



Ensemble
Consulting
Group

CONSTRUCTION
CASE STUDY

—
Creating a platform
for collaboration with
systems thinking
—

—
Let's
Redefine
What's
Possible
—

OVERVIEW

Creating a platform for collaboration with systems thinking

Over budget and behind schedule, this massive industrial plant had begun to look like a sinking ship.

RESULTS - PERCENTAGE

50%↑
IMPROVEMENT
IN **PRODUCTIVITY**

RESULTS - DOLLAR SAVINGS

Liquidated damages in excess of
\$100m
AVOIDED

The project, a large industrial infrastructure plant for a major city, was the largest of its kind at the time—a \$4.5 billion joint venture between a French engineering firm and a major Australian construction company. Yet it was also facing penalty interest on funding loans, late-completion liquidated damages, loss of income through non-delivery of product and a significant reputational challenge.

What's more, because it was a high-profile public project funded with taxpayer money, progress delays and setbacks were regularly reported in the press. This resulted in mudslinging between unions and management, creating an increasingly hostile work environment. The project and its corresponding instrumentation and metrics were initially organised by engineering discipline; while this maximised the best interest of each engineering function, it was ultimately counterproductive and damaging to the overall project.

Faced with the requirement to deliver on a major milestone by a fixed date to meet financial

and resourcing targets, the joint-venture management called on Ensemble to help turn the project around. Our expertise in systems thinking allowed us to integrate cross-trade work and establish a platform for collaboration.

The Ensemble Effect

We used a systems approach to help key stakeholders understand that their current system of management stood in the way of efficient and effective planning and execution. We helped the project team to reconceptualise the project as a single system with interconnected sub-systems, and we organised the work by system, rather than by discipline, to optimise the overall effort.

The results were a clear win: a 50% improvement in construction productivity was achieved, the target date met, and millions of dollars in cost overruns and liquidated damages were avoided.

Challenges

\$3m+ per day project over budget and behind schedule, with liquidated damages and loss of reputation

Project plagued by fire-fighting and crisis management, with over a dozen critical paths identified

High levels of conflict between multiple stakeholders from diverse disciplines, trades and backgrounds

Ineffectively managing up to 4,000 people on-site using a controls reporting tool with too little detail

Results

50% construction productivity improvement helped in meeting the target date and avoiding over **\$100m** in cost overruns

Single critical path identified to provide focus on completion

Systemic approach to defining cross-trade dependencies, with a strong focus on deliverables

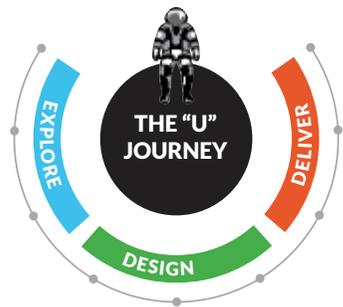
Clearly differentiated the reporting tool requirements from the single -source work management system

“The Ensemble system turns an ordinary supervisor into a great one.”

Site Superintendent

CONSTRUCTION

Transforming the system



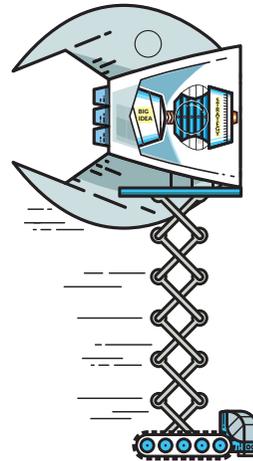
EXPLORE:
IDEATION
GENERATIVE INTERVIEWS
FOUNDATION WORKSHOP



DESIGN:
LEARNING JOURNEYS
RETREAT & REFLECT
CRYSTALLISE INTENT



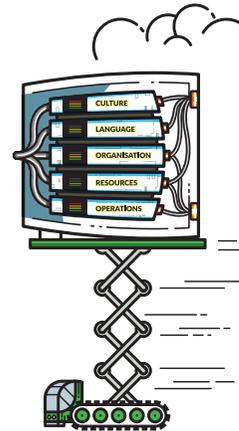
DELIVER:
PLAN THE WORK
WORK THE PLAN
WIN RESULTS



Explore

Generative interviews with key project stakeholders, including the construction director, lead engineers, and key supervisors, revealed the logical flow of cause and effect. We diagrammed this flow as a ‘Current Reality Tree’ to communicate the systemic root cause of underperformance simply and intelligibly. While popular belief had been that union trouble and the weather were to be blamed, Ensemble’s analysis showed that the basic organising principle behind the project management was its (nearly) fatal flaw.

