



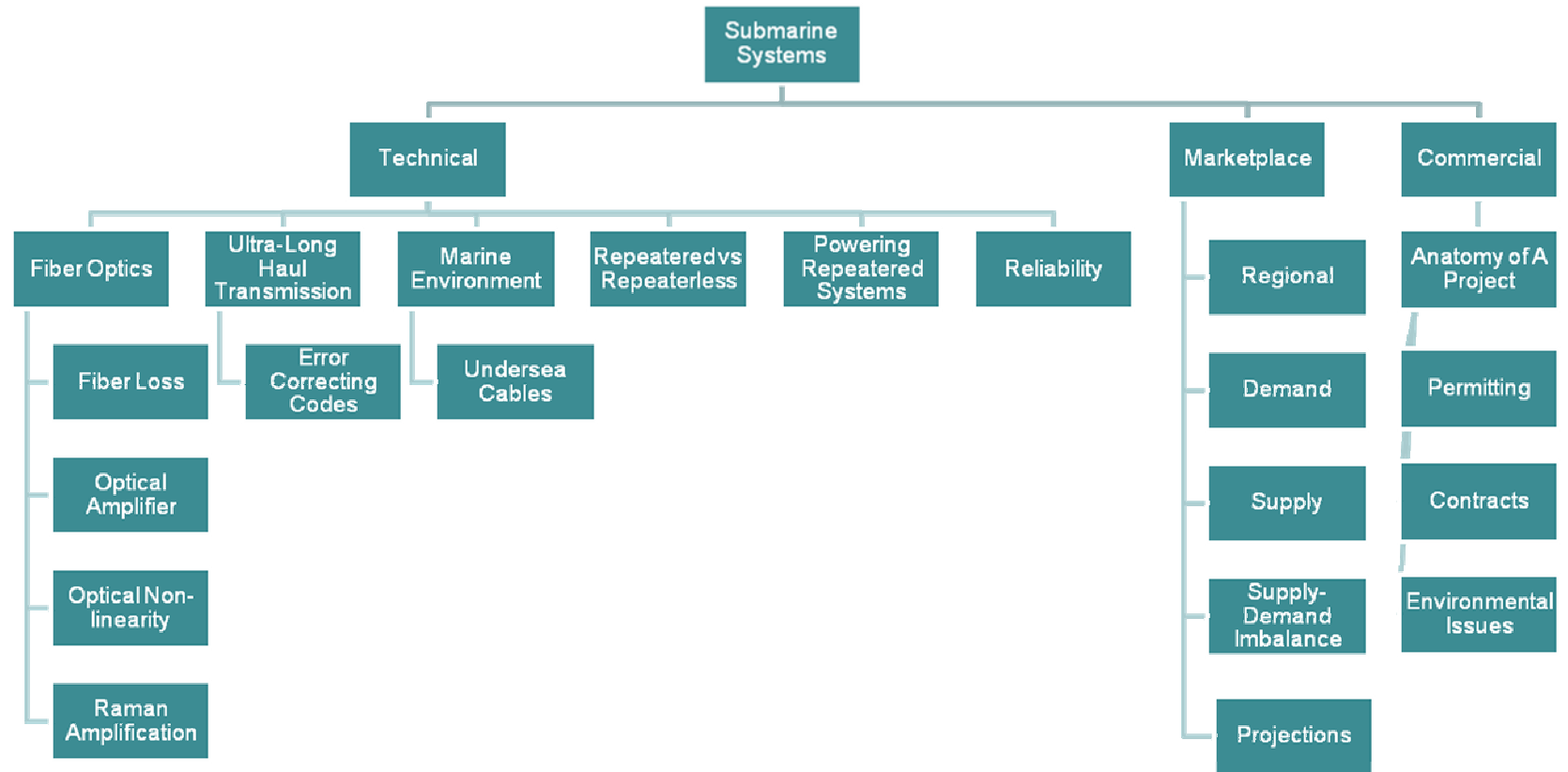
Current Status of the Submarine Fiber Optics Market

