Network Rail

PASSENGERS AND FREIGHT

Environmental analysis (internal/external), market audit and future strategic recommendations

Bogdan Ciocoiu - Strategic Marketing and Communication - MBA - University of Hertfordshire - Dec/2016
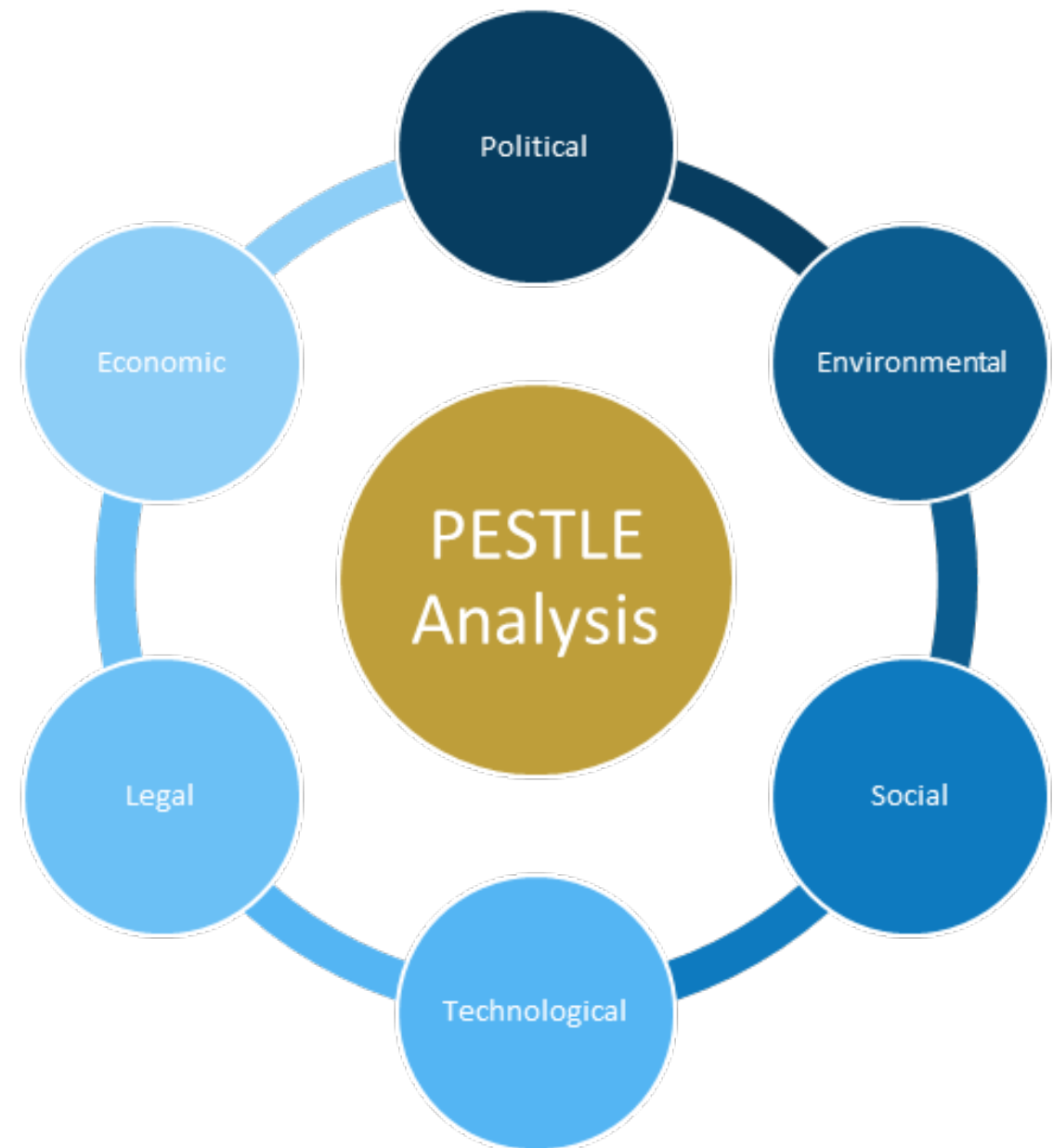
Key facts

