

THE DYNAMICS OF CHANGE RESISTANCE IN INDUSTRIES WITH LONG-LIFE PLANT

presented to the

13TH INTERNATIONAL HYDRAIL CONFERENCE

at the

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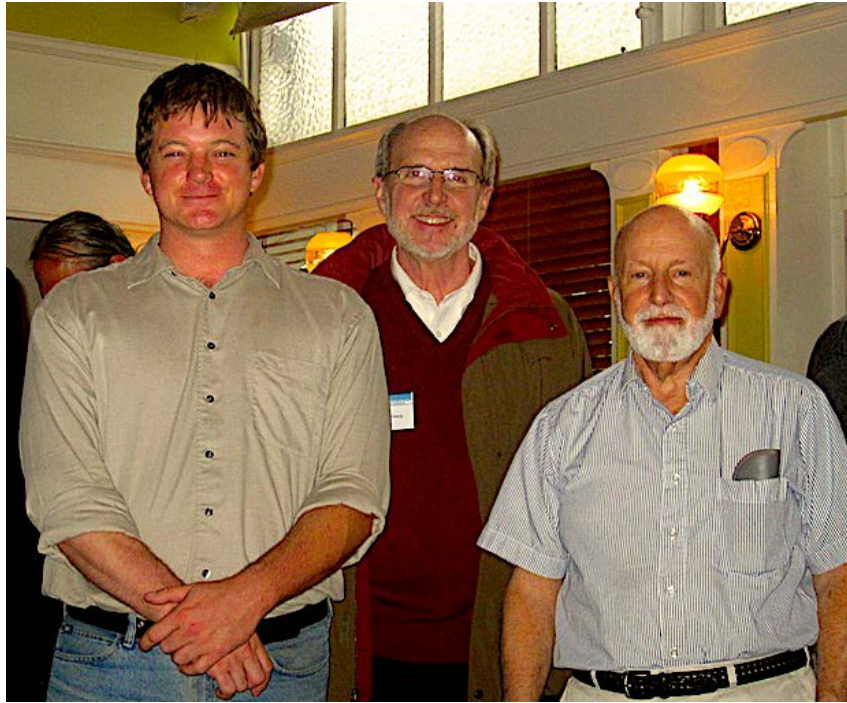
THE MOORESVILLE HYDRAIL INITIATIVE



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Mooreville South Iredell Chamber of Commerce &
The Mooreville Morning Rotary Club



THE MOORESVILLE HYDRAIL INITIATIVE: WHO WE ARE



Jason W, Hoyle, Research Analyst, The Energy Center, App State.

With hosts, produces the annual International Hydrail Conferences. Created the ***hydrail.appstate.edu*** international web site

Bill Thunberg, former Mooresville Mayor; former Chamber Chairman, now Exec. Dir., Lake Norman Regional Transportation Commission.

Bill is the Hydrail Initiative's "Chief Information Officer"

Stan Thompson, retired strategic planner and environmental and transportation futurists, BellSouth Telecommunications (now AT&T), 12-year columnist on history and economics, *The Mooresville Tribune*. Coined "hydrail" in 2003

WHY THE CHANGE TO HYDRAIL RAILWAYS IS IMPORTANT:

CLIMATE
CHANGE



DIESEL AIR
POLLUTION



CAPITAL
PRESERVATION



A CORPORATION'S CULTURE MIRRORS ITS TECHNOLOGY'S LIFE SPAN

iPhone scale:

