



# Canadian National Railway Company

A Leading North American  
Transportation and Logistics  
Company

NATIONAL RAILWAY DAY  
PRESENTATION  
NOVEMBER 2018



TSX: CNR NYSE: CNI

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## Our Strategic Agenda



Balancing Service and Operational Excellence – The Importance of ‘Value’



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# Operating Update



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## Plan to Improve Service

Execution well underway across each element

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### People

- Adding to a growing base of newly qualified conductors
  - Targeting ~1,250 more qualified conductors for 2019 winter relative to last winter
- Ratified five-year labour agreement with ~1,800 locomotive engineers in Canada

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### Rolling Stock

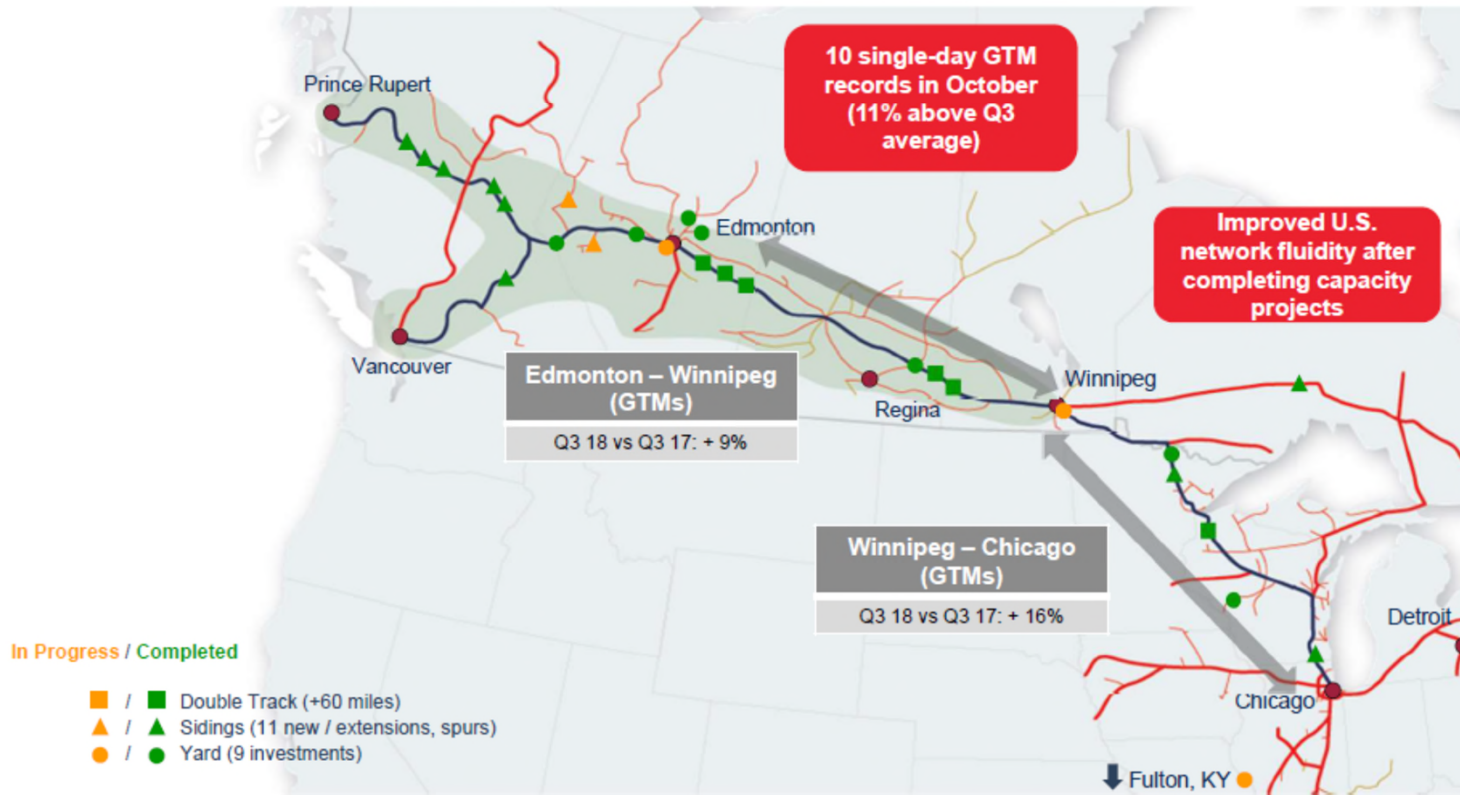
- ~100 leased locomotives in service
- 260 new locomotives over the next 3 years
  - 60 gradually in service starting in H2-2018
- Over 1,000 lumber centerbeams and nearly 1,000 box cars in 2018 (owned and leased)
- 1,000 new generation grain hopper cars (2019-20)