- 20,000 miles of track across UK

- 1/Sep/2014 - Public Sector body

- 2013-2019 - £25 billion upgrade

- Revenue covers 68% of operation costs

- Forecasted 95% increase in demand by 2041

- Employed staff 35,500 (National Audit Office, 2015)

- Engaged staff 80,000 (UK Trade and Investment, 2014)

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PESTLE

Network Rail and the macro-environmental analysis

Changefactory.com.au (2016)

Political

- <u>Public sector body</u> as of 1/Sep/2014, now under direct Parliamentary scrutiny - governance framework

- Brexit

  - <u>potential resource crisis</u> to affect both Maintenance and Infrastructure Projects ('IP')

  - <u>decrease in forecasted demand</u> freight and passengers, impacting priorities on IP and future network modernisation

- Governmental initiative to <u>attract travellers to use high-speed trains</u> (Marti-Henneberg, 2014)

Environmental

- Political pressure and NGO/pressure groups lobby to <u>electrify UK rail infrastructure</u>, to decrease carbon dioxide emissions

- Visual impact of civil/rail projects, <u>mitigation against vibration</u>, <u>noise</u>, <u>dust</u>, further more CITB ('Construction Industry Training Board') regulations applied

- <u>Waste management policies</u> applied in depots and construction sites

- <u>Complex assessment of suppliers</u> i.e. wooden sleepers being bought from properly managed forests

Social

- Increased commuting trend to avoid road traffic congestion and increase predictability of arrivals

- Horizontal expansion of urban areas

- Encouragement from related transport groups i.e. TfL night tube services

- UK overall increase in population (Department of Economic and Social Affairs, 2015)

  - overall population: 58mil (2000) to 65mil (2016)

  - density (people/km^2): 78.8% (2000) to 81.7% (2016)

  - urban population: 46mil (2000) to 53mil (2016)

Technological

- 3 billion/year to develop/implement technologies to:

  - <u>detect potential track failures</u> - using laser/ultrasonic equipment

  - <u>improve signalling</u> - to safely increase capacity using the same infrastructure

  - <u>increase safety performance</u> - using automated braking systems via magnets, etc.

- ICT technological development facilitates means of <u>working whilst commuting</u> by train using laptops, iPads, smart phones, etc

Legal

- Consent management, modernising <u>listed buildings</u> (i.e. stations, offices), local councils and heritage assets

- Pre-work <u>assessments against risk</u>, <u>vibration</u>, <u>noise</u>, H&S, etc.

- <u>Legislation vs. social responsibility</u> - non-utilised land to be released for local public administration - 12,000 new homes by 2020 (Rail Technology Magazine, 2016)

- Support for <u>disabled access</u>, <u>lifts and upgraded power supplies</u>, signage, etc.

Economic

- Consumer demand forecasted to <u>increase 100% for passengers</u>, <u>90% for freight</u> by 2041

- Pressure to decrease <u>unit cost for replacing 1 mile of track</u>

  - currently 22% less from cost priced in 2002

  - target is 30%

- Penalties (£14mil) and consumer satisfaction impacted caused by <u>engineering works overrun</u> (Stephen Moore, 2015)

Competition

Network Rail's key competitor

Highways England

	Network Rail	Highways England
Coverage	20,000mls (UK except HS1, HE)	4,300mls (England strategic roads only)
Operating costs	~£3bn	~£1bn
Staff	~35k (80k inc. contractors)	~3,3k
Freight	23bn T km (30 yrs to be doubled)	103bn T km
Passengers	72bn passenger -km	123bn vehicle -km

Porter's five forces

Network Rail Micro-environmental analysis

Threat of New Entrants

Bargaining Power of Suppliers

Rivalry Among Competitors

Bargaining Power of Buyers

Threat Of Substitute Products or Services

Google.com

Suppliers
What makes suppliers more powerful?