A Presentation to NANOG45 • January 27, 2008
Howard Kidorf, Managing Partner, Pioneer Consulting



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Taxonomy of Submarine Systems



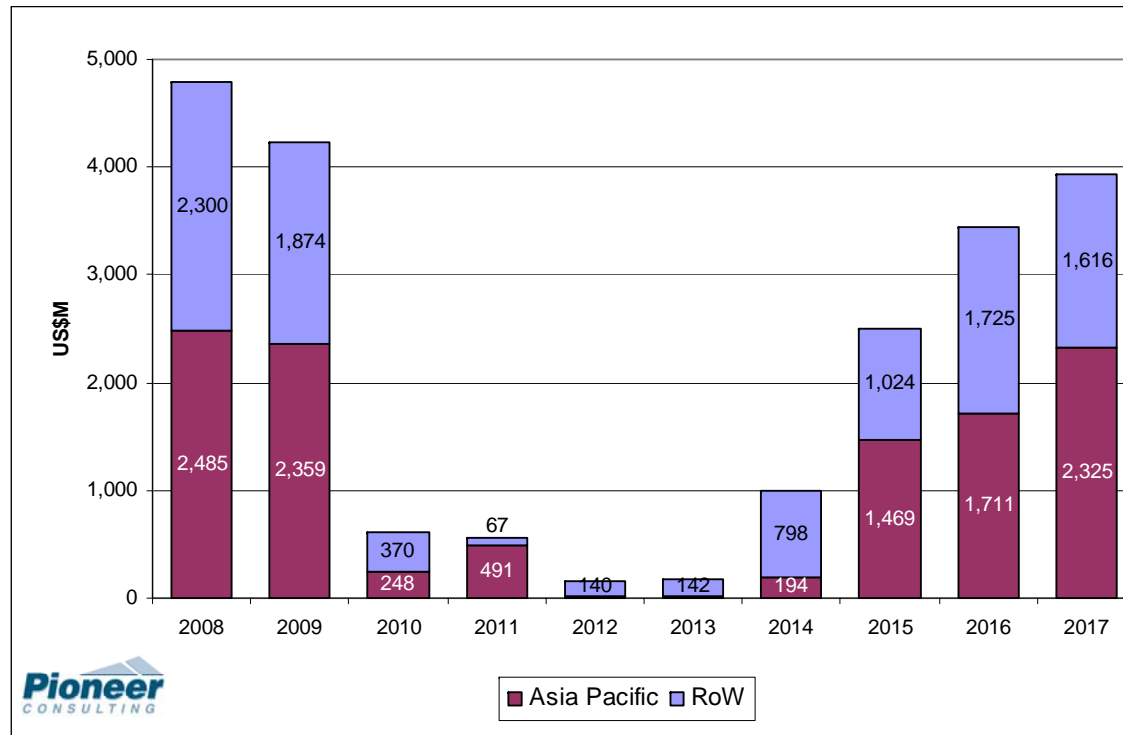
Market Drivers

- Usage growth
- New applications
- Demand vs. Supply
- Emerging markets
- Route diversity
- Cost-effectiveness
- Technology

Impact of Global Financial Crisis

- Market holding its breath
- Customers slowing down projects
- No project cancellations . . . yet
- Full visibility of impact only in 6-12 months
- Capital availability a key determinant
- End of normal industry cycle expected shortly
- Long-term demand outlook still strong

Investment Forecast



- US\$21bn to be invested 2008-17
- Long-run av. investment US\$2.4bn per yr
- AP accounts for >50%
- Hard landing 2011-13

