Using EDI and Automation of the Labor Allocation Process to Deliver Improved Utilization and Reduced Labor Costs

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EDI & Enterprise Labor Planning

Process automation
Rostima – The Company

- UK company with West London HQ
- Technical Centre of Excellence – Kuala Lumpur, Malaysia
- Specialists in the delivery of Enterprise Labor Planning, Allocation and Timesheet Management solutions to the Maritime / Logistics industry
Rostima – Enterprise Labor Planning

Features
- Rostima’s Enterprise Solution automates the scheduling and allocation of labor taking into consideration:
  - Equipment Availability
  - Employee Availability (leave)
  - Employee Preferences
  - Employee Skills / Qualifications
  - Union/Labor Rules
  - Management deployment preferences
  - Location of work
  - Length of work

- Rostima’s Enterprise Solution also gives users the ability to:
  - Analyze and compare various scenarios
  - Gauge the best solution given different sets of constraints e.g. staff numbers, contract type, flexibility of Labor rules etc…

Benefits
- Rostima’s uniquely flexible resource allocation platform therefore results in:
  - Maximum utilization of available resources that meet actual operational demands
  - Minimization of costs to achieve total coverage of work
  - A Return on Investment typically within 12 months of Go Live
EDI & Automation of Labor Planning
Why, How and the Benefits
Equipment v Process Automaton – The Debate

Key Factors

- Greenfield v. Existing Terminal re-development
- Terminal Infrastructure, Geography and Hinterland
- Throughput Growth potential
- Process automation v Equipment / Terminal automation cost
- Labor & Local Trade Agreements
- Labor is typically 40 – 60% of the operating cost

Process automation can deliver immediate ROI benefits
Enterprise Labor Planning – why is it needed?

Considers the following key operational labor questions

- How many staff do we need?
  - By Skill and Contract
- Who are our most productive staff?
- How do we reduce non-productive time (vessel and equipment cutover)
- What is the benefit of more flexible working arrangements?
- How do we increase efficiency and maintain compliance and safety?
Enterprise Labor Planning – what it delivers

Quantifiable Return on Investment

- Visibility of workload
- Requirement for labor by skill and by time of day
- Prevent mismatch of current rosters or practices
- Provide optimization tools to help drive efficiency
- Compliance with Labor Agreements and H&S regulations
- Automated data exchange to and from:
  - Operations
  - HR
  - Finance
  - Senior Management

EDI can help deliver further substantial benefits
Case Studies
The benefits of EDI & Automated Labor Planning
Rostima at DP World – Jebel Ali

Rostima typical benefits:

- 10% reduction in direct labor costs
- 30% reduction in deployment time
- 50% reduction in planning/admin process
- Matching of labor skills to key activities
- Integration of Operations, Labor, HR and Financial Control systems

DPW Jebel Ali Case Study:

- 2013 Throughput of c.14 million TEU
- Rostima plans and notifies circa 3,000 personnel daily
Rostima at DPW JA – EDI Efficiency

- MAXIMO & NAVIS
- Skills Training
- Leave
- Payroll

- ORACLE
- Employee Performance Management System
- Vessel Schedule
- Gate Bookings

- T&A at Gate
- T&A at POW
- SMS

- ROSTIMA
- Vessel Schedule
- Gate Bookings
EDI & Process Automation

- Reduces human error and manual data re-entry
- Enables data exchange between systems closer to execution time – more accurate planning
- Automated T&A alone has proven savings of between 2 and 3% on Payroll
- Essential to enable both forward shift planning and real time allocation as things change
- Enables actual v planned comparisons for operational learning

- Start with just automating existing processes
- Labor systems lend themselves to exploring the benefits of optimising shift and roster patterns.
- Benefits of Automated Dispatch Notification to reduce non-productive time at Vessel / Equipment handover.
- EDI can deliver 2-3% savings, increasing to c. 10 -15% with the introduction of optimised working practices.
N4 & Rostima
The Added Value Proposition
Quay Commander & Advanced Relief

- Rostima can dovetail with key data from N4 Quay Commander report
- Takes the proposed crane splits by shift and time of day and optimises the gang labor deployment in an attempt to reduce the overall labor hours deployed against the requirement.
- Considers primary relief factors such as:
  - Min / Max time deployed on Equipment before a break
  - Time to travel to and from Equipment or Activities
  - Time to start and stop Equipment
  - Vessel Downtime for Embarkation / Disembarkation
2 crane split

- Number of cranes in split (2 in this case)
- 1st crane’s # of jobs (591). Grey bar shows bays assigned to crane
- Even split means both cranes will perform some jobs in the same bay (46 mvs for crane 1, 18 for crane 2)
- Total vessel moves
- Green arrows are loads/discharges to/from that bay
3 crane split

Same vessel, same # of moves, but now split among 3 cranes
Crane assignment

Individual bays may manually be assigned to a specific crane.
Quay Commander

- Bay or meter marking
- Time down Y axis
- Current time
- Discharge queue for bay 18 below deck
- Shift(s) for each crane

Quay Commander is a software tool used for managing and monitoring port operations, including the scheduling of shifts and the tracking of operations within the bay. It provides a visual representation of the port's activities, including the discharge of cargo, the allocation of shifts, and the current time.
4 cranes
Simple / Manual Relief Management

Relief Definition:
• Restrict number of employees to share equipment
  - i.e 3 Gangs to share 2 Cranes based on 3 for 2 rule
• Simple Parameters i.e. Max work hour = 4 hours
• Assumption on Long Continuous Operation of Equipment
Issues with Simple Relief Management

What happens if the simplification is not accurate?

- Non-Continuous Work?
- Insufficient Staff?
- Too many Employees for too much Equipment?
- Time restraints for manual allocator?

![Graph showing loss of potential work hours and assignment of work for Gangs 1, 2, and 3.](image-url)
Rostima’s Advanced Relief Management

- Automatic Relief Management
- Maximises Equipment and Operator utilisation
- Optimal placement of relief breaks while enforce strict relief parameters
- Increases operational capability e.g. Stand-by staff
Rostima Relief Management

- **What is Advanced Relief Management?**
  - Enforces all required criterias accurately without fail
    - Maximum continuous work followed by minimum rest
  - Minimises employee requirements given the workload
  - Maximising employee usage via elimination of unnecessarily downtime

- **Benefits**
  - Maximises the operational capability of available staff
  - Ensures safety requirement and employee contentment
  - Ensure fair rotation of breaks
  - Potential to be as restrictive or as loose given the parameters

- Rostima’s Advanced Relief Algorithm can reduce the number of employees required for the same workload by as much as 10%
Thank You

Questions