1. Introductory Overview

The Welfare Client Data Systems Consortium (WCDS), in response to Federal requirements, developed a modern, technological solution for efficiently administering public assistance programs and providing quality service to the communities. This fully implemented solution, an application called the CalWorks Information Network (CalWIN) is an integrated on-line, real-time automated system with 26 subsystems to support the complexities of 14 federal, state and local public assistance programs including eligibility and benefits determination, client correspondence, management reports, interfaces and case management.   CalWIN, the largest system of its kind in the nation, assures the accurate and timely delivery of benefits to more than 2.6 million California families in need, serving 43% of California's caseload across 18 counties. CalWIN supports the work of approximately 30,000 county employees along with various business partners, in over 850 sites, providing timely services to California's neediest citizens.   CalWIN includes 30 functional areas, 12 State and Local interfaces, approximately 1,300 online windows, and 16,000 data elements.

The implementation of CalWIN has helped consortium counties to significantly improve staff productivity. Automated business processes have provided remarkable savings over past business approaches. Examples include: reductions in case volumes and storage requirements; elimination of forms and reports; simplified caseload management; increased referrals for employment and training; and child care and supportive services. The CalWIN Application provides benefit to many stakeholders as well.   CalWIN's multi layered role-based security, audit capabilities, error prone and transaction sampling functionality work in concert to identify, track, resolve and minimize fraudulent activities. Clients and county workers realize benefit in reduced error rates and forms in addition to expedited benefit issuance. Features of the system allow county workers to coordinate benefits across programs to better align the services delivered to clients. The case management component of CalWIN enables the counties to use readily accessible information to measure the effectiveness and outcomes of various service programs. Since implementation, CalWIN has maintained its progressive and innovative stance as the application continually evolves to meet not only changing state and federal requirements, but to improve service delivery to those most in need. CalWIN has continued its forward   momentum with the implementation of specialized new functionality, interfaces and tools.   Through these innovative new technology enhancements, CalWIN maintains its focus on improving efficiency in business operations, implementation of specialized interfaces which enhance cross-boundary communications, ensuring greater accuracy in benefit issuance, and a continued focus on providing enhanced methods for exceptional customer service delivery.

Enhanced functionality, such as the dynamic generation of over 3.5 million client correspondence per month in 14 different languages, ensures that CalWIN meets the specialized requirements and diverse business processes of the multi-county consortium. Leading-edge technology applied to strategic initiatives, such as enhanced client self-service and integrated voice response, extends CalWIN's vision to enable the access to benefits anytime, anywhere and in the fashion that best serves the needs of the client.

2. The Importance of Technology- How did the technology you used contribute to this project and why was it important?

CalWIN is built on the **EDS Eligibility Solution,** the *first* service oriented architecture in Health and Human services systems. This solution, which is a vertically and horizontally scalable Service Oriented Architecture (SOA), provides web and enterprise browser-based services. The CalWIN architecture is built to allow for implementation of best practices and principles which empower IT to rapidly implement solutions in response to emerging business needs. This is critical as CalWIN must continually meet the ever-growing list of challenges counties face as public needs and government direction evolves.

Within CalWIN's architecture, the n-tier employs enabling technologies including access devices (desktops, laptops, phone, touch panels, etc.) printers, routers, switches, local area networks, wide area networks, public switched telephone networks, Internet, functional servers (appliances), enterprise servers and Web application servers. This technology enables access to CalWIN via a diverse range of county configurations. CalWIN's architecture provides a near-linear scalability which allows the WCDS Consortium to realize its current objectives while providing the flexibility to adapt to future needs.

CalWIN's architecture is built on the following principles:

- **Business Process and IT Convergence—**Business process-driven design philosophy to reinforce business practices, minimize the impact of change, and maximize code reusability and uniformity.

- **Granularity—**Business-level granularity of the application design delivers the appropriate level of service exposure, providing a concise and maintainable future pathway to access the services.

- **Scalability and Performance—**Service-based architecture supports scalability and performance. Services are based on a low-latency online transaction processing (OLTP) design to support performance metrics to meet service levels.

