Asset owners worldwide are grappling with significant increases in major capital costs and ever-greater pressure to extract meaningful productivity, compliance, maintenance and safety outcomes from new and existing assets.

WorleyParsons Digital Enterprise draws on its significant experience to deliver real gains in capital and operational efficiency across:

- asset deployment
- asset management optimization
- technology upgrade and management.

We deploy four phases (Advisory-Consult-Build-Operate) either individually or together across key organizational levers. Our objective is to deliver knowledge and know-how that ensures the digital and physical assets have been created in a way that enables flawless start-up and optimization across the complete asset lifecycle.

The productivity opportunity – seizing the performance benefits of an integrated intelligent asset management environment:

- Optimized asset performance through effective data monitoring, transparency and management
- Transparent asset handover, maintenance and information management – significant time savings through intelligent, controlled, cloud-based access to all documents, drawings, data sheets and operating manuals held in different systems, formats and programs
- Streamlined change through clearer data requirements, better option planning and understanding / management of change impacts
- Effective whole lifecycle inventory management – significant savings through optimized spare parts estimating / acquisition / storage / shipping / installation / maintenance
- Safety / compliance validation – effective and comprehensive record of multi-site / country compliance requirements and validation status
- Financial risk reduction in capital investment planning – easily accessible accurate data for future projects (modernization / de-bottlenecking / greenfield development)
- Market-product mix optimization – delivering different products from a single production line
- Maximizing supply chain productivity through better data sharing by downstream systems (commission / fabrication / operations)
- Intelligent reporting – highly customized and rapid financial and performance analytics and predictive reporting through powerful multi-dimensional databases
- Improved insurance profile through better quality data ownership identification and traceability
The asset data solution

The Asset Data Solution is a structured platform for asset information management that delivers a single source of truth. It provides a means to author, capture, validate and deliver critical asset information to better inform owner operators for effective decision making and improve asset operability and performance.

Key capabilities:
- System architecture and execution planning
- Project management
- Solution implementation services including technical installation, configuration, integration and training
- Materials quantity assessment and optimization
- Content management services, including cataloging, SPIR data processing, material master and bills of material development
- Enterprise asset management (EAM) solution maintenance and integrity build
- Reliability program development and optimization
- Brownfield ‘as-found’ information capture
- Geospatial data integration
- Engineering design and data environment

The WorleyParsons Digital Enterprise Asset Data Solution is a value creator

- A collaborative asset information portal to enable the efficient capture, validation, enrichment and standardization of asset data and documents during project execution
- Specialized tools and services for classification, linking and cataloguing of all equipment and spares within a single repository for unique identification
- Use of world-class technologies and methodologies for efficient build of the asset reliability and integrity program and direct integration with EAM systems
- Delivery of an integrated platform for APM that consolidates sources of asset condition data for enhanced decision support and continuous improvement
- Integrating owner operator enterprise systems with structured asset data repositories to enable users to efficiently access valid asset information
- Provision of staging areas for asset master data authoring, structuring and validation prior to delivery into EAM systems thereby ensuring that data is fit for use

APM SOLUTION IMPLEMENTATION ROY HILL IRON ORE PROJECT
Customer: Hancock Prospecting
Location: Western Australia

- A new iron ore mine, a mine process plant, a heavy haul railway system from mine-to-port and new port facilities
- Bentley AssetWise performance management solution to support maintenance tactics development and asset performance improvement:
  - consulting and advisory to assist with overall solution architecture
  - software technical installation and configuration to align with customer requirements
  - integration with SAP PM and condition monitoring repositories
  - development of maintenance tactics for critical mine processing equipment
  - deployment of mobile technology solution for operators and technicians
  - ongoing technical support, training, coaching and mentoring

ICHTHYS MAINTENANCE AND INTEGRITY BUILD
Customer: INPEX
Location: Perth, Western Australia

- 55 million tonne per annum (Mtpa) iron ore project in the Pilbara region of Western Australia
- Construction of offshore infrastructure comprising CPF, FPSO, an 850 km subsea gas pipeline, and an onshore liquefied natural gas processing facility
- Comprises the full maintenance build for the facilities with NRX as the cloud-based EAM authoring solution to capture all the master data requirements.
- The scope of work included:
  - preparation of bills of material for all equipment
  - recommendation of spares holding requirements
  - identification of the maintenance strategies via studies such as RBI, RCM & SIL
  - populating the equipment master data into NRX to align with INPEX SAP PM master data requirements
Operating efficiency:
• Decreased cost and schedule for leading operating systems
  - reduced time to find critical operating information
  - reduced modification cost through improved access to correct information
  - improved and more effective ongoing asset management
  - reduced maintenance costs
• Provision of safety-in-design and operations features
• Availability of design and manufacturer’s information for safe operations and maintainable environment
• Eliminating downtime

Capital efficiency:
• Significant cost reduction for capital projects through ready access to digital plant information
• Reduced requirement for significant surveys which can cause delay
• Faster materials deployment leading to increased productivity

Information integrity:
Accurate and reliable engineering data is an essential element for any organization to operate safely and efficiently
• Information governance leading to improved control and communications
• Validation of multiple data sources
• Elimination of duplicate tags
• Validated tag, document and data information
• Ensuring fully effective asset handover from the EPC to the owner operator

Our services range from extracting data from non-intelligent based documents right through to the provision of a hosted and managed IM environment.

