

90%
*of infrastructure and
construction projects
around the world run late.*

Every late project uses
Critical Path based software.

Now Realization offers a proven alternative

More than 400 organizations.

Over 10,000 real world projects.

Bottom line—exceeds \$7B.

REALIZATION[®]

—FOR A WORLD OF LIMITED RESOURCES—

Do you want to put an end to late projects?
Call or WhatsApp us at +91-9769438447



Why Critical Path fails every time

1. Using Critical Path causes suboptimal deployment of resources, so projects take longer than they should.
2. Using Critical Path causes every delay to become critical, so projects get engulfed in firefighting.
3. Using Critical Path makes plans unusable in execution, so plans and execution stay disconnected.



“Until and unless we find an alternative to Critical Path, billions will continue to get wasted on project management training and software ”

— Sanjeev Gupta, Founder and CEO, Realization Technologies

Let's talk Impact

For over twenty years our company has been obsessed with one thing. Delivering big, complex projects faster. It's not just what we do, it's a twenty-four-seven, all-consuming passion. For us, projects are the lifeblood of growth, prosperity, and welfare. Projects are how nations get built.

This is widely known but bears repeating—more than 90% of infrastructure and construction projects around the world are grossly late. That's because the critical path method—which is how project timelines are mostly managed—is flawed. It assumes a world that doesn't exist, a world of endless resources. In the real world it causes suboptimal use of resources, and projects take longer than they should.

Our Resource Deployment Map helps you deal with the world exactly as it is. A world where resources are limited, whether they are engineers, procurement staff, construction crews, or even coordinators, managers, and experts. It's an ingenious way to deliver projects on time, even when things don't happen as planned.

When resource constrained projects are managed with the critical path approach, every delay becomes critical. With the Resource Deployment Map, 90% of changes and delays don't impact project timelines at all. They simply get absorbed. That means management can focus their energies for the greatest impact.

Every project is beset with 'what is' and 'what if' questions. 'What's the aggregate impact of our progress on those six work fronts? What if we spent here and not there? What's the impact?' The Resource Deployment Map can help answer those questions in minutes.

The Resource Deployment Map changes everything. No more disconnected plans. No more finger pointing. Instead, you'll see more collaboration and teamwork, with clear accountability. Lower costs. Cash into the pockets of your contractors faster. And timely realization of financial, economic, and social benefits from your projects.

The US Navy invented the critical path method to manage its POLARIS project. But they are now deploying Realization's solution in its shipyards. Resources, even for the US Navy, are not unlimited anymore.

Have a look at our track record in the pages that follow.

Then call us at +91 9769438447, or email rdmap@realization.com to get your questions answered. Or, ask us to arrange for a conversation with our CEO, Sanjeev Gupta.





NTPC

\$800 Million Super Thermal Power Plant

Power Plant projects involve multiple stakeholders with hundreds of contractors, sub-contractors and vendors. Keeping all stakeholders aligned with project needs was a challenge.

Several overarching problems threatened the timely completion of the Khargone project. Ten-thousand drawings, and 100,000 tasks. Planning and execution were disconnected; information was subjective and scattered; and a persistent gap between management's view of things and reality.

Within a month of implementing Realization's model, the project management team had complete visibility into areas that had bottlenecks.

“Our Khargone team could now be proactive. Even new bottlenecks did not take us by surprise. They completed all major milestones on time despite all the problems that happened in a 4-year project.”

— Mr. Ajay Shukla / AGM / National Thermal Power Corporation of India

L&T Shipyard

\$250 Million Greenfield Shipyard Project



Building a world-class shipyard and a 200-meter shiplift with an in-house team brought its own set of challenges.