- **Isolation—**Design philosophy enforces data isolation to make code maintainable. SOA abstracts data from interface layer.

- **Data Independence—**Strong data modeling concepts provide a robust and scalable data architecture, relying on constraint-level checking implemented at the relational database management system (RDBMS) level to support data integrity.

- **Flexibility—**Flexibility is required to support changing business needs.

- **Open Architectural Foundation—**Protection of investment is provided in face of evolving industry architectures by incorporating new and evolving contractor-supported architectural components, such as Web-based SOA.

- **Reliability—**High-availability, load balancing, and fail over aspects are available within the architecture

3. Benefits-   What new advantage or opportunity does your project provide to people?

   The CalWIN system is the largest eligibility system ever implemented in the nation, providing benefits to more than 2.6 million families and individuals every month. Originally designed to support the County staff within the County Social Services department, CalWIN has recently been expanded to provide the capability for clients to inquire and apply for benefits and services without ever leaving their homes. Although counties still welcome a face-to-face interview with individuals applying for benefits, this new functionality has been provided in response to the increased demand for access to services directly related to the economic crisis currently facing this nation. Just think how helpful it is for a family in need to simply apply for services using the local library internet connection or even from their own homes. No longer is it necessary for them to travel to the local County agency only to wait in over crowded waiting room to find out if they are eligible for benefits or not.
This new service called "Benefits CalWIN" offers the ability for any person to find out whether they may be eligible for benefits and easily apply. If the inquiry indicates that eligibility is likely, the application process may be initiated immediately. The client simply supplies all of the necessary household information and clicks the "submit" button. The information is sent to the appropriate County office where the client information will be validated and the application process begins.
Not only does Benefits CalWIN provide the ability to apply for services, but it offers the ability to recertify clients already receiving benefits. Recertification of benefits They merely confirm the household information and attach scanned documents of required verifications. That's all, there is no need to go to the local office and take a bunch of photocopied papers. It's all done on line and from the convenience of their own home.
The new self service model has positive impacts for the County agencies as well. The eligibility worker no longer has to ask each and every question of the client and then enter it in CalWIN; the client does this for them! Lobby traffic and the need for individual appointments are cut down and more clients can be served. Counties can even consider setting up a kiosk in their lobbies so that clients may complete the information while they wait.

4. Originality- What are the exceptional aspects of your project?

Since implementation, CalWIN has maintained its progressive and innovative stance as the application continually evolves to meet not only changing state and federal

requirements, but to improve service delivery to those most in need. CalWIN has continued its forward momentum with the implementation of specialized new functionality, interfaces and tools. Some of these exceptional aspects of CalWIN include:

Client Correspondence

The CalWIN Client Correspondence system, a vital component of CalWIN, manages and maintains a variety of correspondence used to communicate critical and often time-sensitive information to CalWIN clients, providers, and other agencies.
The CalWIN Client Correspondence system was developed to support the creation and ongoing maintenance of the numerous correspondences required for the various Federal, State, and County assistance programs. The automated system, which replaced the cumbersome, static, manual processing of "shelf-stock" forms, is capable of producing dynamic correspondence with client specific information in 14 different languages, the most for a system of this kind. Due to the ever increasing volume of correspondence produced, the Counties' reliance on an automated solution is critical. Currently, the CalWIN Client Correspondence system manages and generates over 3.5 million correspondences on a monthly basis with a steady increase of over 150 % in the last calendar year.
The CalWIN Client Correspondence system's innovative architecture and database structure enable the system to expand as new federal, state, or county requirements emerge. In response to a recent state mandate, which required an increase in supported languages, the CalWIN Client Correspondence solution was able to dynamically add the new languages without requiring a coding effort of the system to implement.

"Benefits CalWIN"- Customer Self-service Access

"Benefits CalWIN" offers the ability for any person to find out whether they may be eligible for benefits and apply, via the Internet, without visiting a County agency. If the inquiry indicates that eligibility is likely, the application process may be initiated immediately. The client simply supplies all of the necessary household information and clicks the "submit" button. The information is sent to the appropriate County office where the client information will be validated and the application process begins.
Not only does Benefits CalWIN provide the ability to apply for services, but it offers the ability to recertify clients already receiving benefits. Clients merely confirm the household information and attach scanned documents of required verifications. It's all done on line and from the convenience of their own home.