Vendor neutral while providing excellent skilled resources in deploying leading capital facility systems solutions

DIGITAL PLANT PROJECT FOR USSC AND DAS ISLAND
Customer: ADMA-OPCO
Location: Abu Dhabi, UAE
• Digital plant campaign project for offshore and Das Island facilities
• Consolidating existing design information - will provide a fully accurate digital asset of the facilities and reduce time spent searching for data and documents
• Will provide a reliable platform for further brownfield modifications. The project is due for completion in 2015
• Full digital plant of 60 units / facilities
• P&ID digital plant of 96 wellhead towers
• EIMS - custom Aveva Net implementation
• Existing archive: > 101,640 documents (various formats)
• Deliverables:
  - Aveva P&ID, IN, PDMS databases (including environment set-up)
  - > 6000 drawings (selection of) and reports
• Engineering: > 150,000 mhs
• Engineering execution in WorleyParsons Abu Dhabi and India

COSYN LIFECYCLE INFORMATION MANAGEMENT PROJECT
Customer: Syncrude
Location: Canada
• Process safety information and management added in 2002
• CoSyn’s InTools (SPI) revision management support in 2005 to improve and maintain important engineering information throughout the equipment and instrumentation lifecycle
• CoSyn has contributed throughout to Syncrude's access to high quality information for engineering, operations and maintenance of the facility
• 73 plant areas had LCIM updated to as-found conditions taking over 1M man-hours
• Process safety information approach was broken down into six major steps:
  - development of the field verification package
  - field verification
  - engineering discipline review
  - engineering inter-discipline review
  - issue of the PSI 'as found' package
  - issue of 'hard revs'
Increased operational efficiencies through rapid and consistent access to data.

WorleyParsons Digital Enterprise seamlessly integrates relevant information to provide location-based visualization and retrieval of key site and field data, providing improved information access and a tangible efficiency benefit throughout the whole asset lifecycle. Our data-centric approach increases the potential for project success through agile and responsive systems with supporting tools and workflows that enable decision makers to better understand the scale, patterns, processes, relationships and implications of operation and development activities.

Hosted services
Quickly understand information available at a location.

WorleyParsons Digital Enterprise provides a bespoke, hosted web GIS that offers decision support tools alongside a framework for users to interrogate a geographic representation of assets and click through to connected systems to retrieve information.

The solution can be deployed in weeks, not months delivering significant cost savings in software, hardware, maintenance, project, operations and unforeseen issues caused by poor understanding of the situation on the ground.

Geospatial data management for digital assets

Delivering cost reduction, improved efficiency and connected working

Sharing geospatial data across organizations enables site or field information to be securely shared and re-used, ensuring a common operating picture and more efficient integrated working.

We enable controlled data sharing with subcontractors or other operators in the case of joint ventures, without compromising data integrity, quality or ownership.

By enhancing the communication and collaboration on site-specific information:
- The communications loop is shortened
- Double handling of data-related tasks is eliminated
- Printing and printouts are reduced
- Turnaround times are reduced because of the self-service approach

Digital field services (data management for pipeline fields):
- Pipeline data management for the whole field lifecycle, from concept to decommissioning, using standardized data structures including PODS database schema for onshore and subsea pipelines
- Consolidated system of record for pipeline centerline
- Route optimization
- Survey planning and data capture
- Highly efficient and cost-effective automated alignment sheet generation
- Inspection and integrity data management
- Two-way live integration with CAD design data and tracking systems

WorleyParsons is a leading global provider of professional services to the resources and energy sectors, and the complex process industries.

WorleyParsons Digital Enterprise supports customer demand to frame, develop and implement digital technologies that will take the ability to monitor, analyse, enhance and optimize asset performance throughout its life-cycle, to a new level.

With our deep understanding of the asset life-cycle from concept through to decommissioning, we are uniquely positioned to provide stewardship of the integration of vendor and bespoke technologies, systems and architecture.

Please email digital.enterprise@worleyparsons.com for further information or to talk to a member of our team.

www.worleyparsons.com