Gravure Summit

Gravure at a Crossroads

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Long Term Share Decline (Graphic Arts)

- Despite its many strengths, gravure’s share of the Graphic Arts market has been declining for five decades.

Source: Ecker, Overview of Gravure Printing Technology, Jul 04, SpecialChem
Not Unique To Gravure

- Long term share declines are a common story in industry.
- Nevertheless, stories with similar beginning can have very different endings.
After decades of declining share:

- The Cellophane Industry retreated to a highly profitable niche, but ...
- The Rail Freight Industry reinvented itself and ignited new growth.
  - Market share increased from 27% in 1980 to 39% today.
The Crossroads

- Gravure is at a crossroads. It can either:
  - Retreat to applications where it has a sustainable competitive advantage, or ...
  - Reinvent itself and reignite growth.

- Retreat is easy to understand:
  - Find applications where your technology is uniquely advantaged.
  - Restructure to be profitable in these applications.

- Reinvention is a more difficult path.
Working on the Railroad – Root Cause

■ Government Regulation
  • Prohibited from setting prices or abandoning routes.

■ Subsidized Competition
  • Trucks use public highways; Railroads build railways.

■ Business Model
  • Adversarial: Trucking is “Public Enemy #1”.

■ Productivity
  • Railroads grew fat in a regulated environment.
  • Unions negotiated crippling work rules.
  • Productivity improvement lagged other industries.

Source: AAR, May 2015,
Working on the Railroad – Cure

Government Regulation

- 1970: PennCentral bankruptcy; the government wakes up.
- 1976: Conrail - 6 east coast RRs become wards of the state.
- Mid-70’s: Effective railroad lobbying results in suspension of the ICC’s power to prevent route abandonments.
- 1980: Staggers Act deregulates the rail industry.

Subsidized Competition

- No change.
- Public spending on Highways: $156 Bn (Fed, State, Local).
- Public spending on Interstate Rail: $1.3 Bn (Fed).
- Amtrak subsidy: $0.3 Bn.

Staggers Act

Subsidized Roads
Working on the Railroad – Cure

Business Model
- From Adversarial to Collaborative: Intermodal Freight
- Rail and trucking grow at the expense of barges and pipelines.

The Reality of the Change
- 1981: Burlington Northern (BN) intermodal team formed.
  - Intermodal services (piggybacking) are rare and seldom offered.
  - Proud railroad traditionalists meet entrepreneurial truckers.
- 1982: The intermodal team threatens the status quo.
- 1982: Two hub pilot approved - Midway, MN to Portland OR.
  - Launch date set: January 83 (middle of winter, deep recession)
  - BN top management set up its own team to fail
- 1990: BN total revenue - $4.5Bn. Intermodal revenue - $1.0Bn.
Working on the Railroad – Cure

Productivity

- Railroads achieved a 5x improvement in ton-miles per employee between 1980 and 2005.

- Initially, the productivity growth was driven by the adoption of best practices.

- Over the long haul, new technologies were the engine of sustained productivity growth:
  - Technologies like Computerized Planning and Operations Systems could be developed company by company.
  - The cost and risk of developing others, like heavy duty rail, could not be born by any single railroad.
  - Railroads joined forces to develop new technologies that would be used by all railroads, to their mutual benefit.
Working on the Railroad – Cure

Cooperative Development

- The problem with technologies like heavy duty rail is:
  - It takes millions of ton-miles to precipitate failure.
  - Failure modes can be totally unexpected.
  - The consequences of failure can be catastrophic.

- The solution was a dedicated test facility.

American Association of Railroads (AAR)

- The AAR played a vital role in enabling cooperative development.
  - It lobbied for the creation of a dedicated test facility, the Transportation Technical Center (TTC).
  - Today, AAR members set the TTC research agenda, fund TTC operations, and share the benefits of new technologies.
Lessons for Gravure

- Even hopeless starting points do not preclude the possibility of transformative change.

- The first step in the transformation was simply to implement best practices.

- Sustained improvement required transformative new technologies.

- Industry collaboration sped development of technologies which were used by all, to the benefit of all.

- The transformation depended on increasing value (Intermodal) and reducing cost (Productivity).
Research Agenda

- Quantify the gap between typical practice and best practice. Make this opportunity visible to the industry.

- Document opportunities for transformative breakthrough enabled by new technologies.

- Estimate the value print buyers place on gravure by market segment.
Gravure Manufacturing Survey

- **Objective:** Quantify typical and best manufacturing performance.

- **Mechanism:** A jointly sponsored (GAA/Gravure Research Chair) survey of industry performance.

- **Risk Management:**
  - The survey tool is configured to protect the identities of participants.
  - Even the researcher will be unable to link individual participants to the survey answers they submitted.
How The Survey Works

- For most participants, taking the Gravure Manufacturing Survey entails answering 22 questions.
- Each participant chooses the manufacturing category or categories relevant to his or her business.
Presentation of Results

- Results will be presented as distributions of responses.
- For large enough samples, best fit statistical distributions will be added.
- Key differences will be tested for statistical significance.
Dissemination of Results

- All members will receive an electronic copy of the research report.

- The results will be published and in the public domain.

- All data is anonymous. The link between you and the data you submit has been permanently severed.