Rules Engine- Improving Workflow and Administration of Child Care Services

In response to extensive county policies and procedures, which have been established to meet the Child Care services needs of the California Department of Social Services (CDSS) and the California Department of Education (CDE), specialized new Child Care Service delivery capabilities were introduced into the CalWIN application.

These capabilities allow the administrative collaboration and case management of multiple child care programs, from one central interface.

Through the integration of an Eligibility Framework Rules Processing Engine, automated eligibility is determined for specific child care programs (Stage 1, Stage 2 or CAPP) and their respective funding sources (State or Federal) based on a variety of detailed criteria. Implementation of the *Rules Engine* facilitates long-term maintenance of the criteria and respective results via a user interface rather than hard-coding eligibility logic.

5. Difficulty

Difficulty (A)- What were the most important obstacles that had to be overcome in order for your work to be successful?

As with any new implementation, specifically those large in size, the human factor of change can be one of the most daunting components. With more than 30,000 end users to train and 1.7 million cases to convert, all while ensuring no interruption in the delivery of client benefits, a highly organized strategy was essential to the overall success. Communication was a key factor in the CalWIN strategy. Consistent and frequent interaction between all CalWIN stakeholders, specifically WCDS, EDS/HP and the Counties was critical in our ability to identify and mitigate risks and issues at each stage of the project.

The implementation of CalWIN faced several business challenges including:

- Integration with multiple public assistance programs, including county based programs
- Multi-county and remote site implementations, diverse in both size and infrastructure
- Large geographic location with multiple State stakeholders
- Multiple County business processes, and a core need for standardization
- Budgetary Reductions

Several budget reductions during the development and implementation phases presented a significant challenge, resulting in the need to maximize the transition experience with less than half of the original training and conversion testing than was originally planned. With a reduction of this magnitude, it was necessary identify solutions to provide appropriate training and ensure the best possible converted data, even after budgets were cut. As a result, a multi-tiered approach was employed with two main components.

Training

The task was twofold; provide effective regional training to minimize time away from the office, and to provide supplemental training intended to reinforce the learner's experience.

As a result, creative solutions were put in place. Semi-trucks, outfitted as classrooms, provided a mobile training solution which could bring the training to the learners. This

approach was very well received as it allowed staff to periodically check-in with the office and take care of critical matters, while still attending their training sessions. "Mock go-live's" were staged, to reinforce the learner's experience, using a sample of the Counties live data, while in a role-playing scenario.   This approach allowed County staff to walk through learned functions in a live environment scenario while still in a "practice" mode. "This was so helpful for me to understand the system and tie it together with our new business process" stated Cindy from Placer County, the Pilot County. When asked if she would recommend this for other Counties, Cindy replied, "Absolutely".

This new practice became so popular with the Counties that the State includes this function as part of the recommended go-live tasks for automation projects.

Conversion Process
Converting a 30-year old legacy system to the "data rich" CalWIN system required a strategy which included a process for those cases which could convert easily as well as cases which would need to be aided by a default value in order to make each case whole and functional in the new system.

The overall approach, which required the conversion of nine source systems, comprised a combination of data translation, purification, full load conversion, testing and final validation. The data translation contained over 930,000 fields, each needing to be mapped to the new system value. Through this "data purification" process, opportunities to improve the source data were revealed.

Following Data Purification, the Conversion Test phase employed a full production copy of County data, simulating a full go-live conversion. This process allowed the Counties to refine and increase their data conversion success rates to over 98% across the Consortium.

The final phase, Conversion Validation, was developed to ensure that each and every case was producing the expected results while doubling as a learning opportunity to assist in reinforcing the new CalWIN skills of the learners.

