My Time Entry (MTE)
UC San Diego’s Online Time and Attendance
My Time Entry

Project Information

The following information is being submitted for consideration for the 2013 University of California Larry L. Sautter Award for Innovation in Information Technology.

Project Title:

My Time Entry: UC San Diego’s Online Time and Attendance

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My Time Entry

Summary

MyTime Entry (MTE) is UC San Diego’s new online time and attendance reporting tool for employees to report time to their supervisors and timekeepers. With over 24,000 campus employees, the process to ensure accurate and timely payments to employees requires a successful timekeeping process.

Online time and attendance tracking reduces human error and strengthens productivity, FMLA compliance, revenue, and pay-outs upon separation or retirement – effecting the bottom line.

For this reason, the Payroll Office and Administrative Computing & Telecommunications (ACT) departments partnered to create MTE, a powerful and user-friendly tool that provides significant cost savings, increased efficiencies, and improved accuracies for UC San Diego.

Since the launch of MTE in 2012, it has been gaining in popularity around campus. Currently, over 6,000 UC San Diego employees electronically submit time and we expect, with the introduction of our new mobile edition available for tablet or smartphone users, that adoption will continue to grow.

Description

With MTE, paper timesheets have been replaced with a user-friendly interface that helps promote a greener campus. The system provides:

- A centralized timekeeping process across departments
- A user friendly interface for employee self service/entry of time and attendance
- Electronic time approval
- Integrated employee timekeeping data
- An enterprise repository for supervisory and employee relationships related to appointment
- Automated calculations and spreading for holiday pay, overtime, premium overtime, base earnings, and distribution of labor using current distributions
- Automated retroactive comparisons for adjusted pay periods
- Integrate with Payroll systems
- Mobile edition
- Graphical calendar interface

Roadmap

MTE is a collaborative effort between Payroll and ACT and together we continue to expand functionality for the campus. Our two year road map includes enhancements for:

- Support for Employees Working for Multiple Departments
- Support for Multiple Timekeeper Timecard Review Within A Department
- Configurable Job Names
- Customizable Job Schedules
- Shift Reporting (Time In and Time Out)
- Shift Differential Automated Calculations (Based on PPSM)

UC Path Ready

The MTE application was designed to be modular and highly adaptable with multi-campus use in mind. As a result, the technical architecture, service oriented architecture (SOA), is UC Path ready.
Cost Savings

The value propositions are achieved at all levels of the time reporting hierarchy. The hierarchy levels include employee, supervisor, timekeeper, and central payroll.

MTE allows employees to report and route time and attendance electronically; Supervisors to approve and deny time reported electronically; Timekeepers to bypass manual calculations associated with holiday, overtime and the allocation of labor; and Central Payroll to automate the validation of transactions.

The requirements along with the associated value propositions and benefits/cost savings are summarized below:

<table>
<thead>
<tr>
<th>Role</th>
<th>Workload Reduction using MTE</th>
<th>Total # of Campus FTEs</th>
<th>Estimated Cost Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisor</td>
<td>15% of 10 hrs/month</td>
<td>9925 (250 departments)</td>
<td>18 hrs/year * $40/hr * 9925 = $7,146,000</td>
</tr>
<tr>
<td>Timekeeper</td>
<td>70% of 32 hrs/month</td>
<td>218 (250 departments)</td>
<td>269 hrs/year * $20/hr * 218 = $1,173,000</td>
</tr>
<tr>
<td>Central Payroll</td>
<td>20% of 173.33 hrs/month</td>
<td>17</td>
<td>416 hrs/year * $30/hr * 17 = $212,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>$8,531,000</strong></td>
</tr>
</tbody>
</table>

Technologies Utilized in Project

The application is built on the Java Spring Framework and UC San Diego’s JLink Framework, DB2 database, and runs in an Apache Tomcat container. Data access for the MTE application was designed to leverage a Service Oriented Architecture (SOA). This design choice allows for:

- Effective management of change
- Data integrity, designed isolation of campus data
- Communication with other technologies
- Independent management of data by each campus
- A flexible foundation to provide MTE in the future as software as a service (SaaS).