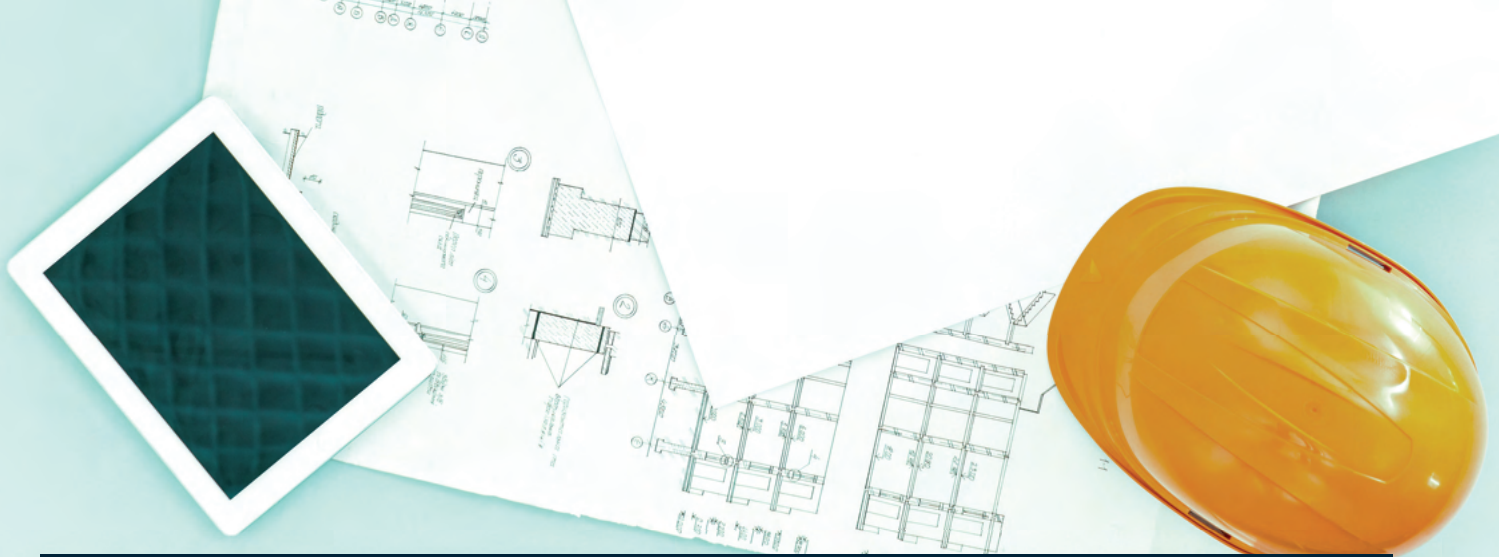
Based on experiences in their heavy engineering group, L&T would use critical chain scheduling, enabled and enhanced by Realization's system. By turning to Realization early on, L&T set the stage for a better than good outcome—an astonishing 28-month timeline. This was achieved despite late delivery of critical supplies, and three cyclones.

“Our plate supplies were late by 9 months. Our fabrication contractors mobilized only 60% of the required workforce.

Yet we finished the shipyard in a record 28 months, only 4 months late against our ambitious initial goal.”

— Mr. P R Prabhu / Senior VP / L&T Shipyard





IMPACT ON:

Infrastructure Projects

CLIENT: **BHP Billiton** — Iron Ore Asset Development Projects
BEFORE: 25,800 man-hours of engineering design work had to be completed in 8 months. Historical delays of 2 wks & man-hour overruns of 20%.
AFTER: Productivity increased by 25% with only 19,500 man-hours needed. Project finished 3 weeks early.

CLIENT: **Bihar Urban Infrastructure Development Corporation**
— Portfolio of 19 Sewerage, Water, Road & Drainage Projects.
BEFORE: 22 land zones cleared for construction over 2 years.
Zero zones cleared with design for construction in preceding 2 years.
Delays in projects were ranging from 10 months to 45 months.
AFTER: 68 land zones cleared for construction in 6 months (200% increase).
33 zones cleared with designs for construction in 6 months.

CLIENT: **Emesa** — TGV Station Construction
BEFORE: 6 months left to deliver. Project was 5 months late.
AFTER: Completed 11 months of work in 6 months.
Project on time (\$5M penalty avoided).

