

University of Wales Trinity Saint David DBA Programme

Approaches to Research and Academic Communication

**Module Code: HKBM7000
Lecturer: Dr. Chammy Lau**

**Student: LEE, See Kong Frankie
Student ID number: 2124400
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A comparative study on the business and financing models for MTRC of Hong Kong and for other leading railways in the world:

How sustainable is MTRC's model through the time? Can it be replicable?

1. Research Problems and Objectives

a) Company/Industry Background

- **Railways**: essential means of transportation in the global market for
 - moving people and goods from one place to another
 - promoting business & trades to bring benefits to enterprises & households
- **Focus**: adoption of business, technology and process for providing railway services to **passengers**, instead of freight carriers

1. Research Problems and Objectives

b) Definition of Problems

After preliminary literature review & exploratory research, key issues identified:

- Sigalos' opinion (2015):
“Mass Transit Railways Corporation (MTR) was an impressive subway system, with more than 5 million daily commuters, 99.9% on-time arrival rate, incredibly cheap fares (USD0.5 to USD3), which was able to cover roughly 175% of the system's operating costs”.
- Still valid in 2022 (COVID-19 & geopolitical events)?

1. Research Problems and Objectives

b) Definition of Problems

- Leong's assertion (2016): "Hong Kong's successful self-financing formula, the 'Rail plus Property Model' (Cervero & Murakami, 2009), has demonstrated how integrating railway expansion with property management can help make public transit systems financially self-reliant while also promoting sustainable urban growth."
- Financial self-reliance of MTR still valid in 2022?

1. Research Problems and Objectives

c) Research Objectives

- update evaluation of MTR's corporate performance
- Comparative analysis of leading railways companies in the world
- Understand their business models and best practices / standards contributing to their success in achieving organizational & social objectives
- How sustainable is MTR's business and financing model?
- Is MTR's business and financing model replicable?

2. Research Design

a) Definition of Variables

- **Financial performance and viability**: observe the below indicators from financial statements and other public information over 10 years for the 5 selected companies:
 - Revenue from railways and related operations
 - Revenue from non-railways related operations (incl. real properties, consultancy and operational management services)
 - Operating income by business segment
 - Variability of the revenue and operating income
 - Financial viability by transport-related operations?
 - Any need for government funding?

