hierarchical interface for managing project approvals.

Total Flexibility with User Profiles

TimeControl's User Profiles allows the Administrator to determine which menu choices, reports and fields are accessible by each user. The entire interface can be tailored to the user's individual needs. No other system on the market today offers this much flexibility.

Field level security ensures that only the information which is important to each user, is displayed. Fields can be made read-only or invisible, removing them from view entirely. This makes *TimeControl* at once a secure, deployable system and an easy-to-use one as well.

Links to Project Management Systems

TimeControl includes direct links to project management systems including Deltek's Open Plan and Cobra, Microsoft's Project, and Project Server, and Primavera's line of project scheduling tools.

Integrating with a project management system drastically reduces timesheet errors as only valid tasks will be available in which to charge time. Hours entered in *TimeControl* are returned directly to the project management system as activity and resource progress.

TimeControl also supports customizable export formats for integration with virtually any financial or HR system.

E-mail Enabled

TimeControl allows email notification to be sent for various events such as timesheet rejection or missing timesheets, incomplete or non-approved timesheets.

Expense Reports

TimeControl includes extensive expense report functionality. Users can enter an unlimited number of expense report items for each timesheet line.

Reporting

TimeControl's reporting engine looks just like Excel™. Reports can even be saved in Excel or HTML format.

TimeControl's Reporting Wizards make report generation easy. *TimeControl's* field-level security is always active so only the fields which a user has permission for will be shown.

Predefined reports are available in a variety of formats which include posted timesheet data, table lists, printouts of the timesheets themselves and missing timesheet reports.

“Cutting just \$1 of operational costs could have the same impact as increasing revenue by \$13.”

CFO.com
Randy Myers Survey

TimeControl Sample Client List

Engineering/Construction

Lockerbie & Hole
AeroInfo
Koch Business Solutions
Kongsberg Devotek
Thompson Beta

Gas / Utilities

Gulf South Pipeline
Acergy
Petrocon
VenCorp

Manufacturing

Alcan
Parker Hannifin
Dofasco
Georgia Pacific
John Deere
Magneti Marelli
Mercury Marine
Tennant
Wagner Spray Tech
Vision Systems

Defense / Aerospace

Bombardier Inc.
CAE Electronics
General Motors Diesel
Lockheed Martin
Rolls Royce
SAAB

Government

Amsterdam Port Authorities
Atlanta Airport
City of Montreal
Dutch Railways
Toronto Transit Commission
Government of Saskatchewan
Railway Procurement Agency (UK)

Technology

Arivia
CSI Piemonte
DRS Power Control Tech
EDS
Face Technology
Fuel Plus Software
GE Access
Lockheed Martin
Microsoft
Positron
Psion Techlogix
DRUCK Ltd

Telecommunications

Cable & Wireless Bartel
Ericsson
EXFO
Motorola
Philips Semiconductors
SARA Amsterdam
Stratos Global

Financial

Standard Life
Development Bank of Canada
Alliance One

Health/Pharmaceutical

Boehringer Ingelheim
Azko Nobel (Organon)
RTS Thurnall
Canadian Institute for Health Info
logen
Registat

About HMS Software

HMS Software, a division of Montreal, Canada-based Heuristic Management Systems Inc., is a leading provider of enterprise timekeeping systems for project environments.

Founded in 1984, HMS Software's expertise in implementing enterprise project-oriented and activity-based-costing systems is recognized worldwide by some of the world's largest organizations. Project oriented products and services from HMS have been used to plan some of Canada's most recognizable products including the Hibernia Oil Platform, Hydro Quebec's James Bay development, Ontario Hydro's nuclear station refurbishing and InterProvincial Pipeline's cross-country pipeline network.

HMS's signature product, TimeControl, an enterprise timekeeping system designed to serve the needs of both Finance and Project Management, is distributed worldwide through an extensive list of distributors and dealers located on every continent with representatives in the US, the UK, Australia, Mexico, Europe, Asia, South Africa and the Middle East.

HMS Software's client list includes some of the world's leading corporations in the telecommunications, IT, finance, engineering, defense/aerospace and government sectors including such organizations as Acergy, Alcan, the Atlanta Airport, Akzo Nobel, The Canadian Business Development Bank, The City of Montreal, EDS, Ericsson, General Motors, the Government of Saskatchewan, John Deere, Kelly Services, Lockerbie and Hole, Motorola, Organon, Standard Life, UPS, Volvo Novabus and hundreds of others.

HMS maintains offices in Montreal, Quebec and Toronto, Ontario.

For more information about HMS, please visit our website at www.hmssoftware.ca.