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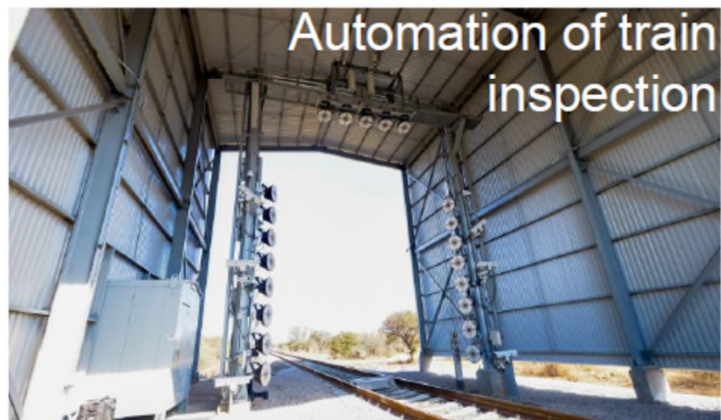
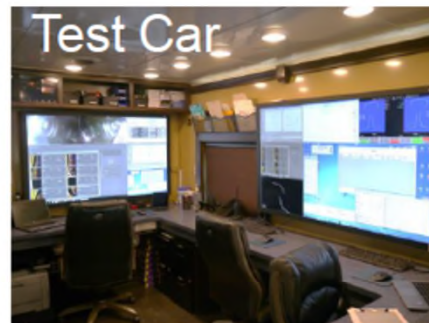
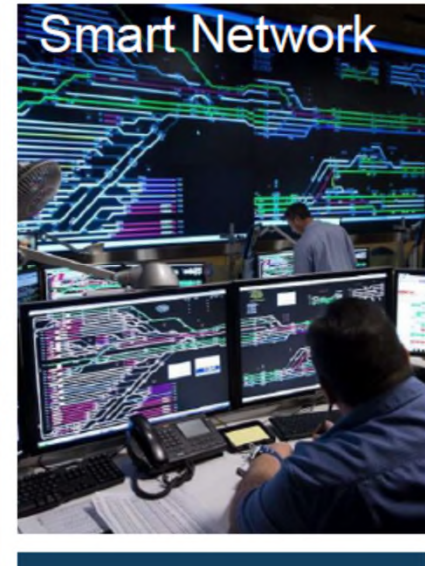
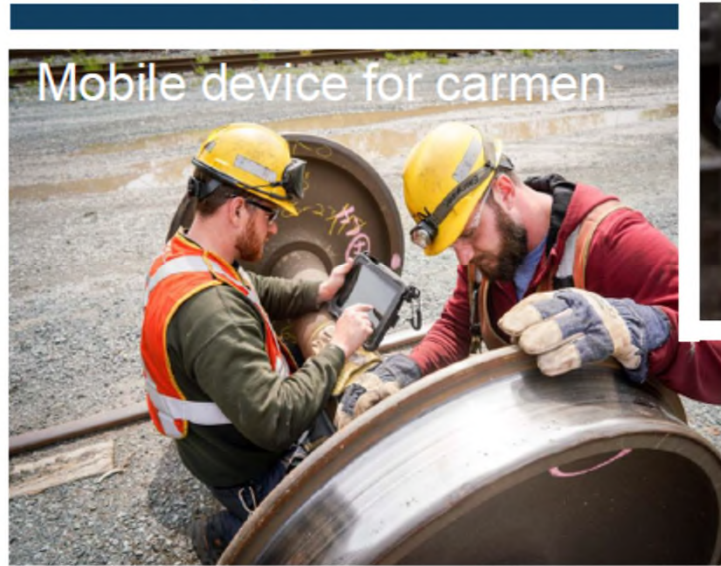
### Track Infrastructure

- Major capacity projects in 2018
  - New / extended sidings and double-track
  - Yard expansions in Edmonton area, and Winnipeg
- Aiming to complete all 2018 capacity investments in Q4