6. Success-
How do you see your projects success affecting other applications, organizations or global communities?

The implementation of CalWIN employed a focused, strategic effort to improve business process efficiency through automation and system integration. Primarily targeted to address the changing business needs of CalWIN end user and delivery of improved service to the client, the positive impact to external stakeholders and organizations has been significant as well.

The CalWIN system provides benefits and services to 43% of the California recipients. The initial specification and design of CalWIN planned for just over 1.5 million, which quickly grew to 2 million by full implementation in June 2006 and in 2009 rose to 2.5 million.

This rapid growth was managed seamlessly through the superior capacity management and scalability of the CalWIN system, serving 50% greater caseload than originally intended.

CalWIN produces an unfathomable 3.5 million informing notices to clients per month, many of which are available in as many as 14 different printed languages. Prior to the implementation of CalWIN a vast majority of these notices were individually reviewed and mailed by a case worker. With CalWIN, the need to keep thousands of shelf stock informing notices on-hand was eliminated, as well as the need to handle each outgoing piece of mail. CalWIN simply transmits a file to the print services site where the printing, stuffing and mailing takes place, a task formerly maintained by the county eligibility staff.

CalWIN interacts with 12 state and local interfaces. This is done through a nightly batch process that provides critical eligibility and benefit authorization requests to receiving state systems such as the Medical Eligibility Determination System (MEDS). By design, CalWIN determines the Medi-cal eligibility and transmits this information to the statewide Medi-cal benefits system to deliver the benefits.

CalWIN automatically routes information to and receives information from these critical systems. This is all done based on the case composition and individual case scenario. As an example, if child support is being collected on a mutual case, CalWIN automatically manages the child support payment requirements passing information between the States child support services computer system and CalWIN. Transactions of this type do not need to be initiated by manually queuing up requests to send or receive data; CalWIN takes action automatically based on information entered by the worker as part of the overall case management.

CalWIN automatically loads food stamp and household grant benefits directly to the client Electronic Benefits card (EBT). Thereby eliminating the need to produce a check and issue food coupons to a household.

The new *Benefits CalWIN* self service model has positive impacts for the County agencies as well. The eligibility worker no longer has to ask each and every question of the client and then enter it in CalWIN; the client does this for them! Lobby traffic and the need for individual appointments are cut down and more clients can be served.

7. Demographics (these are multiple choice questions)

8. Additional Questions

(8a)- How do you think IT will be different in 2020?

The pace of technology is changing rapidly. Emerging technologies will likely substantially alter how society operates. As a result, enterprise computing will be substantially changed in all industries.

For CalWIN and healthcare systems in general, these technologies will provide both the means to dramatically improve how welfare benefit eligibility is determined, and how benefits are provided. Changing technology will also pose significant new challenges. Some of the new technologies on the horizon that will change how computing is done will include:

- **Cloud Based Computing** – computing is moving away from monolithic "server" based applications running on desktops with local storage. Instead, broad collections of services and resources are shared across the internet.
- **User Interface Advancements -** voice and touch interface technology will continue to spread and become more prevalent and accepted. 3D Display technology, electronic "flexible" sheets and display over large surfaces will be common place. By 2020, interface development will shift towards interaction with the environment.
- **Mobile Devices –** The mobile device will be the primary connection tool to the Internet for most people in the world.
- **Real World Web** – By 2020, "Pop-Up" information tools like Google Goggles will be widespread and continually in our field of view, giving us added background information about the people, places and other information we are viewing. It would also be able to manage identity and avatars and use tags so machines can gather information.
- **Virtual Worlds and Social Software –** Virtual Reality software and devices will not just be for games, but will be a substantial aid to worker productivity in the areas of training, testing and simulation.
- **Intelligent Agents (IA)** – Intelligent Agent software, i.e., autonomous, self-learning programs, will increasingly be deployed to collect information and steer activities towards particular goals.

(8b)- What does being part of the ComputerWorld Honors Program mean to you?

It means that success is not measured by a single person's effort, but can be measured by a collective group of highly motivated individuals that achieve amazing things together. Being part of the Computerworld Honors Program is a way to say thank you to all of those individuals who make CalWIN possible and for a job well done.