The Foundation Workshop with the project’s stakeholders allowed us to evaluate the project’s current work management system, identify missing elements, consider cross-discipline dependencies and imagine better ways of working. It also drummed up a sense of excitement, helping to shift the mindsets of team members—who then collaborated to determine how they could more effectively and efficiently rise to the challenge of doing their best work.

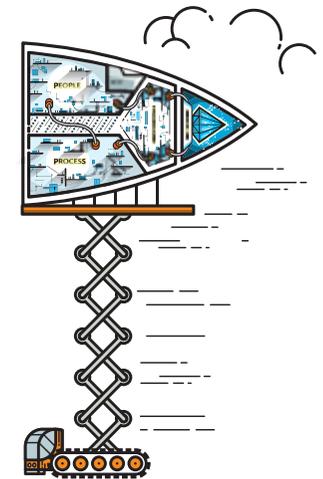


Design

Learning Journeys: We zeroed in on two key areas: an end-to-end view of the flow of the overall project going forward, and the definition and standardisation of many of its highly repeatable tasks. With this clarity, team members modelled different ways of configuring the new work management system.

We defined and created custom reports to measure and manage progress, and supervisors were familiarised with the concept of ‘full-kitting’ to ensure that all necessary resources—including people, materials, equipment and documentation—were available and on site prior to the start of the day.

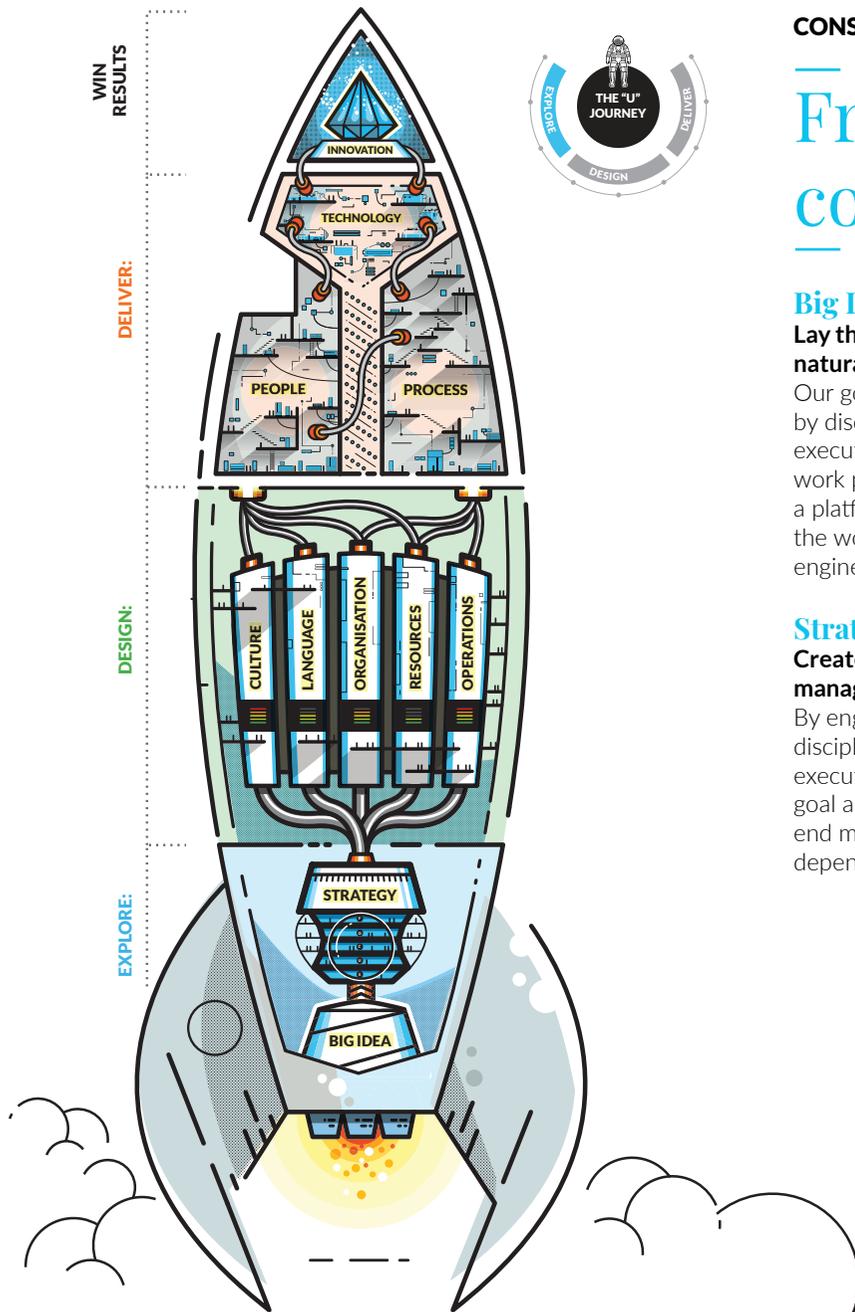
This new dialogue proved invaluable in boosting morale. Team members had themselves envisioned and prototyped the new approaches that enabled them to get more work done with less effort and greater flow.