2008-2017 % Invested: Intercontinental 64%, Intra-regional 22%, Domestic 14%

Market Opportunities

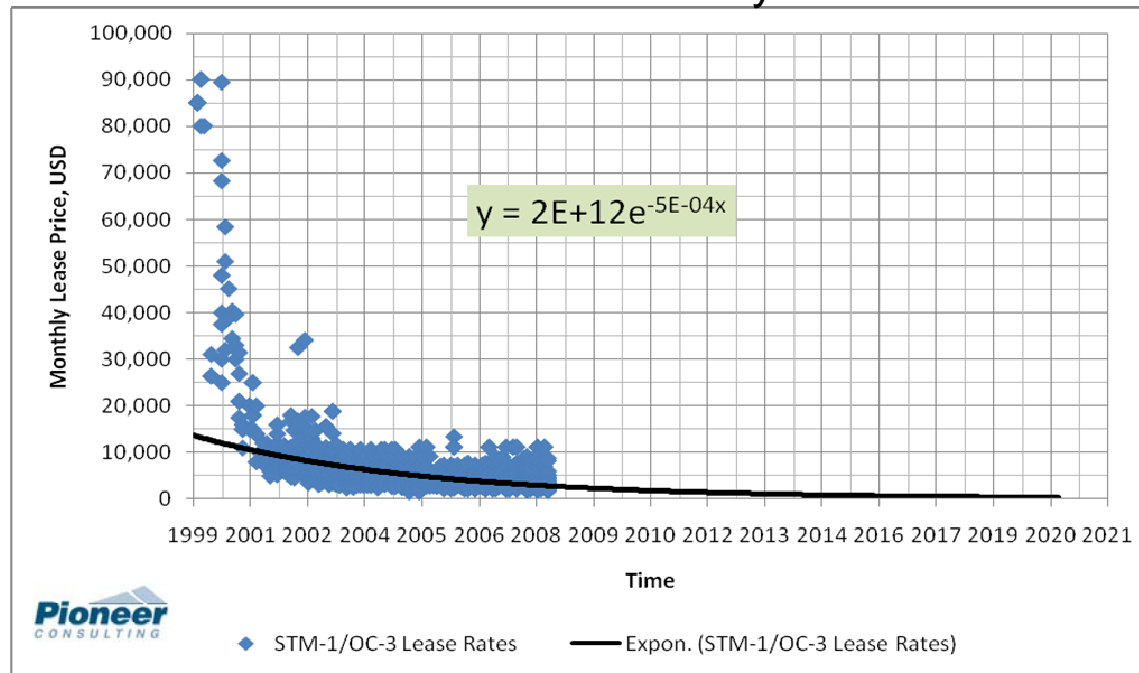
- Asia Pacific - strong demand, low penetration
- Australasia - strong demand but limited population
- Caribbean - regional in-fill
- Indian Ocean - intra-regional connectivity
- Latin America - bubbling up
- Mediterranean Africa - connectivity to Europe
- Oceania - development funds available
- Persian Gulf - oil-rich, underserved especially Iraq
- Sub-Saharan Africa - lots of talk, few results
- Transatlantic - supply tightening, new cable by 2012?

Strategies are Changing

- No place for “Build It And They Will Come”
- Co-opetition
- Regional targeting
- Consortium model resurgent
- Traditional players returning to construction?
- Mesh networking
- Cable re-use
- Manufacturers restricting supply

Bandwidth Pricing

Transatlantic STM-1 History & Forecast



- Hyper-competition led to >50% per year price erosion
- Carriers selling at cost
- Little prospect of tightening supply leading to significant price increase
- Volumes fairly constant but some customers trading up
- **BUT** other markets have different dynamics