# 22 capacity projects fully in service 5 more to complete ahead of winter



# Leveraging Technology to Improve Safety, Efficiency and Productivity



Safety performance has improved 20% since 2011



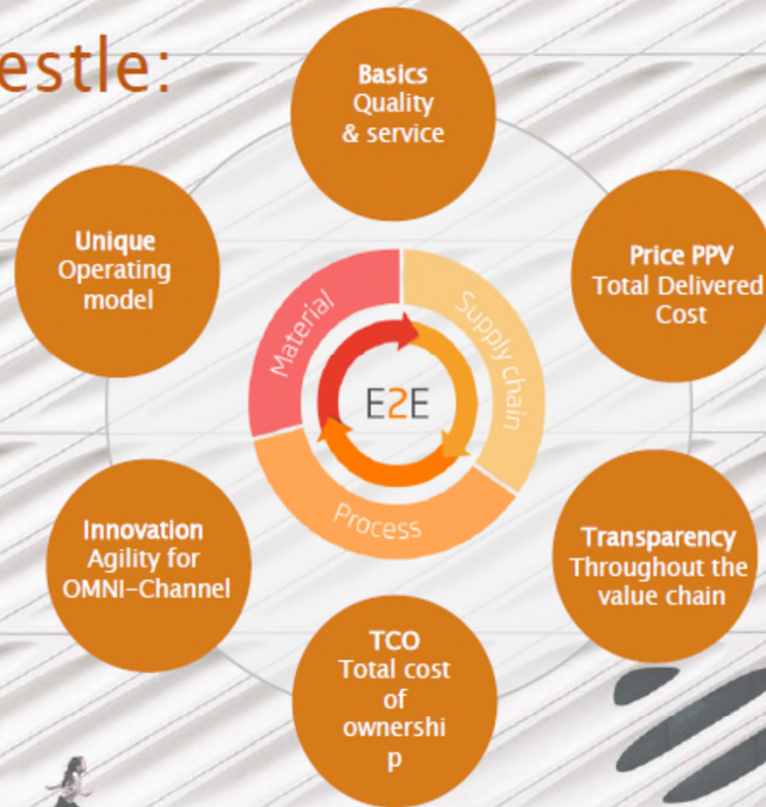
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Operational  
Excellence –  
Linked to the  
Corporate  
Objectives

What does the customer want ?.....

## What is important for Nestle:

Promoting a holistic approach  
focused on end to end  
value chain optimization



A joint strategic vision



# Do you want to get better at what you are doing today, or do something else entirely

Why do businesses like Apple, Google and Toyota seem to be able endlessly come up with really new and wonderful things

**The 'problem' with efficiency can be that it's a slave to its own metrics**

**Quite often there is an inflection point.** At some juncture people think that pictures look good enough and stop wanting more megapixels but care about other things like convenience, style etc.

**So if you keep creating efficiencies in areas that are no longer valued you risk disaster.**

So – align functional objectives align to the objectives of our business and to the end customer

By focusing on 'value streams' you align your business to the needs of the external customer - and then relentlessly work to reduce and eliminate NVA



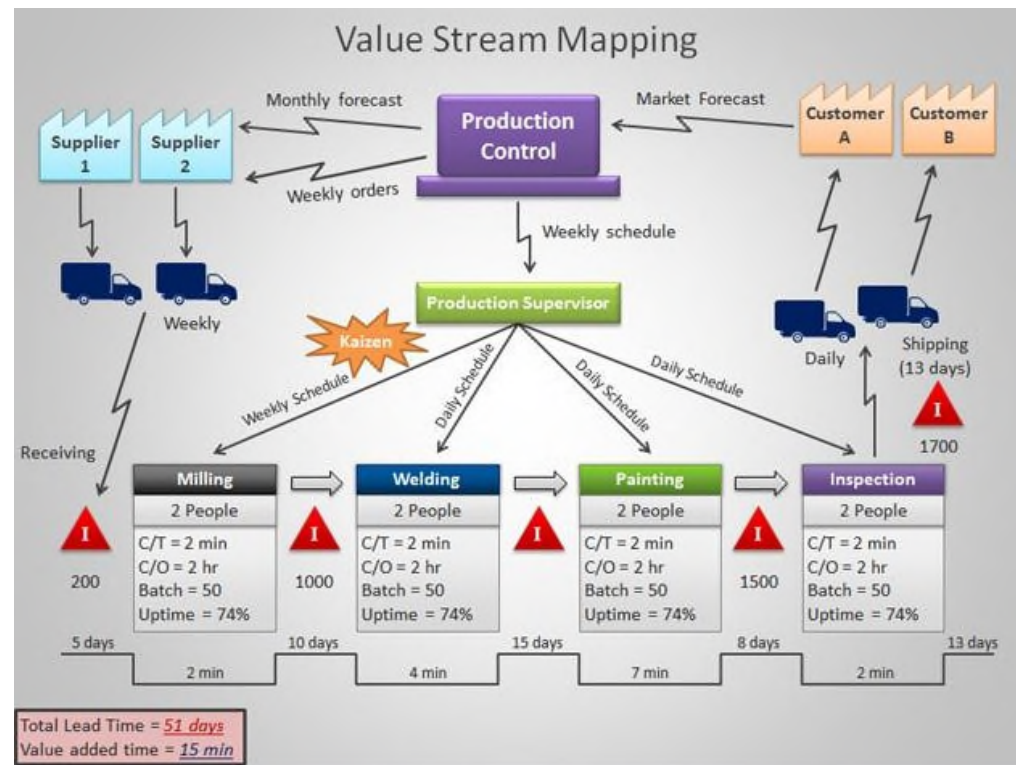
## So what can create these inflection points ? Be Mindful of Evolving Competitive Pressures