Deliver

Win Result: At this point, the impact of the new systems focus became apparent as the team executed the changes developed during earlier phases. Standard operating procedures. Standard operating procedures were put into place, and the supporting technology applications were integrated to embed these improvements in the construction process. With the new system of work management delivering results, we began to adopt the same methods and tools to those areas of the project downstream of where the initial assignment started.

The team’s work was so successful that a further piece of work was commissioned by the Construction Director to investigate how the same principles could be integrated into the corporate management system. This final piece brought together Building Information Modelling (BIM), Project Controls and the ERP system into an overall concept for integrated project delivery.



CONSTRUCTION

From silos to collaborative flow

Big Idea

Lay the groundwork for collaboration that follows a natural flow.

Our goal was to take functional silos—organised by discipline and trade—and to plan, prioritise and execute their work by system, integrating cross-trade work packets with one another. This idea provided a platform for collaboration and allowed the flow of the work to mirror the natural flow of the functional engineering design and commissioning.

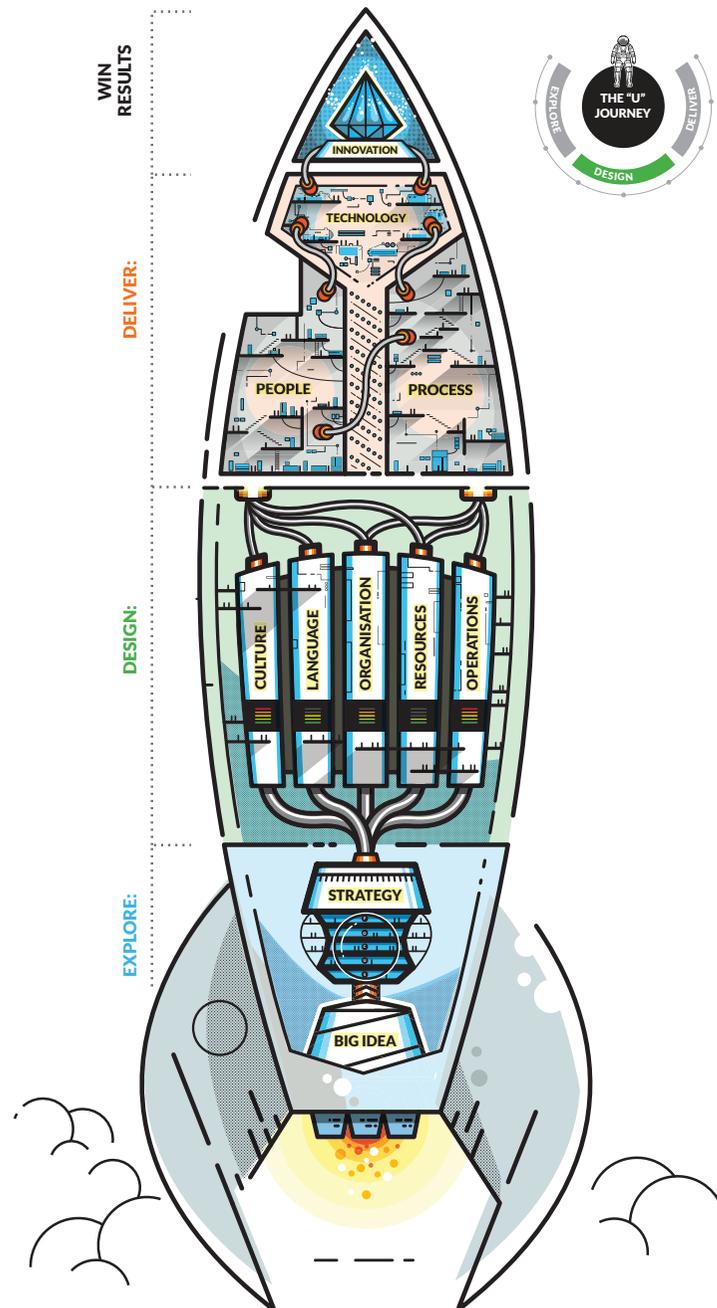
Strategy

Create a unified front to tackle end-to-end management.

By engaging engineers and supervisors across the discipline and trading silos in joint planning and execution sessions, we worked towards the overall goal as a unified team. This enabled full end-to-end management of sequencing, prioritisation and dependencies.

“Ensemble’s approach forced detailed planning and lead thinking.”

Project Director



CONSTRUCTION

Creating a new operating system

Culture

Enable a culture of collaboration to dissolve the pressure to conform.

Supervisors found that by collaborating with their colleagues from different disciplines and trades to make decisions based on timely, transparent and relevant data, they could all accomplish more together than any could do by themselves. That realisation led a tangible shift from conformance to performance.

Language

Establish a lingua franca that can be understood by all members of the team.

Extreme diversity in language, age, trade, profession, comfort with IT and a host of other variables inhibited the creation of shared meaning and purpose. Ensemble introduced a standard, commonly understood verbal and visual language to promote a deep understanding of the why, what, who, when and how of the work.