Branding:

- ACT’s User Experience & Technologies (UTX) stack allows for configurable decorators, navigation, and styles. Using Spring’s localization, these configurations can be more easily managed in a multi-campus environment.

Authentication:

- Shibboleth Single Sign-On provides a standard interface for authentication.

Authorization:

- UC San Diego’s Roles Engine provides a centralized reusable location for roles management with existing workflow and audit built in.

Interoperability:

- Consumed data is accessed through the service layer. Source, location, structure, and technology may all change over time without modification to the application as long as the service interface is not modified. MTE pluggable services include PPS, directory Information, LASR balances, and authorization information.

Rich User Interface Design
My Time Entry

- Using Ajax, Cascade Style Sheets, jQuery/YUI (JavaScript rendering and dynamic tables) technologies results in rich interfaces having faster response times and reduced web requests and responses to and from the server.

Rich Interactive jQuery Calendar

- Click to create events
- Drag and drop events to different days
- Click and drag to create events expanding across multiple days

Design: Encapsulation of Data and Pluggable Objects

- Time, attendance, and calculated data encapsulated into Timecard objects.
- Pluggable Calculation and Spreading Engine to allow for distinct algorithms for various employee types such as Biweekly or Monthly, Exception or Positive reporting, etc.
- Faster object comparisons. For example, Timecard comparison to determine the retroactive difference between reporting periods.

Timeframe

- 2008: Tiger Team
- 2009: Project Initiation
- June 2009 – June 2010: Project Planning
- June 2010 – May 2011: Project Development, QA, UAT
- June 2011: MyTime Entry Phase 1.0 Released
- Release 1.5.x (June 2012)
  - Biweekly Exception Reporting Support
  - Timecard Status Activity Reporting – Depicts Timecard State Throughout Workflow
  - History Reports for Time Approvers
- Release 1.6.x (September 2012)
  - Notes For Timekeeper Use Only
  - Reporting Enhancements for Time Approvers
- Release 1.7.x (December 2012)
  - Role Management for MTE Application Admiration
  - Read Only View As Any User for Support Staff
  - Support for UC Path Biweekly Conversion
- Release 1.7.5 (February 2013)
  - Rollout of UC Path Holiday Pay for Biweekly Employees
  - MTE Mobile Application for Timecard Entry and Approvals

Objective Customer Satisfaction Data

Below is a sampling of the many positive client responses we have received.

“*My Time is very well liked in my department of Admissions and Enrollment Services. I have about 120 employees who are very happy they can access and report their time from anywhere there is internet. They love that it’s paperless and the fact they can go back into it and report more hours or make changes if need be. My supervisors are very happy with it too because they can go into it from their ipads, laptops, or iphone where ever they are even if they are traveling and approve their employee’s time. It just seems much more practical.*”

-- Payroll Processor – Registrar’s Office
My Time Entry

“I love the mobile app, I like the fact that I can enter my time or approve my employees time from anywhere. I don’t have to be in my office to approve their time. The app is simple and intuitive to use. I haven’t seen that many apps that you can take with you (in your mobile device) to help you do your work. I also like the feature that my supervisor get automatically notified that I have entered my time.

-- Supervisor - Payroll

The My Time Entry application is certainly a time saver. It is customer oriented and easy to use. I appreciate being able to handle time entries electronically.

-- Director – Equal Opportunity

The implementation of MTE and associated smartphone application have been instrumental in streamlining our timekeeping process and increasing efficiency because of its easy access, practicality and ingenuity. As a healthcare provider, our professional staff are consistently busy and would forget or were tardy in submitting timesheets by the designated deadlines and we would process 1-15 special check requests on a monthly basis. Since implementing MTE, we have increased our efficiency in noting a substantial decrease in special check requests as we now receive only 1-2 of such requests. This is due in part to the easy access of MTE as employees can submit timesheets from any computer with internet access or via their smartphone. The easy access via the smart phone application in particular has been a contributing factor as they can submit or approve time at any time of the day and from almost any place in the world.