<b>Improving Truck Efficiency</b>	<ul style="list-style-type: none"><li>▪ Pressure from improved truck cost competitiveness due to lower fuel prices and excess truck capacity</li><li>▪ Mindful of potential for new technologies (e.g. platooning) to further improve truck economics and making truck more competitive vs rail at longer lengths of haul</li><li>▪ Significant funding focused on truck innovation, while mainstays like GE exit rail</li></ul>
<b>Increasing Data Transparency</b>	<ul style="list-style-type: none"><li>▪ Investments in logistics technology are removing data transparency barriers and enabling Solutions Design offerings</li><li>▪ Traditional broker models are increasingly at risk of disintermediation by new players in the supply chain</li></ul>
<b>Increase in Truck-Friendly Lots</b>	<ul style="list-style-type: none"><li>▪ Commodities will continue to grow in aggregate in line with GDP but experience mix volatility</li><li>▪ Consumer-driven economy is driving container volume growth; truck is positioned to capture a greater share of this market</li></ul>
<b>Faster, More Complex Supply Chains</b>	<ul style="list-style-type: none"><li>▪ Retailers and consumer packaged goods continue to compete for online sales growth, increasing supply chain complexity</li><li>▪ As a result of intense online channel competition, consumers have heightened expectations of faster delivery speeds at lower costs</li></ul>

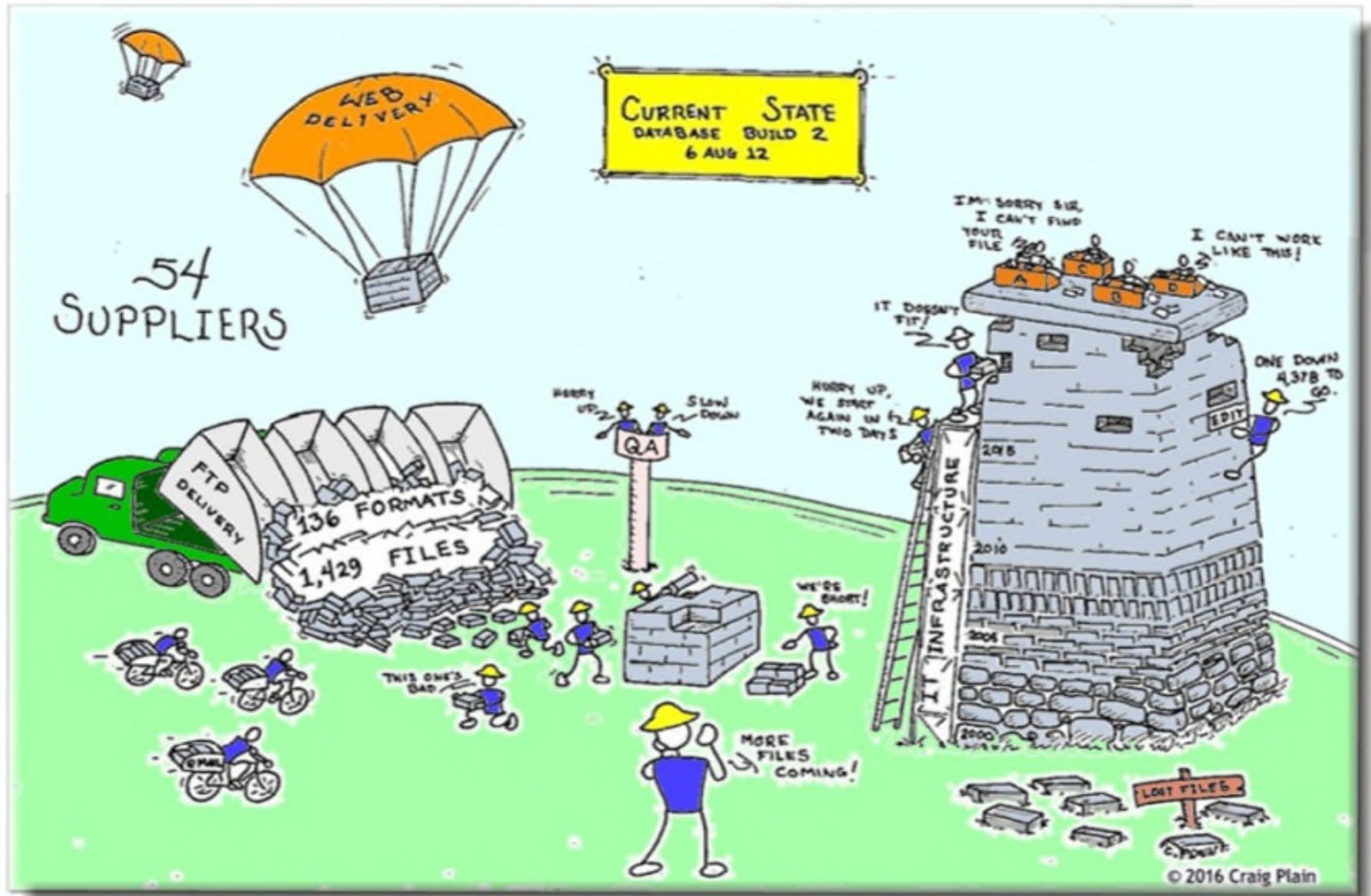
**Need to address broad transportation and consumer trends while still leveraging our foundational railroad strengths**