Organisation

Instate better visibility so that accountabilities come into sharper focus.

We established the principle that whenever a person was to be held accountable for a deliverable, they would be given the authority to match—not only within their function, but also across the silos. This made accountabilities visible from project director to area supervisor, resulting in focused, synchronised and effective execution.

Resources

Standardise and centralise control of resource management.

A taxonomy was created to define and standardise resource types such as skills, equipment and materials. All assignments of resources were controlled from the central pool, providing high levels of visibility and thus enabling the efficient and effective matching of resource supply to work demand.

Operations

Build a system of management to coordinate, prioritise and accelerate operations.

Detailed cross-trade coordination made transparency and resource availability imperative. It also required that we put in place a system of management to prioritise, level and accelerate the project by ensuring 'full kitting' before work started, minimising the clutter of excessive work in progress and pacing the release of work to the rate of completions.

“The deployment of Critical Chain Project Management has enabled the team to achieve a productivity factor improvement of more than 50%... providing detailed scheduling, real-time monitoring and critical task tracking capability. I will certainly be implementing CCPM in my next project.”

Project Completions Manager



CONSTRUCTION

Sustaining an agile response

When each discipline or trade worked in isolation, the result was loss of focus, unnecessary delays and poor synchronisation. Ensemble helped the Construction team to realise that time was their most valuable commodity.

Ensemble facilitated the creation of a Centre of Excellence, now called the Value Management Office (VMO), responsible for building, sustaining and continuously improving the expert system of management. The VMO helped to define capability standards and run enterprise-wide resource management, to deliver the best possible outcomes for the project as a whole—not for each discipline or trade in isolation. In addition, all work packets were prepared in accordance with a new set of planning and scheduling standards that supported a disciplined approach to planning and execution management.