- Change product yearly to survive

- Bought by public as **individuals**

- Innovators recruited, celebrated



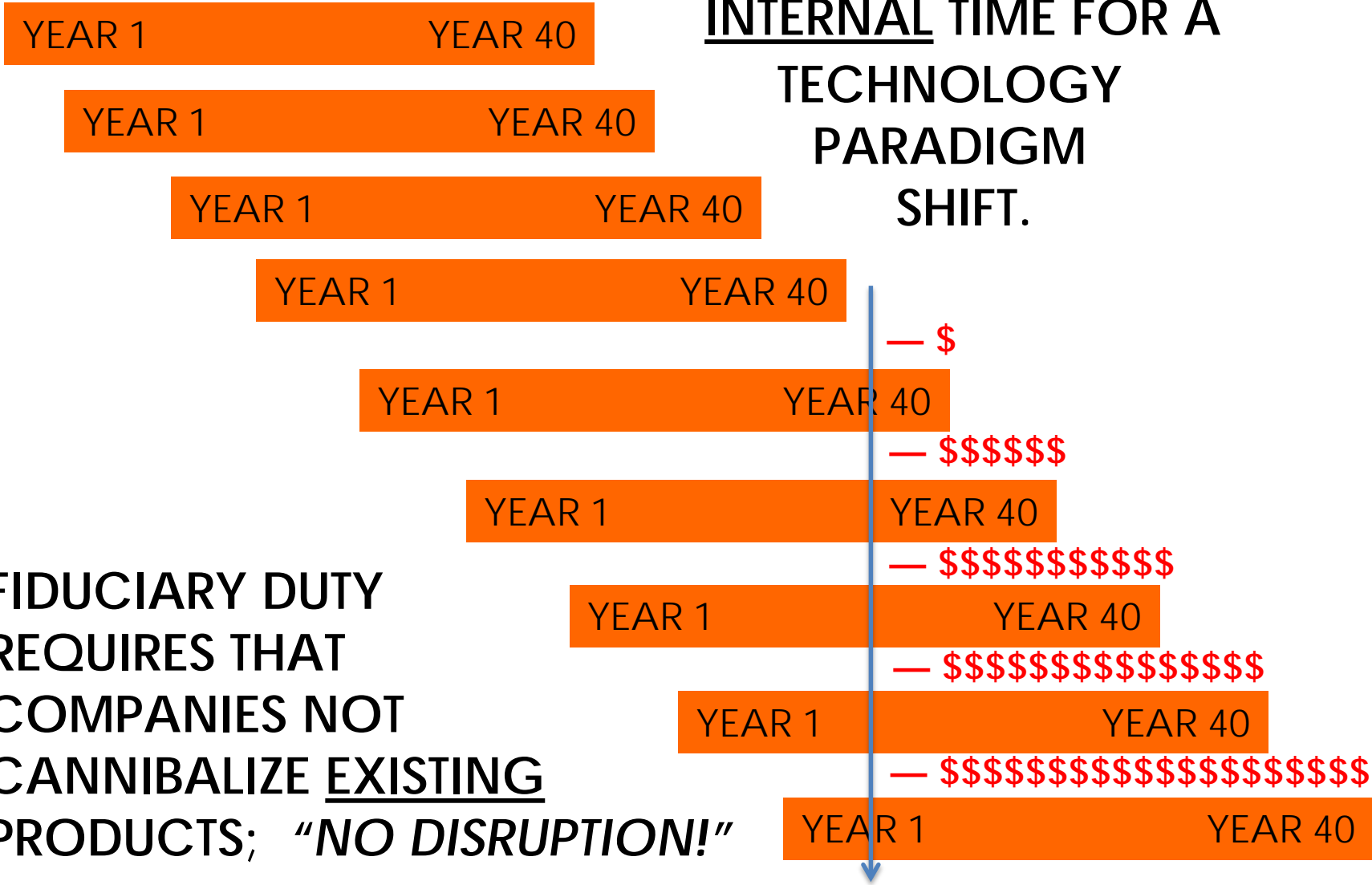
Locomotive scale:

- Attain full 35-yr depreciation life to survive

- Bought **collectively** by public via corporations and governments

- Innovators avoided, a bit mistrusted

IN A LONG-LIFE PLANT ORGANIZATION, THERE CAN NEVER BE A GOOD INTERNAL TIME FOR A TECHNOLOGY PARADIGM SHIFT.



FIDUCIARY DUTY
REQUIRES THAT
COMPANIES NOT
CANNIBALIZE EXISTING
PRODUCTS; *"NO DISRUPTION!"*

CHANGE IMPETUS IS **EXTERNAL** IN LONG-LIFE INDUSTRIES

- MARKET PRESSURE: IF ONE COMPETITOR HAS HAD TO CHANGE, A “DOMINO EFFECT” CUTS IN
- PUBLIC PRESSURE: SOCIETY LEARNS THERE IS A LOWER COST/MORE ATTRACTIVE/GREENER TECHNOLOGY AND *PUBLIC PRESSURE* OVERRIDES THE DEPRECIATION/CULTURE RESISTANCE
- OVERRIDING PRESSURE IS BROUGHT TO BEAR BY CUSTOMERS, REGULATORS, LEGISLATORS, INVESTORS AND EMPLOYEES....

BUT HOW DO CUSTOMERS, REGULATORS, INVESTORS AND EMPLOYEES LEARN THAT A NEW ALTERNATIVE EXISTS?



NOT FROM INDUSTRY, FOR THE REASONS JUST DESCRIBED.



NOT THROUGH SOCIAL MEDIA: LIMITED TO INTEREST GROUPS
AND NO ONE KNOWS TO ASK.



NOT THROUGH BROADCAST MEDIA: IT'S NOT SUDDEN, NOT
TELEGENIC, AND THERE'S NO BLAME ANGLE.



IDEALLY, **NEWSPAPERS** WOULD LET THE PUBLIC KNOW
BUT...





