The Race is on! Or, Service, Capacity, Capex & the “Railroad Renaissance” -

The “Sandhouse Gang”

Chicago – My Kind of Town (or Congestion Capital?)

abh consulting

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Underlying Themes or “Givens” of the “Railroad Renaissance™

**Macro themes support rails**

- Green is here to stay
- Oil prices will remain high (price points at $65, $45, $25/barrel)
- Government spending will be problematic
- Infrastructure will be challenged
- Trade will be dynamic but will remain strong
- Near-sourcing and in-sourcing are continuing themes
- Trucking productivity has peaked
- Driver shortages are a secular/demographic issue exacerbated by government regulations (CSA/HoS)
- Govt stays out of the way (right?)
Future Growth Potential

Specific targeted sectors

Secular stories (in order)....
1. Intermodal – international and now domestic
2. Shale/oil/sand – problem and solution?
3. Chemicals/re-industrialization*? Near-sourcing/Mexico
4. Grain – the world’s breadbasket, predictable
5. Cyclical recovery – housing, autos
6. Other rail opportunities exist but in smaller scale:
   - The manifest/carload “problem” (hub and spoke) vs. point-to-point “unitization”/industrial products/MSW (garbage)/perishables/others/coal? Exports – “legs?”
21\textsuperscript{st} Century: the \textit{Railroad Renaissance}

- Rails have well beaten the market
- Rails consistently beat Street estimates – on the way up, in the great Recession, and in the tepid recovery
- Record results despite the coal hit (and drought and tepid economy, etc. . . .)
- Rails are re-gaining market share from the highway
- Short term, rails trade on EPS and OR
- Longer term, ROIC rules
Q3 Reports Solid/EPS up ~15% vs S&P +8%

- CSX – Beats Street, “No” on Consolidation
- KSU*—Beats Street, “No” on Consolidation
- CP*—Loved by Street, “YES” on Consolidation
- CNI*—Beats Street, “No” on Consolidation
- NSC*—near miss Street, “No” Consolidation
- UNP - Beats Street, “No” on Consolidation
- BNSF – NA (+), “No” on Consolidation
- GWR – Meets Street, NA/”NO”

(*Pre-announced or held Analyst Conference)
2010-2020: New Energy world Shakes Up Freight Railroading

• Coal drops 20% 2010-2013, more to come?
• CBR increases from 4K cars (‘09) to 400K + (2014)
• Gi-normous RR Capital Spend
• Targeted Business Spend – Chemicals, fertilizers, steel, autos, Mexico
• $100B in Gulf; $40B+ in Houston SMSA
• Can rails handle it??
Energy Changes in RR Carloads

• Total carloads off 1% 2010-2013
• 2010-13 Total Coal -15%; base Utility Coal off 20%+
• Coal Share of RR total from 24% to 21%
• CBR growth NMF (30K to 400K) – 1.4%T
• Chemical Growth Flat (~8% share)
• Sand doubled+ to 13%T; plus steel, aggregates, etc.
• Are we now worried about lower oil prices?!?
Coal in Trouble

• Historically 40% tons, 25% carloads, 25% revenues, higher % of net….all changed for good!
• Domestic in secular decline (-20%+ off 2006 peak) due to regulations/legislation, accelerated by weather, economy and, especially NG price
• Exports tied to global economy (ie; China); competition – and infrastructure access
• What was once “stable” and base business is the most uncertain
• Some stability ahead, esp for PRB, I-B & inventory rebuilds
• Solution: invest elsewhere…. 
U.S. Rail Traffic: 2013 vs. 2006

There was a significant change in the composition of rail traffic between 2006 and 2013.

Coal: -1,622,000

Intermodal containers & trailers: +549,000
Crude oil: +403,000
Crude industrial sand: +266,000
Chemicals: +216,000
Metallic ores: +169,000
Food: +102,000
Products of petrol. refining: +34,000
Paper products: +32,000
Cement: -13,000
Ground earths & minerals: -48,000
Waste & scrap: -103,000
Grain: -123,000
Primary metal products: -151,000
Lumber & wood: -216,000
Crushed stone: -264,000
Motor veh. & parts: -599,000

Figures are carloads, except for intermodal, which is containers & trailers. Source: AAR Freight Commodity Statistics for carloads; AAR Weekly Railroad Traffic for intermodal.
Recent declines in coal traffic far exceed recent gains in crude oil and associated traffic.