Our systems approach allowed all participants to monitor progress and know their part in contributing to the overall goal. The result was higher quality, improved financial outcomes and a boosted reputation. In addition, the VMO led to sustained improvement

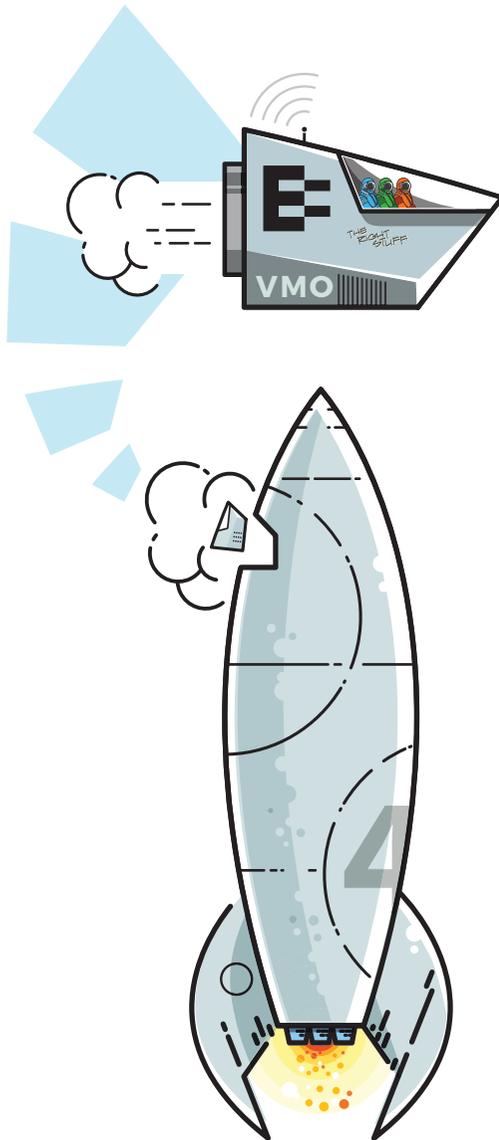
in project outcomes. This arose from demonstrable increases in productivity, more reliable delivery at major project milestones and increased confidence in the ability of all stakeholders to pull together to achieve a superior result.

Over time, the project team became highly skilled in using the expert system of management to become agile in response to the inevitable changes to the construction schedule. They also developed the ability to share resources against understood and shared priorities, and an understanding that no one wins if the project isn't coming together as a team effort.

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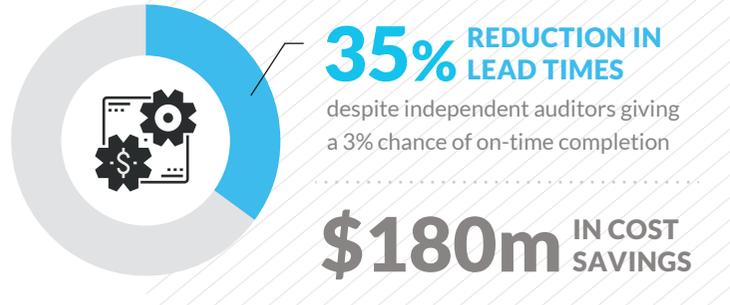
We have benefitted from a reduction in lost time, seen clearly our blockages and dependencies and committed with confidence to project due dates.”