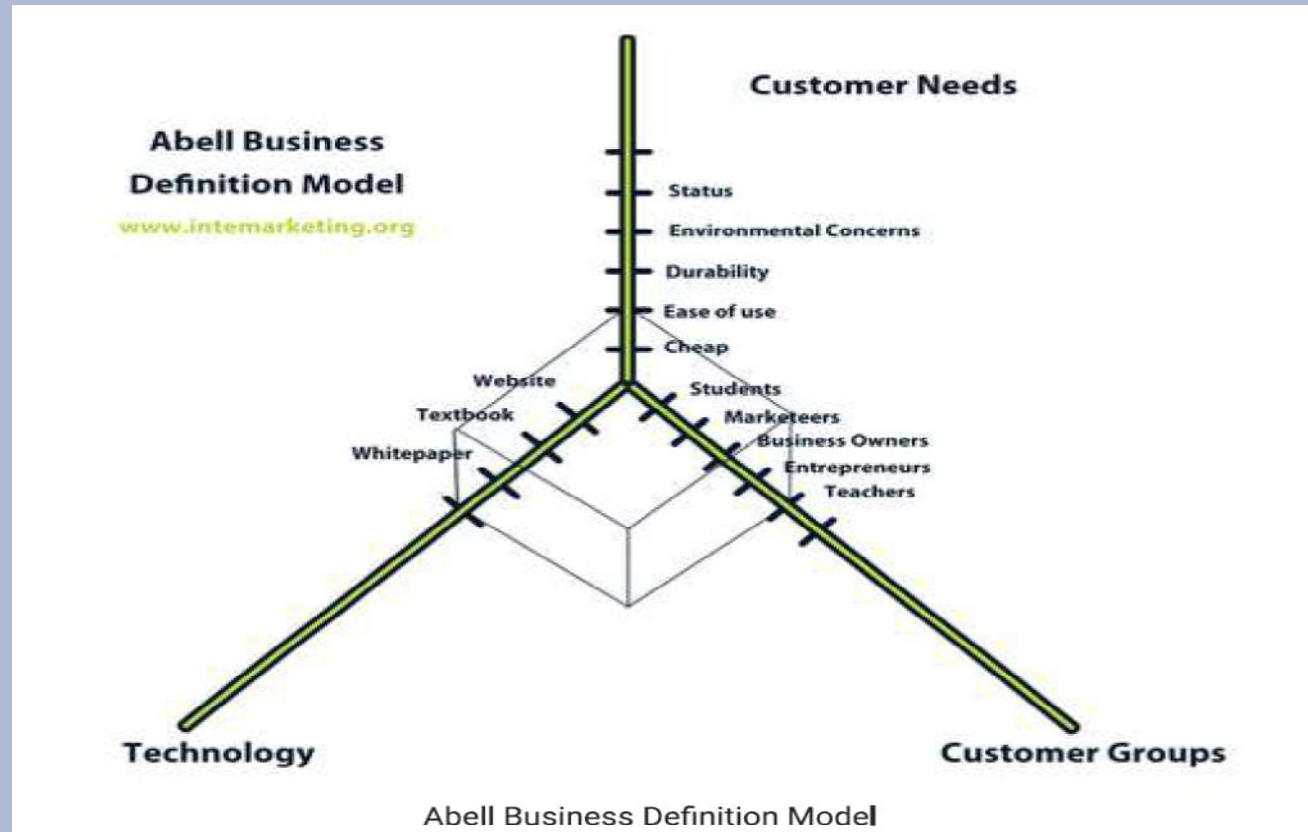
2. Research Design

a) Definition of Variables (cont'd)

- **Operational performance:**
 - > By adopting **Abell Three Dimensional Business Definition Model** (Abell, 1980), identify clear market delineation of current activities of MTR
 - **Customer groups** (Who?)
 - **Functions** (What are the customer needs?)
 - **Technology** (What tools & process for meeting such needs?)
 - > Abell Model can also be applied to adapt MTR's corporate strategies for meeting the changes in the market

2. Research Design

b) Framework of Relations



2. Research Design

b) Framework of Relations (cont'd)

- **Customer group(s):** Commuters
- **Customer needs (Key Performance Indicators, KPI):**
 - Safe (KPI: Incident reports/ deaths & injuries reports)
 - Reliable (KPI: Passenger service on-time performance)
 - Affordable (KPI: Level of fares & charges)
 - Accessible/easy to use (KPI: Barrier-free accessibility; customer information & communication)
 - Comfortable (KPI: Location temperature, air quality)
 - Efficient (KPI: Speedy delivery of service)
 - Value-added services (KPI: Quality of additional services)
- Similar analysis for other customer groups (e.g. tenants or owners of properties developed or managed by MTR).

2. Research Design

c) Research Method

- Cross-sectional comparative analysis of leading and representative railways groups, each being selected from Asia, Europe and Americas, in addition to Hong Kong
- Longitudinal analysis of the evolution of the business and financial performance of the selected railways companies

2. Research Design

d) Sampling

- From the Top Ten Railways Groups league tables in terms of market capitalisation and revenue published by business-to-business sales and marketing platform BizVibe (2022)
- The top one in each of the Asia, Europe and Americas, with focus on passenger business => JR East (Japan), Deutsche Bahn (Germany), Amtrak (prominent passenger railways in the USA, although not listed on the league tables)
- Selecting Network Rail due to the U.K. history of constructing the first railways in the world.

2. Research Design

e) Measures

- Revenue Contribution & Operating Income Contribution by segment:
 - > transport-related
 - > non-transport-related
 - > real property/hotels
 - > consultancy/operational management
 - > other businesses (overseas projects)
- For non-financial operational performance: obtain data from published reports from the selected companies
- supplemented by information: from the Community of Metros (“COMET”) Worldwide Urban Railway Performance Benchmarking Report

3. Data Collection, Analysis & Report

a) Proposed Data Collection and Processing

Sources of data (mostly publicly available data):