CLIENT: **JMC Projects** — Overhead Metro Rail Expansion Projects (DMRC)
BEFORE: Billing was among the lowest amongst other contractors.
Bottom line and interest loss of \$500,000/ month with prevailing execution rate of ~ 60%.
AFTER: Billing to DMRC the highest amongst all other contractors.
30% jump in cash flow within the first 4 months of execution.

CLIENT: **Kalpataru Power** — \$500m portfolio of EHV Transmission Line proj.
BEFORE: CEO felt Annual Operating Plan targets were pessimistic.
Last minute surprises were affecting execution rates.
AFTER: Client exceeded AOP targets by 30% across portfolio.
proactive alerts minimized last minute surprises.

Aarti Industries

\$200 Million Greenfield /
Brown-field Expansion

Aarti Industries is a leading manufacturer of speciality chemicals. An ambitious \$200 Million, 30-month capital expansion brought challenges. Management was stretched. And, they would have to share resources across projects and operations.

To meet production goals, Aarti needed to hire and build out the organization. Management's big challenge was a lack of timely visibility into problems and their impact on project delivery. A high number of iterations during basic engineering phases, typical to the chemical industry, also had a big impact on due-dates.



"Realization's software acts like Google Maps for our projects. Potential delays are transparent to the entire project team."

All of us know exactly what actions are required to prevent them from becoming actual delays."

— Mr. Renil Gogri / CMD Aarti Industries

Trident Group

\$600 Million Textile Greenfield Projects

“We completed a yarn plant, up to commissioning, in 14 months compared to 21 months on a previous project.”

— Padma Shri Rajinder Gupta / Chairman / Trident Group



Trident Group is one of the world's largest producers of yarn and towels. The challenge for Trident was to aggressively double their production capacity with a \$600 Million expansion. To meet the financial targets, greenfield projects had to be done 30%-40% faster than in the past. Management feared that their vendors and project teams were not synchronized.

Trident hired Realization to assist in project delivery using its patented system for the entire portfolio.



IMPACT ON: Capex Projects

CLIENT: **Kanoria Chemical Limited**
BEFORE: Similar greenfield project was planned for 18 months.
AFTER: Project was delivered in 13 months.

CLIENT: **Nakoda Limited**
BEFORE: Planned execution in 15 months (Industry standard).
AFTER: Project completed in 12.5 months.

CLIENT: **Vardhman Fabrics**
BEFORE: Similar expansion project has taken 18 months.
AFTER: Completion achieved in 13 months with 20% additional scope.

CLIENT: **Vardhman Special Steels** — Hot Strip Mill Expansion Project
BEFORE: Industry standard of 12 months for a similar project.
2 Shutdowns planned.
AFTER: Project completed 1.5 months ahead of management target.
Shutdowns completed on-time with added scope.

CLIENT: **Welspun India Limited** — Textile Projects
(Brownfield & Green-field expansion projects)
BEFORE: \$150 Million investment in 2 years.
Projects were delayed by 6-8 months (historically).
AFTER: \$350 Million worth of projects delivered in 2.5 years.
Project delays were reduced by more than 80%.

CLIENT: **Vibgyor Schools** — Multiple New School Projects
BEFORE: New school projects were delayed and took more than 12 months.
Achieved only 70% of admission target.
AFTER: Complete scope finished within 8 months (33 % improvement).
Admission numbers were 10% higher than the planned target.

CLIENT: **Hyatt Hotels** — New Hotel Projects
BEFORE: Execution rate was 40% of planned rate in the finishing stage.
AFTER: Execution rate was doubled through synchronization between
40 execution contractors, vendors & consultants.