NEWSPAPERS *SHOULD* BE THE IDEAL WAY FOR THE PUBLIC TO LEARN ABOUT NEW, LONG-LIFE INDUSTRIAL TECHNOLOGIES THAT EFFECT THEM: ENERGY, TRANSPORTATION, NON-RADIO COMMUNICATIONS.....**BUT**



- OVER THE PAST TWO DECADES, INTERNET ADVERTISING HAS TAKEN AWAY MOST NEWSPAPER REVENUES.
- THE FIRST REPORTERS “LAID-OFF” HAVE BEEN THE SEASONED **TECHNOLOGY** AND **BUSINESS** WRITERS.
- THOSE WHO REMAIN ARE ONLY CONFORTABLE **QUOTING “THE USUAL SUSPECTS”**.
- **THESE ARE THE INDUSTRIES WHOSE LEGACY TECHNOLOGY IS *MOST THREATENED* BY NEW INNOVATIONS !**



- MATTERS ARE MADE MUCH WORSE BECAUSE MOST OTHER MEDIA—ALSO LACKING THE EXPERTISE TO INTERVIEW INNOVATORS—DECLINE TO TALK TO THEM AT ALL BECAUSE THEY ARE CERTAIN THAT, ***“IF THAT WERE POSSIBLE, IT WOULD HAVE BEEN IN ALL THE NEWSPAPERS.”***

Technozombie: external railway electrification

In 1879, when Werner von Siemens invented it...

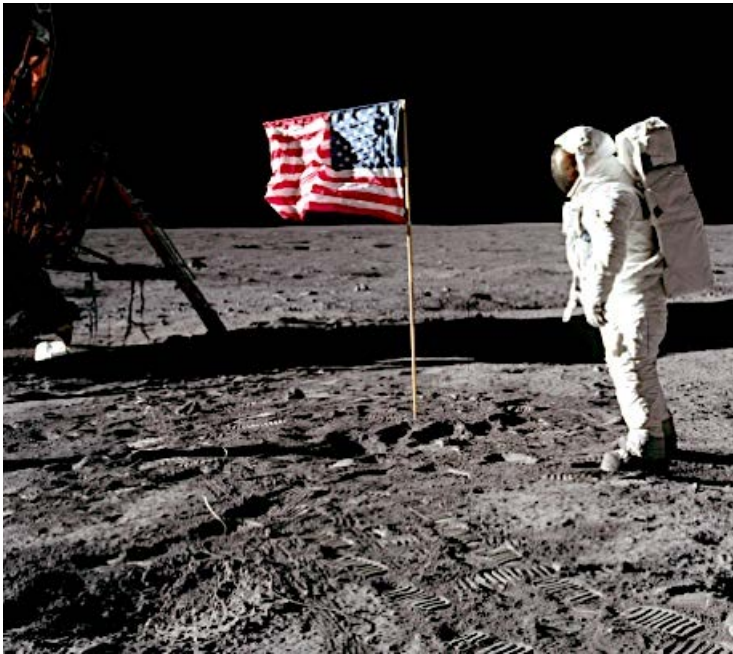
- **Jefferson Davis** was completing his Civil War history.
- **Ulysses S. Grant** was basking in retirement.
- **Brahms, Verdi and Puccini** were writing music.
- **Queen Victoria** still had 22 years left to reign.
- The **Wounded Knee** massacre had **not yet** happened.
- **Teddy Roosevelt** just turned 21.
- **Custer's last stand** had been just three years earlier.



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IT'S BEEN ALMOST HALF A CENTURY
SINCE **FUEL CELLS** TOOK US TO TO
THE MOON . . .



. . . AND YET THIS IS HOW WE STILL
ELECTRIFY MOST TRANSIT !

- There are about **233,000** miles of track in the USA's rail network...
- At **\$5-10 million/mile** (*if there were enough copper in Earth's crust to electrify it*), the cost would be a quadrillion or so.
- A **10-million-dollar, railway-sized hydrail fueling station** at the end of the line costs about as much as ***one mile of track electrification***.



WHY AWARENESS-DRIVEN TIMING MATTERS

CHRONIC EXPOSURE TO DIESEL EXHAUST
CAUSES HEART DISEASE LEADING TO DEATH...



...AND TRACKSIDE SLUMS, GHETTOS AND FAVELLAS (WHICH COULD NEVER JUSTIFY ELECTRIFICATION) *WILL BE THE LAST TO BAN DIESEL*

THE CORPORATE LONG-LIFE=CHANGE-AVERSE/TECHNOPHOBE MEDIA DYNAMIC THAT'S NOW DELAYING HYDRAIL IS **LIKELY TO COST THOUSANDS OF HUMAN LIVES**, BEGINNING IN A DECADE OR SO.

Visit the world hydrail web site at
Appalachian State University:

<http://www.hydrail.appstate/conferences>

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