Change in Originated Carloads for Class I RRs: (2010 + 2011) vs. (2012 + 2013)

- Coal: -1,964,162
- Chemicals: -273,265
- Grain: -472,917
- Crude oil: 546,103
- Crude industrial sand: 247,728
- Paper products: 85,470
- Primary metal products: 70,214
- Cement: 49,474
- Products of petrol. refining: 48,189
- Lumber & wood: 15,157
- Ground earths & minerals: -9,593
- Metallic ores: -11,377
- Food: -56,431
- Waste & scrap: -66,194

Source: AAR - Freight Commodity Statistics
Shale

• Frac Sand, brine & water, pipe and aggregates inbound
• In cases of Oil, “Rolling Pipelines” out…. 
• Hess – 286 cars, 9 trainsets now, 27 in a few years (followed by Phillips 66, Valero, others)
• Pipeline companies developing rail terminals in ND
• Rails spending capital (BNSF $4.1B!) vs ethanol example
• Tar Sands and pipelines
• Chemical Industry – secondary impact
• Industrial Development – tertiary impact
Shale Related Rail Traffic Still Small Relative to Coal Volumes – PLG Consulting
2013 – the Bridge Year

- End of the coal slide?
- End of the drought?
- Continued slow economic growth
- Improved cyclical recovery in housing & autos
- Shipper capex in chemicals, autos, Mexico
- Rail investment in Domestic Intermodal
- CBR and other shale impacts
- Re-Industrialization begins…. 
Rail Renaissance Phase Two

- Rails to exit transitional period
- CBR to continue
- Domestic Intermodal will achieve investable returns – the *big bet* will pay off
- Market confusion – OR vs ROIC=opportunity (BNSF example)
- Industrial revival – the real energy advantage
- NAFTA

- **Risks:** Service; Execution; Safety; Regulation
- **Risk:** M&A??
New Developments 2014

• RR service issues reborn (Ag, CBR, IM, etc)
• The Race Is On to restore the Grand Bargain
• The can be no excuses – rails remain under the 2013 safety cloud
• CP sells DMEW for $210mm – to GWR! Uses proceeds to…buy CSX??
• The weather didn’t help – worst ever in Chicago
• Record capex again….help is on the way
• New managements at BNSF & NSC, CP, UP
• Ave et Vale Pacer (and Helm and....)
• Tank Cars make the papers....
• Volumes exceed expectations, economic outlook, led by grain, intermodal, I/P &coal!
The “Grand Bargain”

- In return for higher prices (& ROI), rails spend, increase capacity & improve service (2005-2012) – The unstated “Grand Bargain”
- Rails gain pricing power (~2003) & F/S
- Rails (re) Gain Market Share
- Rails Spend Cash “Disproportionately” on Capex (~18-20% of revenues)
- Promotes “Virtuous Circle” – all stakeholders benefit
- Under challenge, perceived and real
Four Kinds of Growth/Location

- Cyclical (ex autos)
- Secular (ex intermodal)
- Episodic (Grain – 50 year drought then record 7 record); coal?
- New – brand new – CBR
- Where? Low-density “NorthernTier” + winter
- Direction – some through Chicago

Remarkable adjustment to handle a brand new industry and play a major role in America’s “energy revolution”
Service concerns arise for the first time in a long while.
Terminal Dwell Increasing (AAR)
Velocity declines – Across the Board (AAR)
Chicago

- Once again, as in the “Roaring 20s” or ‘68, the nation looks at Chicago as dangerous
- What is new about these traffic flows?
- Should this have been foreseen?
- Can one match 30-50 year assets and incomplete demand forecasts?
- What is being done about it?
- CREATE?
- M&A?????
A new concern?: SAFTEY

...driven by several recent incidents

Online Search Interest Over Time
Keyword = “Train Crash”

Source: Google Trends, frequency of searched terms.
Note: *Numbers represent search interest relative to the highest point on the chart.
Record Spend, Better IT

Rail Safety: Spending and Accident Rate

Rail Spending on Infrastructure & Equipment *
vs. Overall Train Accident Rate**
(2003 = 100)