MTE has also made an impact to our department budget because of the ingenuity of automatic overtime calculation. 65% of our career staff are eligible for and receive overtime pay which they would note on their paper timesheets. Processing these timesheets was a lengthy process for me as a timekeeper in that I would need to differentiate between and calculate Straight and/or Premium Overtime then enter the totals for pay out. As well, employees who are funded through multiple sources at variable percentages would also require additional time the division of these entries would be needed. To compound matters, medical professionals are notorious for illegible handwriting and verbal or written communication would also occur to assure accuracy which would slow down the process or contribute to a missed entry deadline.

Prior to MTE, I would log 2-3 hours of premium overtime on a biweekly basis and now only require .50-1 hour a month to process timesheets and note a decrease in human error when calculating, differentiating and entering overtime pay. An overlooked impact of the MTE is the level of accountability that exists between the employee, supervisor and timekeeper. During the onboarding process, employees are shown the pop-ups noting that the timesheet has been approved then processed by the timekeeper. This has served as a reassurance for employees in knowing where to look and assure that a paycheck is forthcoming. Likewise, they feel empowered in knowing who to contact when items are not processed in a timely manner. The superb level of customer service and outreach demonstrated by the Payroll and ACT personnel is to be commended.

-- Human Resources Specialist- Department of Ophthalmology

References:
- http://blink.ucsd.edu/finance/payroll/timekeeping/mte/
- Online web tutorials http://webtutorials.ucsd.edu
Appendix

Appendix A

MTE Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT</td>
<td>UC San Diego’s Administrative Computing &amp; Telecommunications department</td>
</tr>
<tr>
<td>BFS</td>
<td>UC San Diego’s Business &amp; Financial Services Department</td>
</tr>
<tr>
<td>LASR</td>
<td>Leave activity summary report</td>
</tr>
<tr>
<td>OTP</td>
<td>Premium overtime</td>
</tr>
<tr>
<td>OTA</td>
<td>Straight overtime</td>
</tr>
<tr>
<td>PPS</td>
<td>UC’s Payroll Personnel System</td>
</tr>
<tr>
<td>Retro Difference Period</td>
<td>The difference between two timecards submitted for the same pay</td>
</tr>
<tr>
<td>TAR</td>
<td>The time and reporting web application used by timekeepers to key enter time and attendance</td>
</tr>
</tbody>
</table>

Appendix B

MTE Mobile

We analyzed how our users would use MTE on their mobile device. Not only does online timekeeping meet employee needs of working in the field, travel, and remote access, the features we provide make it easy to use. The mobile calendar component of MTE has been well received.
Appendix C

MTE Application Roles/Screens

BEFORE
The diagram below shows the complexity of the manual paper process, the use of external systems to obtain leave data, and the timekeeper data entry into UC San Diego’s TAR application (paper tasks vary by department).

AFTER
With MTE there are no external systems, users in all roles are provided with the data they require and all processes are automated within the application.
Appendix D

MTE Application Roles/Screens

Employee Time Entry

Employees use the time entry screen to:

- Review their employee summary for current appointment information, leave balances, and timekeeper and supervisor contact information
- Review current and past timecards up to a year back
- Submit their timecard for supervisor/time approver review and approval
- Adjust past timecards and re-submit for supervisor/time approver review and approval

Figure 1. Employee Time Entry
Supervisor/Time Approver - Timecard Approval

Supervisors, or alternate time approvers, use the pending time approval work queue to review and approve or deny employee timecards. Once a decision is made, an email is sent to all involved parties.

![Figure 2. Supervisor/Time Approver - Timecard Approval](image)

Timekeeper Reporting

Reporting provides timecard summary, details, and worksheets to quickly review and process timecards.