CLIENT: **WESTIN Hotels**
BEFORE: Execution rate was 40% of planned rate.
AFTER: Execution rate was doubled

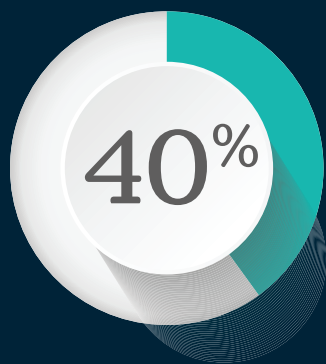
CLIENT: **Kalpna Chawla Hospital** — New Hospital set-up for JMC Projects
BEFORE: Project was running late by 6 months.
AFTER: Recovered delay of 6 months.

US Navy

Aircraft Maintenance & Upgrades



For over four decades, the F/A-18 Hornet dominated the sky, and ruled the roost of Navy flight decks. But in 2015, due to increased global demand, the US Navy began to overuse the multi-mission strike-fighter. And soon, 50% of the fleet was grounded for maintenance issues.



“We’ve been underway in that process now for a year, we have already increased the depot throughput by 40%.”

Rear Adm. Michael Manazir / Director, Naval Airfare—In testimony to the House Armed Services Committee.

The Navy had pushed the jets well past the 6,000 flight-hour service limit. With delays in the delivery of the F-35, scheduled to replace the F/A-18 in 2020, there was an urgent need to increase the pace of maintenance and repairs. The clock was ticking, and for the Navy's leadership, the stakes were high.

Delta Air Lines

Aircraft Engine Repair & Overhaul



20% increase
in capacity
alone



23% increase
in engine
production



10-26%
reduction in overall
turnaround times



18-38% reduction
in engine assembly
/disassembly times

(Info-Graphic Source: Gregory Mayes / General Manager / Delta Air Lines)

Delta has the largest, most comprehensive MRO in North America. It not only supports Delta's flight operations, it generates annual revenues of \$500 million.

The aircraft engineering and maintenance team needed to improve performance of engine repair and component maintenance; the business unit struggled to have a steady supply of spares engines available for flight operations.

Delta needed to repair and return the engines to operations faster by reducing queues, wait times and delays inside the repair and maintenance shops.

Delta Air Lines implemented Realization's Project Delivery System on its engine lines in 2011.



IMPACT ON:

Maintenance, Repair & Overhaul

CLIENT: **ABB Halle** — Transformer Repair and Overhaul
BEFORE: 42 projects completed in 2007. On-time delivery was 68%.
AFTER: 54 projects completed in 2008. On-time delivery improved to 83%.

CLIENT: **Delta Airlines** — Aircraft Base Maintenance
BEFORE: 24,799 hours produced/month in 2010. On-time delivery was 14.3%.
AFTER: 54 projects completed in 2008. On-time delivery improved to 83%.

CLIENT: **Erickson / Helicopter** — Manufacturing and Maintenance
BEFORE: Only 33% of projects completed on time.
AFTER: On-time delivery increased to 83%.

CLIENT: **French Airforce** — Aircraft Upgrade and Repair
BEFORE: 5 aircraft on station. Cycle time of 165 days.
AFTER: 3 aircraft on station, 2 aircraft returned to Air Force, a replacement value of €300 M.

CLIENT: **TAP Portugal** — Aircraft Maintenance, Repair and Overhaul
BEFORE: Completed a C-check in 16 days on average.
AFTER: Completed a C-check in 12 days on average.

CLIENT: **Tata Steel** — Plant Maintenance and Upgrade
BEFORE: 300-500 days for boiler conversion. Routine maintenance took too long. 11 days planned for shutdown.
AFTER: \$2M revenue generated/day. 120-160 days completion (68% faster).

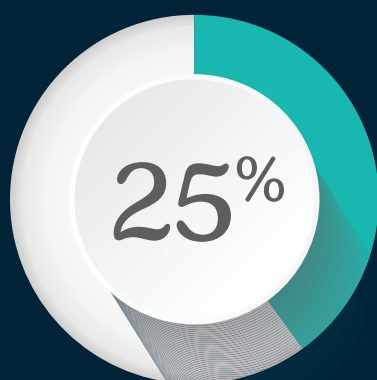
CLIENT: **US Air Force, — Ogden Air Logistics Center 572nd AMXG, C130 Production Line** — Aircraft MRO
BEFORE: Turnaround time 240 days. 13 aircraft in repair cycle.
AFTER: Turnaround time 160 days. 7 aircraft in repair cycle. 75% fewer defects.