# Operational Excellence – Defining Value and Engaging People



Does this look familiar ?—



Acknowledging this and getting employees to open up about problems is the first step to improvement

# How People create Value....

At Toyota, everyone within the organization, from executives to shop-floor workers, is challenged to use their initiative and creativity to experiment and learn. We often hear labor advocates criticize assembly line work as being oppressive, and claim that menial labor robs workers of their mental faculties. However, this could not be further from the truth with respect to lean. **When Toyota sets up assembly lines, it selects only the best and brightest workers, and challenges them to grow in their jobs by constantly solving problems.** All areas of the organization are staffed with carefully selected individuals, and the company gives them directives to **improve their processes and increase customer satisfaction.**

Toyota invests time and money into their employees and has become the model for a true learning organization. The importance of teams and teamwork is a way of life: team-building training is required, and it is put to practice daily. This investment in its employees far exceeds that of the typical organization that focuses on making parts and counting quarterly dollars.

# A practical example at CN....



## Results Executive Summary

In May 2018, we launched a Perform deployment across 3 engineering teams & 4 corporate teams (c54 FTE) to support the P&SM transformation journey. The objectives of the roll-out were to:

- Embed new ways of working to improve visibility and communication and increase the amount of time spent on strategic activities aligned to P&SM business objectives to create value for CN
- Foster a continuous improvement mindset and build CN change agent capability to support the sustainability of the continuous improvement journey
- Raise employee engagement and morale and drive behaviour change to recognise and celebrate success
- Increase operational maturity to reduce time spent firefighting
- Build capabilities to reduce key person dependencies and free up capacity to enable more flexible resourcing and more collaborative working both within and across teams
- Identify and solve problems, using structured root cause analysis to empower individuals to work differently

over <b>310</b> Huddles	<b>15</b> New Standards	over <b>220</b> Coaching Sessions
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### Improved Proactive v Reactive

**48%** plan achieved at beginning of Perform

**91%** plan achieved at end of Perform

### Capacity Created

**5.7 FTE**

(13%) Through increased visibility and freeing people up from non value add activities and firefighting to focus on activity aligned with business objectives

### More Strategic Activity

**43%** Time spent on strategic activity at beginning of Perform

**52%** Time spent on strategic activity at end of Perform

### Increased Engagement

**52%** Of your staff felt their work morale was high at beginning of Perform

**73%** Of your staff felt their work morale was high at end of Perform

### Operational Maturity

**2.7** Up from a score of 1.9, with sustainment plans in place to lift this further through 2018  
Out of 5

### Problem Solving

**51**

Structured problem solving sessions resolving issues preventing the team from focusing on strategic & value add activities.