**Timecard Detail Report**

Timekeepers may see a complete picture of a timecard’s pay period for each reporting period it was submitted. If a timecard has been adjusted, the retro difference section displays the adjusted values.
Timecard Worksheet

Timekeepers use the calculate spreading worksheet to process timecards through to the TAR system and on to PPS. The application automatically calculates REG, overtime, and holiday hours. All reported hours and calculated hours are compared between reporting periods so only the timecard adjustment is processed. These hours are then spreads to the funding sources. Timekeepers will be alerted to any conditions that require their attention, e.g. time reported in excess of leave balances.

Timekeepers may modify calculated values and alter the distribution across funding sources.
Timekeeper History

Historical reporting is available for processed timecards. As with the detail report during the timecard processing, this report provides the complete picture of a timecard. It includes reported time via a calendar view, reported time detailed list view, approval status, total summaries, appointment summaries, retro difference, distribution spread accepted by the timekeeper. Timekeepers may compare each version of the timecard if it was submitted for more than one report period.

Timekeeper Administration

Administrator’s can modify the default due dates for each pay period. Setup employee’s overtime designation, alternate email address. View supervisory and work directory assignments and link to the Roles system to update.
# Appendix E
## Value Proposition Details

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Value Proposition</th>
<th>Benefit /Cost Savings</th>
</tr>
</thead>
</table>
| Elimination of Paper Timesheets  | • Eliminates the distribution and collection of paper timesheets  
• Reduces delays and eliminates “lost” timesheets  
• Protects/secures sensitive appointment/job information | • Eliminates the need to print paper timesheets (100% reduction in costs associated with printing of timesheets on paper)  
• Elimination of the manual distribution and collection of paper timesheets (15% reduction in process time. 5% supervisors ; 10% timekeepers) |
| Employee Self Service            | • Authenticates employee  
• Provides audit trail  
• Standard On-line entry process  
• Provides users with immediate on-demand access to timesheet data and historical information  
• Maximize efficiencies by capturing the time entry at source  
• Provides for a standard UI  
• Aggregates employee data in a simple single screen  
• Automates retroactivity for date sensitive time reporting  
• Built in entry edits to improve compliance, implement policy, enforce labor laws and validate data | • Standardize entry will allow for the use of a self-service online training model that will minimize time away for office.  
• Edits and electronic verification will improve the quality of the data and reduce missing or “unsubmitted” time (17% reduction in workload for central payroll)  
• Increased user satisfaction with the process via intuitive UI and single screen information  
• Eliminates the need for creating manual reversal of retroactive time by employees |
| Electronic Time Approval          | • Authenticates supervisor  
• Immediate notification of pending action  
• On-line approval/denial  
• Single touch point | • Eliminates retention and verification of signature facsimiles.  
• Ability to track status of time  
• Timely approvals of employee time  
• Eliminates the physical routing of forms to obtain signatures (5% reduction in process time) |
| Timekeeping and Supervisory Roles Repository | • Enterprise roles repository allows for the use of relationship in other applications  
  • Supervisory relationships tied to appointments in Payroll Personnel System  
  • Ability to assign multiple “sub” supervisors or time approvers  
  • Email notifications for pending approvals | • Up to date supervisor association for other applications  
  • Flexible to allow for “approver” roles. |
|-----------------------------------------------|-----------------------------------------------------------------------------------|
| Automated Calculations and Spreading against current distributions | • Automated calculation of overtime, premium overtime and holiday pay.  
  • Automated classification of overtime as payment or compensatory time based on employee election  
  • Implements spreading based on most current distribution  
  • Override capabilities for automated calculations for exceptions or exclusions | • Automation of calculations (25% reduction in process time for timekeepers)  
  • Automation of spreading (15% reduction in process time for timekeepers) |
| Computer Interface | • Interface eliminates key entry to facilitate timekeeper review and analysis | • Elimination of key entry into TAR/PPS compute (15% reduction in process time for timekeepers) |