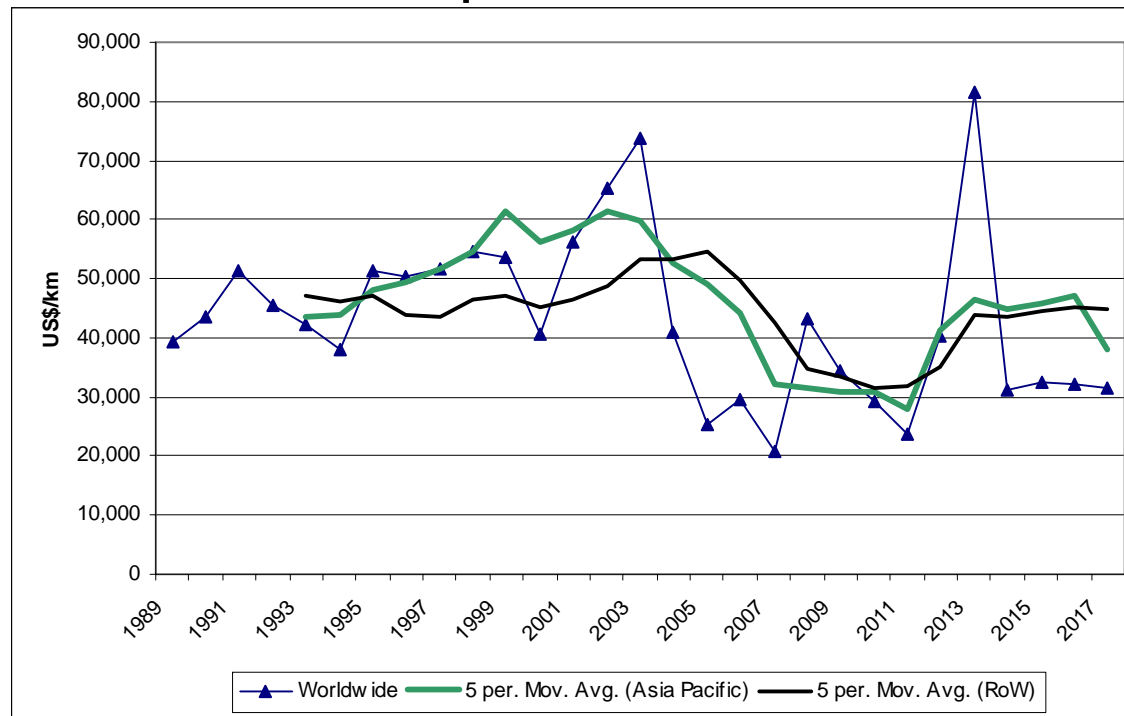
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Equipment Supplier Issues

- Managing supply
- Availability of cable
- Availability of ships
- Cost-effectiveness
- R&D 10G to 40G/100G transition
- New entrants in repeatered market

Equipment Supplier Issues

Cost per kilometer



- Forecast underlying average system cost will be in a range between US\$30-50k per km
- Compared with an historical range of US\$40-60k per km
- Peaks occur in periods of low demand for new systems

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Conclusions

- Submarine fiber optic market buoyant
- Scale of Global Financial Crisis impact not yet known
- Hard landing already forecast for 2011-12
- Market should recover quickly on back of increasing demand
- Cable owners must plan for significant bandwidth price erosion (\$ per bit) in most markets
- Systems supply a mixed bag of consolidation, new entrants, lower average prices, and longer lead times
- Global regulatory environment not getting any easier
- Consortium model strong but barriers not high enough to discourage other models



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- Focused on the submarine fiber optic industry since 1997
- Under new ownership since 2006
- Integrated Consulting Services
- Feasibility (market studies, DTS, due diligence)
- System Engineering (design, RFQ formulation & adjudication, contractual negotiations)
- Project Management (tracking design, engineering, implementation, and commercial aspects of project)



Recent Track Record

- 2008-10** Main One West Africa-Europe Cable Project Implementation
- 2008-9** Major Australasia Bank: Due Diligence & Project Oversight
- 2008** All Africa Submarine Cable Market Study
Latin America Market Report
Transatlantic Market Report
- 2007** Europe Atlantic Cable Feasibility Study
Caribbean Market Report
Worldwide Submarine Cable Market Study
- 2006** West Africa Festoon System Traffic Study



Key Consulting Staff

Howard Kidorf



- Electrical Engineer (MEng)
- Consultant since 2002
- Tyco Technical Staff (Distinguished Member) & Dir. Services Engineering 1995-2002
- AT&T Systems Engineer 1984-1995

Julian Rawle



- MBA Cranfield
- Consultant since 2001
- Dir. Int'l Mktng, GMSL 1999-2001
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- Chartered Engineer (BSc Mech Eng)
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- Toledo Tech Consulting 2002-4
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