### Reduced firefighting

**30%** Less time spent firefighting now than at the beginning of Perform



These results only include those teams who were involved in the whole deployment - Engineering Materials (8 FTE), CoE-Kathleen's team (7 FTE), Transportation (4 FTE), Fuel (6 FTE), IT (8 FTE) and Corporate & Travel (10 FTE). These FTE figures exclude Senior Managers and Directors



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## Examples of ongoing Improvement Activities

# Enhancing Customer Experience – Enable Project



Support growth through a customer-focused multimodal offering



- Simpler customer experience
- Better communication channels
- Predictable transit time
- Improved shipment visibility across all modes



Reduce costs through a streamlined supply chain



- Standardize internal processes
- Proactive monitoring
- Better cost visibility
- Streamlined financial management



Improve business management through reliable, integrated information



- Product performance evaluation
- Improved pricing intelligence
- Accurate forecast of demand
- Improved service measures





## Mechanical -- Using Technology to Lower Cost, Identify Preventive Maintenance and Improve Locomotive Reliability

### Leveraging Real-Time Information

- Provide Carmen near real-time information and ability to report activities using mobile device and company-wide standardized process
  - Enable Carmen Supervisors to review work progress of car repairs

### Predictive Railcar Maintenance

- Leveraging machine vision technology to automate car inspections
  - Increases number of inspections, particularly for hard-to-inspect car undercarriage, reduces requirement for human review to flagged defects only, expected to decrease online failures
  - Full-scale pilot being deployed in Winnipeg in 2018 and scaled to the entire network thereafter
- Longer term, opportunity to reduce current spend on car inspections if fully automated

### Locomotive Reliability

- Exploring data analytics as a means to improve locomotive reliability
- Failure event, component, and utilization data are expected to help identify the various conditions that lead to locomotive failure
- Information to be integrated with locomotive assignment, maintenance scheduling etc. in order to improve reliability by preventing online breakdowns
- Potential savings could be significant – in saved acquisition costs and ongoing maintenance expense savings and the benefit of less congestion as on-line failures reduced Targeting 2020 completion



# Leveraging Process Improvement and Technology to Drive Cost Efficiency in Procurement and Supply Management

Category Management	Operating Model	Process Reengineering	Technology Roadmap
<p><b>Focus on total cost of ownership and reliability</b></p> <ul style="list-style-type: none"><li>• Progressively addressing \$5B of external spend</li><li>• All purchases aligned to 23 categories that mirror the supply market consolidating opportunities to leverage total spend, led by cross-functional teams</li><li>• Phase 1 implementation (6 categories) completed in Nov 2017</li><li>• Phase 2 completed July 2018 (5 categories)</li><li>• Targeting mid-2019 for completion of all categories</li></ul>	<p><b>New organizational structure based on best practice operating model</b></p> <ul style="list-style-type: none"><li>• Transition underway; completion by year end</li><li>• Operating model focused on:<ul style="list-style-type: none"><li>- <b>Strategic</b> – separating strategic activity from operational activity to enable category experts to create ‘best value for money’</li><li>- <b>Operational</b> – Procure-to-Pay function focused on compliance to category management and transactional efficiency</li><li>- <b>Enablement</b> – creating expertise in continuous improvement, supplier quality and development, and technology</li></ul></li></ul>	<p><b>New processes based on best practices, reducing risk, and enabling continuous improvement</b></p> <ul style="list-style-type: none"><li>• Over 50 standard working practices and procedures identified, developed and refined by the team</li><li>• Contract management and supplier performance implemented</li><li>• Procurement policy and remainder of processes to be implemented by year end</li></ul>	<p><b>System implementation to drive improved contract compliance and better spend visibility</b></p> <ul style="list-style-type: none"><li>• SAP Ariba (for parts) and Fieldglass (for services)</li><li>• Focus on sourcing, contract management, procure-to-pay, and supplier management</li><li>• 100% of spend through appropriate channels</li><li>• Full implementation completed in 2019</li></ul>

## So what stops us?

1. Lack of Capabilities
2. Failure to See the Value
3. Short on Time

**Value added work is the work that leads to successful completion of the longer-term strategic goals of the organization.** All the way through the organization, from the front line to the managers, to the CEO, value added work plays a role, linking people and the work they do to the strategic plan. **It's the type of work that stretches our capabilities, builds motivation and inspires.**