* Capital spending + maintenance expenses on infrastructure and equipment
** Total train accidents per million train-miles

Source: AAR, FRA
Revenue Share
Percent of Total Revenue for Major US Railroads

* 2012 estimated based on first half of year

Source: AAR analysis of 10-K reports for BNSF, CSX, KCS, NS & UP
Intermodal Growth Drivers
Domestic and International

- Globalization
- Trade
- Railroad Cost Advantages
- Fuel prices
- Carbon footprint
- Share Recovery from Highway
- Infrastructure deficit & taxes
- Truckload Issues; regulatory issues, driver issues
Intermodal Ten Years After

• *Rail Renaissance I* (2000s) driven by globalization & international intermodal
• RR2 will be driven by Domestic IM “trucks off highway” (albeit with bi-modal partners)
• Critical to the Rail Renaissance is ROIC
• See IANA/AAR “White Paper”(*IM:10* Years After)
• Capex, IT, Service, Fuel Price, Highway Issues
• The “Curse of OR”; or lack of understanding
• Recent results (H114 up 8%) show that despite current service, demand remains…. 
Intermodal 2014

• More balanced growth (all about +5%) between domestic & international than expected
• Service issues (Hub, JBHT)
• Demand there – IM gains overall share form ~17% to ~18.5% (FTR)
• Domestic rates still trail TL price gains
• ILWU
• Driver Turnover hits 103% Q2/14
• Chassis
• Planning Issues: Canals; Slow Steaming (and ocean ROI); Alliances; Fuel Prices, Politics
Intermodal Innovations

• Direct Service/Connect to BFO (UP, etc)
• Short haul – International & Domestic (NS)
• Hub & Spoke (CSX)
• Ag & Rural (CN)
• Bulk (Schneider)
• Perishables
Phase 2 IM Revolution

- Translate Domestic Growth into ROI (see BNSF/International ~2005)
- Prove service consistency/add capacity
- Ease Bi-modal partnership frictions
- Raise rates!
- Provide reliable service (Grand Bargain)
- Wean Wall Street form “The Cult of the OR”
Re-industrialization?

• Near-Sourcing: Mexico, CA
• Gas effect round two:
  – CHEMICAL INDUSTRY
  – Fertilizers
• Steel/Aluminum/Autos/White Goods etc.
• Northeast, etc. back “in play”?
• Subject of future research
Emerging Petrochemical Boom

- Recent presentations at SWARS, NARS etc. etc. (BASF, ChevronPhillips, BaselLyondell, etc.)
- NA Chems & plastics production to double by 2020; US exports to rise 45% to over $30B
- USA inflected from importer 2011 to exporter last year ($3B)
- Shale-related investments alone to generate $67B in related shipments; generate $201B in industry output (ACC)
Service, Capacity & Capital

• Service requirements only increasing with declining LOH
• Capacity challenges from new intermodal
• Capacity challenges from increasing passenger opportunities – HSR, HrSR
• Capacity challenges from local passenger service: Metra “rush hour windows” = 1/4 weekday freight slots in Chicago
• Can service/capacity/capital (& ROI) issues be resolved?
• Consolidation?
Growth is Expensive: Record Rail Capex in 2011-12-13 – 2014?

- **Broken record:** Record $12B in 2011; record $13B in 2012, record $14B+ in 2013; record ~$16B in 2014
- BNSF spending $5B  a) inc. cars!  b) is it enough??
- UNP, KSU haven’t told us yet (??)
- Many rails pegging at 16-18% of revenues (rising by double digits)
- KSU at 26%!! US industrial average +1-3%
- Some Rails have announced reductions in “%/revs” (UNP) or otherwise given guidance changes – CP- **yet more rails (2 so far in ‘14) have added or announced plans as the year progressed**
- Corridor developments, NG, terminals, locos, cars, shale build-outs, etc.
- PPPs – in decline?
- Rails are still emerging as DPS plays, buying in shares
- Total spend was ~$26+B in 2014!
- EX-PTC!