Project Completions Manager

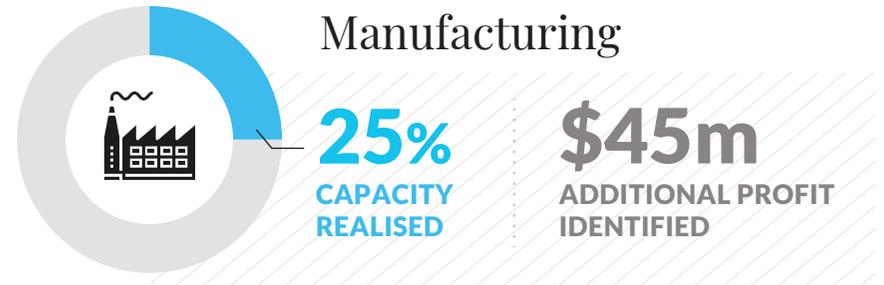


Our Results: Percentage and Dollar values

Business Management Systems



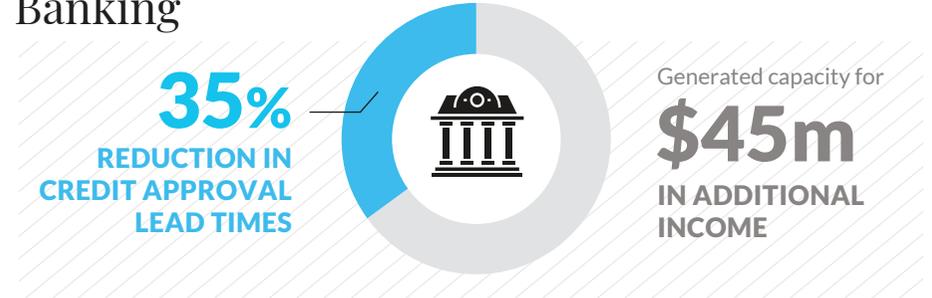
Manufacturing



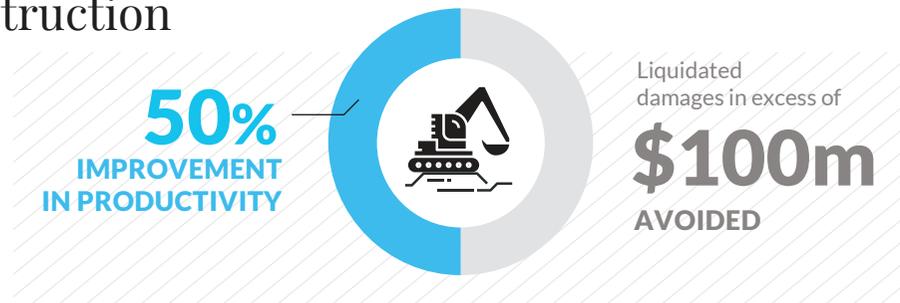
New Product Development



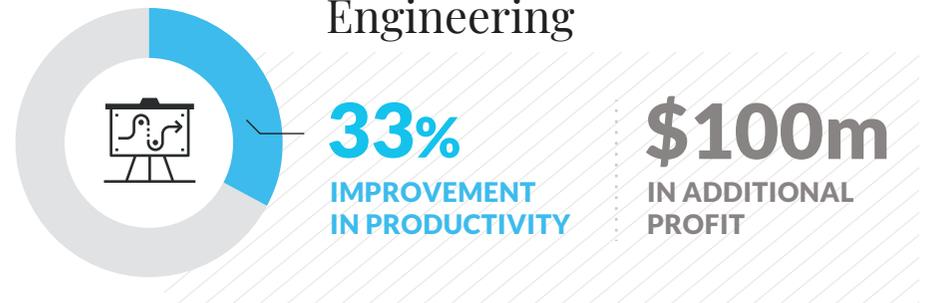
Banking



Construction



Engineering



So, why Ensemble?

We help organisations create more value for more people—in less time, every time.

Focussed

Our singular focus on 'innovations in productivity' has far-reaching effects. Our management systems can bring you more value than product innovation. Yet when you develop new products, better ways of working will bring those to market faster, too.

Tailored

As a specialist consultancy, we are nimble, hungry and dedicated to personal relationships. More Savile Row than off the peg, our approach isn't for everyone. But those leaders who get us enjoy both the process and its remarkable fruits.

Tested

Our uniquely experienced team knows what it takes to deliver real value in productivity, performance and profit. We've been doing this for blue-chip companies in Australia for over 15 years, with a proven track record in delivering outcomes faster, with greater reliability and agility — at lower cost.

Empowering

By helping to build a 'learning organization', we transfer our capabilities, giving you even greater results that are sustainable well beyond our initial engagement. From initial project engagement to our own Academy, we really do want to seed new ways of seeing the world of work.

True

Simplifying complexity is what makes us tick. We combine an engineer's curiosity with a business owner's obsession with results. We value the courage and particular quality of mind that enables a person to over the fear of difficulty or danger and remain true to their convictions.

Our innovations in productivity give ambitious executives three ‘value levers’

1. **Deliver your promised business case** – in full, on time, every time;
2. **Mindfully manage resources** to reduce your ‘cash burn’;
3. **Free up your people sooner** to tackle the next big idea.



BHP



Breville



CCA
COCA-COLA AMATIL



Jetstar



BOMBARDIER



THIESS



coles



onesteel

We've been giving tier-one Australasian companies this leverage for over 15 years.



Ensemble
Consulting
Group

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Even if I was allowed to mention dollar value numbers,
this is still the first thing I would always write:

**These outcomes are so valuable they literally print
their own money.”**

VP Projects



Are you an ambitious
executive looking to
apply the Theory of
Constraints and other
innovations in
productivity to your
organisation?
Get in touch

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