CLIENT: **US Air Force, Oklahoma City Air Logistics Center E-3 Production Line** — Aircraft Upgrade and Repair
BEFORE: 4 aircraft on base. Cycle time of 183 days.
AFTER: Average of 2.6 aircraft on base. Cycle time of 155 days. Freed up 11% capacity to take on additional work.

CLIENT: **US Army AMCOM-ALC, Field Support Readiness Directorate** — Reset Maintenance Programs
BEFORE: UH-60 average TAT was 82.9 days. OH-58D ave. TAT was 91.7 days.
AFTER: UH-60 average TAT decreased by 9.7 days, a 11.7% reduction. OH-58D average TAT reduced to 67.9 days, a 26.1% improvement.

ISGEC Heavy Eng.

\$50 Million Multi-Project
Portfolio of ETO Projects



“It had been very heartening that with the help of Team Realization, our IT support team and our operations team in MBD, we could meet the target of 25% increase in the throughput.”

— Mr. Vivek Nigam / EVP & Head of Business, ISGEC Heavy Engineering

In 2017-2018, ISGEC Heavy Engineering Limited, a leading global engineering solutions provider, set a target to grow revenues by 25%.

One division had more than 50 projects underway at any given time, all vying for the same resources. All made more difficult by limited assembly space and capacity constraints.

Tracking over 100,000 parts coming in from suppliers required immense coordination.



IMPACT ON:

Engineered-to-Order Manufacturing

CLIENT: **ABB AG, Power Technologies** — Electrical Power Transmission
BEFORE: Throughput was 300 bays per year.
AFTER: Throughput increased to 430 bays per year (43% improvement).

CLIENT: **ABB Cordoba** — Power Transformers
BEFORE: Engineering cycle time was 8 months. On-time delivery was 85%.
AFTER: Eng. cycle reduced to 3 months. On-time delivery improved to 95%.
16% increase in manufacturing throughput (revenues).

CLIENT: **Alcan Alesa Technologies** — Material Handling Solutions
BEFORE: Completed an average of 6.9 projects per year.
AFTER: Completed 10 projects in first 8 months of 2009. 31% increase in throughput-dollars

CLIENT: **Airbus Defence and Space**
— Engineering and Manufacturing Payloads for Telecomm's Satellites
BEFORE: 24 installation drawings per week in design office.
AFTER: 41% engineering cost overrun in customization of new payloads.
32 installation drawings per week (33% increase in throughput).
6% engineering cost overrun (85% reduction).

CLIENT: **Eircom** — Telecommunications Network Design & Installation
BEFORE: On-time delivery was less than 75%.
AFTER: Average cycle time was 70 days. Increased on-time delivery to over 98%.
Average cycle time reduced to 30 days.

CLIENT: **Ismeca Semiconductor** — Semiconductor Handling Systems
BEFORE: 84 days overall cycle time. 24 days production cycle time.
AFTER: Throughput increased to 430 bays per year (43% improvement).

CLIENT: **LeTourneau Technologies, Inc.** — Oil & Gas Platform Design & Mfr.
BEFORE: Design Engineering -15 months. Production Engineering -9 months.
AFTER: Design Engineering -9 months. Production Engineering -5 months.

CLIENT: **Skoda Power** — Steam Generators
BEFORE: 20 casings per year. 60% on-time delivery.
AFTER: 27 casings per year (30% increase). 90% on-time delivery.
20%-30% faster cycle time.

CLIENT: **Thyssen Krupp** — Automotive Assembly System
BEFORE: 70% of projects were late. High overtime and outsourcing.
AFTER: Lateness reduced by 50%. 63% gains in productivity.
15% more projects completed.



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