- 6,223 suppliers UH wide from 2009 onwards from which 40% SME (Network Rail, 2013)

- Industry heavily regulated, access to training is available (UK Trade and Investment, 2014), as well as licences for delivering training are available

  - Babcock – tailored training for Network Rail

  - TUCA – the future of tunnelling

  - Bridgeway Consulting – railway training for Iarnród Eireann (Irish Rail)

  - The National Skills Academy for Railway Engineering (NSARE)

  - National Training Academy for Traction and Rolling Stock

- Regulated supplier eligibility system - transparent process

Potentail entrants

What factors keep competitors out?

- Barriers to entry:

  - geographical limitation

  - areas with very little (if any) demand left unexploited

  - <u>massive capital required</u> (i.e. transport by air)

  - technological limitation (i.e. drones)

  - legal/regulatory barriers

  - <u>ability to scale</u> - train operators can deploy between 1 and 682 (7.3km) carriages (Railway Gazette, 2001)

Buyers/Customers

What makes buyers more powerful

- <u>Geographical concentration</u> i.e. highly concentrated areas increase demand

- <u>Demographics</u>
  - age, career level
  - personality (number of interchanges, commuting time, quality vs quantity / premium vs low-cost)

- <u>Key locations</u> i.e. schools, business parks

- <u>Key transit points</u> i.e. tube stations, interchange

- <u>Willingly to commit to long term commuting</u> contracts via seasonal passes, etc.

Substitution

What choice do customers have (Highways England)

- Substitution factors:
  - volume of <u>cancelled/delayed services</u>

  - service <u>costs too expensive</u>

  - <u>compromising comfort</u> by interchanging bus services (passenger services) i.e. ability to work whilst commuting - choosing less comfortable commuting means

  - compromising route flexibility

  - <u>compromising on duration of transport</u> - i.e. less stops vs direct services

Designorate.com

SWOT

- Strengths

  - 20,000 miles of track already in place

  - key locations already secured where <u>only commuting by train makes sense</u>

  - not affected by <u>road traffic congestion</u>

- Weaknesses

  - political pressure/consumers <u>demand increase in capacity</u>

  - <u>challenging Civil works limited by short possessions</u> during night/Bank Holidays

  - <u>35,500 employees vs 80,000 engaged</u>

- Opportunities

  - <u>new technology means</u> to identify faults and new safety measures to avoid accidents

  - <u>online technology to provide training opportunities</u> in isolated areas of UK

- Threats

  - <u>TOC often cause delays/cancellations</u> with very little/no intervention from Network Rail/DoT

  - <u>coach companies to take over certain key routes</u> i.e. National Express, Green Line, etc.

Recommendations

Network Rail passengers and freight

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Recommendations

- Training, research and development

  - merge <u>private sector training programmes</u> with <u>research and development performed in colleges</u>, bridge the gap between academia and working class, in terms of rail sector

  - revise the training scheme system, introduce digital solutions to <u>provide access to potential candidates across UK</u>, introduce webinars and <u>effective online assessment tools</u>

- Civil engineering works

  - <u>undertake smaller projects simultaneously</u> at different locations instead of a single large one to enable delivery on multiple programmes of works, expect ROI, mitigate against risk, etc.

  - define an independent standalone legal entity to <u>control delivery of programmes, arbitrate and implement commercial penalties and early warnings</u> for delayed/cancelled works, to avoid shifting

- Politics

  - <u>work with Train Operating Companies and DfT to mitigate against service cancellation</u> caused by TOCs i.e. driver not available

  - <u>provide a system to quantify and refund consumers</u> subjected to commuting delays caused by service delay/cancellation

Thank you!

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