- published annual reports and financial statements from the five selected companies
- Environmental, Social and Governance Reports / Sustainability Reports issued by the selected companies
- Government policy documents/legislative documents
- Ten-year financial summaries
- Work out the % contribution of revenue and operating income by sources
- Ridership: no. of passengers on an average weekday & in a calendar year.
- Gross ticket revenue

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3. Data Collection, Analysis & Report

b) Data analyses to be used for each of the selected companies

- Variability analysis of revenue and operating income
- Cost recovery ratio

3. Data Collection, Analysis & Report

c) Expected Findings & Recommendations

- With its diversification into real property development and management, non-domestic businesses (transport and non-transport related), MTR of Hong Kong should demonstrate
 - > **stable** level of income
 - > **financially self-reliant** and more **resilient**
- Due to the **capital intensive** nature of railways business, railways companies in Europe, UK, USA and other countries may show **heavy reliance on government grants and funding**.

3. Data Collection, Analysis & Report

d) Report and Organization

- Findings
- Analysis
- Conclusions:
 - With the updated findings, it can be tested whether Sigalos' opinion (2015) and Leong's assertion (2016) still valid?
 - > Expected answer: Yes!
- If the above is yes, how can this success story be explained by Yu's Heart-Head-Hand (3H) Holistic Management Framework (2022), given that passenger services are people business?

3. Data Collection, Analysis & Report

Yu's Heart-Head-Hand (3H) Holistic Management Framework (2022)



3. Data Collection, Analysis & Report

d) Report and Organization

- Conclusions (cont'd):
 - With the operational and financial data from railways companies based in Asia, Europe, U.K. and U.S.A., it can be evaluated whether Leong's assertion (Rail plus Property model) is unique to Hong Kong, or the business and infrastructure financing model can be applied to other jurisdictions?
 - > Expected answer: Not unique; JR East of Japan has also been adopting similar business and financing model and is profitable.

3. Data Collection, Analysis & Report

d) Report and Organization (cont'd)

- Discussion
 - Can the success model of MTR be replicated to other cities?
 - How?
 - Any good aspects of business models/strategies of other railways companies for replication? e.g. strategies for decarbonisation drive in the run-up to carbon emission peak by 2030 and net-zero emission by 2050.
- Knowledge learnt and its real life implications:
 - Regional revitalisation by JR East (East Japan Railway Company Ltd. Factsheets, 2022)
 - Society 5.0 (Hayashi, 2020)
 - Can the above ideas/knowledge be applied to Hong Kong for implementing the Northern Metropolis Development Strategy?

3. Data Collection, Analysis & Report

d) Report and Organization (cont'd)

- Limitations of the study:
 - Comparability of financial data (government grants and funding in certain countries may be recognized as “operating revenue”!)
 - Unavailability of breakdown data of revenue and operating income by business segment from some railways companies

Presentation: Research Proposal

Questions & Answers

Thank You!

Presentation: Research Proposal

References

Abell, D.F. (1980). Defining the Business: The Starting Point of Strategic Planning. Prentice Hall.

Amtrak FY2021 Company Profile

<https://www.amtrak.com/content/dam/projects/dotcom/english/public/documents/corporate/nationalfactsheets/Amtrak-Company-Profile-FY2021-030922.pdf>

Amtrak General & Legislative Annual Report & FY 2023 Grant Request

<https://www.amtrak.com/content/dam/projects/dotcom/english/public/documents/corporate/reports/Amtrak-General-Legislative-Annual-Report-FY2023-Grant-Request.pdf>

“Amtrak Connects US” – Amtrak’s 15 year Vision (2021)

<https://www.amtrak.com/content/dam/projects/dotcom/english/public/documents/corporate/reports/Amtrak-2021-Corridor-Vision-060121.pdf>

Amtrak Management's Discussion and Analysis of Financial Condition and Results of Operations and Consolidated Financial Statements with Report of Independent Auditors for Fiscal Year 2021

<https://www.amtrak.com/content/dam/projects/dotcom/english/public/documents/corporate/financial/Amtrak-Management-Discussion-Analysis-Audited-Financial-Statements-FY21.pdf>

BizVibe (2022), The Top Ten Largest Railroad Company in the World in 2022.