- **2014 Capex Plans/spend will be very, very interesting**
Higher Rail Earnings = Higher Rail Reinvestments

*Capital spending plus maintenance expenses per mile of railroad owned. Data are current dollars and are for Class I railroads. Source: AAR
Source: *Railroad Facts & Analysis of Class I Railroads*, AAR. abh estimates
Close Correlation Between RR ROI and Reinvestments

*Capital spending + maintenance expense. **Net railway operating income / average net investment in transportation property. Data are for Class I railroads. Source: AAR
Railroad Cost of Capital vs. Regulatory Return on Investment

Source: Surface Transportation Board
Note: Cost of equity estimation method changed by Board effective 2006 and 2008.
**Assets vs. Revenue**

*Firms in different industries have very different quantities of assets required to generate their profits. Firms with more assets — like railroads — need higher profits in order to cover the costs of those assets.*

**Ratio of Assets to Revenue: 2013**

<table>
<thead>
<tr>
<th>Industry</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utilities, Energy</td>
<td>3.52</td>
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<tr>
<td><strong>Railroads</strong></td>
<td><strong>2.81</strong></td>
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<tr>
<td>Mining, Crude Oil Production</td>
<td>2.67</td>
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<tr>
<td>Pharmaceuticals</td>
<td>2.30</td>
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<tr>
<td>Telecommunications</td>
<td>2.11</td>
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<tr>
<td>Beverages</td>
<td>1.78</td>
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<tr>
<td>Household &amp; Personal Products</td>
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<tr>
<td>Pipelines</td>
<td>1.36</td>
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<tr>
<td>Construction &amp; Farm Machinery</td>
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<tr>
<td>Chemicals</td>
<td>1.32</td>
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<tr>
<td>Airlines</td>
<td>1.25</td>
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<tr>
<td>Forest &amp; Paper Products</td>
<td>1.22</td>
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</tbody>
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<tbody>
<tr>
<td><strong>Fortune 500 Median</strong>*</td>
<td><strong>1.14</strong></td>
</tr>
<tr>
<td>Aerospace and Defense</td>
<td>1.14</td>
</tr>
<tr>
<td>Packaging, Containers</td>
<td>1.13</td>
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<tr>
<td>Industrial Machinery</td>
<td>1.11</td>
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<tr>
<td>Motor Vehicles &amp; Parts</td>
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<tr>
<td>Electronics, Electrical Equip.</td>
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<tr>
<td>Metals</td>
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<tr>
<td>Food Production</td>
<td>0.73</td>
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<tr>
<td>Package &amp; Freight Delivery</td>
<td>0.70</td>
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<tr>
<td>Petroleum Refining</td>
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<tr>
<td>Trucking &amp; Logistics</td>
<td>0.58</td>
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<tr>
<td>Retailers</td>
<td>0.46</td>
</tr>
</tbody>
</table>

*Excludes real estate and financial firms. Source: Fortune June 16, 2014, BNSF 10-K*
Rails Have Room to Improve in ROI

Weighted Average Cost of Capital and ROIC by Industry, 10 Year Average (2004-2013), Bloomberg calculations assembled by Parthenon

Note: Bloomberg calculations are a total annual invested capital weighted average of S&P 500 companies within the industry during 2014
Source: Parthenon using Bloomberg data
Railroad Growth Prospects

Western Carriers have:
- PRB (and IB) coal
- Direct or close to direct CBR access; frac sand
- Larger reliance on international intermodal
- Stronger chemical and Ag business
- Mexico
- Origins, LOH

Eastern carriers have:
- C-App coal (declining!)
- Indirect (received) CBR
- Domestic Intermodal opportunities
- Larger industrial opportunities
- Destinations
and the winner is....?

- BNSF has the Jed Clampett Luck factor, and is privately held...can spend strategically (but so do most)
- UNP has the broadest exposure to growth markets, a continuing culture of cost reduction (only BNSF can compete), and a huge position in chemicals in particular
- **BUT - NO losers! The rail network must step up....**
- CP – the smart money favorite rides EHH – how far? To Jax? Too close to the sun?
- CNI leverages best cost structure & culture into growth (“kindler/gentler”)
- KSU has Mexico ... eventually....
- CSX and industrial revival and intermodal and a sharp management group – ready to do battle again?
- NSC is the historic class act of the group and will benefit most when domestic intermodal inflects (see White Paper)