<https://blog.bizvibe.com/blog/largest-railroad-companies>

Cervero, R. & Murakami, J. (2009), Rail and Property Development in Hong Kong: Experiences and extensions, Urban Studies, Volume 46, Issue 10, pp. 2019 – 2043. Sage Publications.

https://scholar.google.com.hk/citations?view_op=view_citation&hl=en&user=xywYx5kAAAAJ&citation_for_view=xywYx5kAAAAJ:u-x6o8ySG0sC

The Community of Metros (COMET) benchmarks worldwide urban railway performance

<https://communityofmetros.org/>

Deutsche Bahn AG Investor Update (March 2022). .

https://ir.deutschebahn.com/fileadmin/Bildmaterial/2022/Investor_Update_Mrz_2022/II_InvestorUpdate_March_2022_online.pdf

Presentation: Research Proposal

References (cont'd)

Deutsche Bahn AG (May/June 2022). Returning to Profitable Growth – DB Spring Roadshow 2022.
https://ir.deutschebahn.com/fileadmin/Deutsch/2022/Anhaenge/II_RoadshowSpring2022_final.pdf

East Japan Railway Company Ltd. – corporate data
<https://www.jreast.co.jp/e/data/index.html>

East Japan Railway Company Ltd. – 2022 Factsheets
<https://www.jreast.co.jp/investor/factsheet/pdf/factsheet.pdf>

East Japan Railway Company Ltd. – Investor Relations: Historical Data (1990-2022)
<https://www.jreast.co.jp/e/investor/historicaldata/index.html>

Hayashi, Y (2020). Expectations for Railroads in Achieving a Society of the Future. JR East Technical Review-No.40-2020.
https://www.jreast.co.jp/e/development/tech/pdf_40/tec-40-01-04eng.pdf

Hong Kong MTRC Financial Information for Investors
<https://www.mtr.com.hk/en/corporate/investor/financialinfo.html>

Hong Kong MTR Performance Metrics

Hong Kong MTRC Service Pledge 2022 and 2021 Customer Service Target and Performance
https://www.mtr.com.hk/archive/en/pdf/MTR_Pledge.pdf

Japan Cabinet decision on 17 April 2018 on the Basic Environment Plan
https://www.env.go.jp/policy/kihon_keikaku/plan/plan_5/attach/ref_en-01.pdf

Presentation: Research Proposal

References (cont'd)

Leong, L. (2016), The 'Rail plus Property Model': Hong Kong's successful self-financing formula, McKinsey & Company report, June 2016.
<https://www.mckinsey.com/~media/mckinsey/business%20functions/operations/our%20insights/the%20rail%20plus%20property%20model/the-rail-plus-property-model-hong-kongs-successful-self-financing-formula.pdf?shouldIndex=false>

Network Rail Environmental Sustainability Strategy 2020-2050 and "Our ambition for a low-emission railway": 2020-2050.
<https://www.networkrail.co.uk/wp-content/uploads/2020/09/NR-Environmental-Strategy-FINAL-web.pdf>

Network Rail Limited Annual Report and Accounts 2022
<https://www.networkrail.co.uk/who-we-are/publications-and-resources/regulatory-and-licensing/annual-report-and-accounts/>

O'Toole, R. (2021). Zero-Based Transportation Policy: Recommendations for 2021 Transportation Reauthorization. Cato Institute, Policy Analysis No. 913 (22 Apr 2021)
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3830689

Sigalos, M. (2015). How Hong Kong's subway turns a \$2 billion annual profit. CNN Money, March 30, 2015,
<https://money.cnn.com/2015/03/30/news/hong-kong-mtr-subway-property/>

Top Ten Largest Railroad Companies in the World 2022 (by market cap) published by BizVibe
<https://blog.bizvibe.com/blog/largest-railroad-companies>

The U.K. Government (May 2021), "Great British Railways: the Williams-Shapps Plan for Rail" White Paper
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/994603/gbr-williams-shapps-plan-for-rail.pdf

The U.K. Government (Jan 2022), Department for Transport – Rail Factsheet 2020 & 2021.
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/942425/rail-factsheet-2020.pdf
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1049929/rail-factsheet-2021.pdf

Yu, E. (2022), Introducing 3H holistic management framework, working paper, HKMA, 6 May 2022. .