Risk Management & Business Strategies in the Telecommunications Industry

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Table of Contents

Risk Management and value

- Risk can be defined as the probability that an uncertain outcome will occur.
- It's a measure of uncertainty.
- The adverse effects of risk count for individuals and business.
- Risk is ubiquitous but not necessarily bad.
- The strategies for managing risk may have a positive impact on the firm's competitive position and its value.

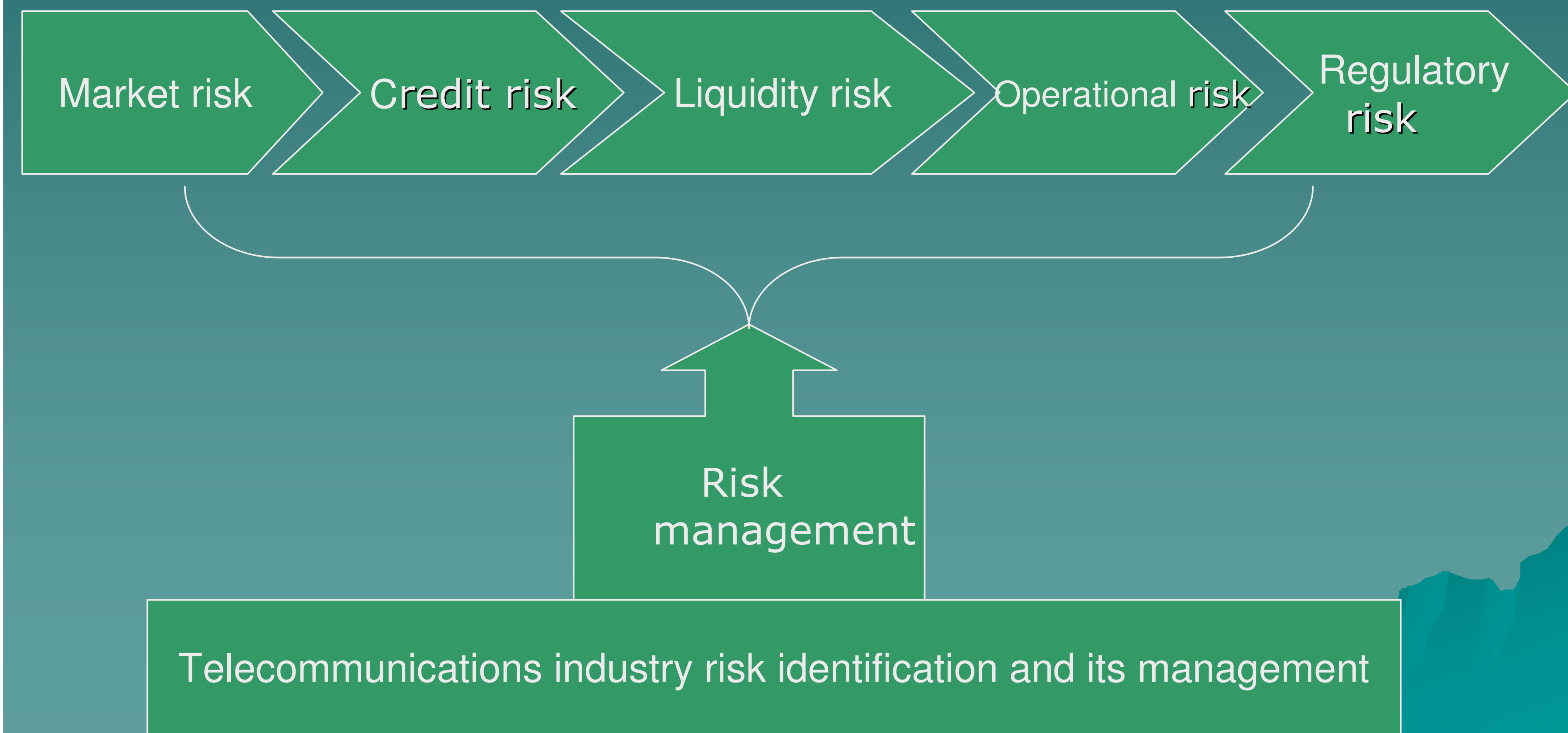
Risk Management and cost

- Risk management strategies consist in applying techniques that reduce (but rarely eliminate completely) the risk.
- Risk management strategies are costly, and one should weigh the benefits and costs for each risk strategy before using it.

Types of Risk

- Risk is multi-faceted. It arises
  - from fluctuations in the interest rate, exchange rate and other macroeconomic variables- (market risk)
  - from defaults on standing-for-settlement transactions - (credit risk)
  - from fluctuations in cash inflows that fall short of cash outflows – (liquidity risk) - bankruptcy of Worldcom & Global Crossing, for instance)

Summary of types of Risk and Risk Management



Types of Risk

- For purposes of developing strategies, it is convenient to divide risk into
  - Market risk and
  - Financial risk
- Market risk arises from fluctuations in interest rates or exchange rates or from changes in prices of raw materials or intermediaries
- It's further divided into
  - Economic or operational
  - Accounting or Translation risk and
  - Transaction risk
- Financial risk arises from time lags of financial transactions - differences in the timing of transaction and of the settlement date
- Every company faces these risks be local, national or multinational.

Risk identification and Risk Comparisons - Transaction, Economic & Operating Risk

Date of change in the exchange rate

Accounting risk exposure

Changes in equity in Consolidated Financial Statements due to changes in the exchange rate

Operating risk exposure

Changes in expected future cash flows due to unexpected changes in the exchange rate

Transaction risk exposure

Impact of settling outstanding obligations entered into before change in the exchange rate but settled after change in exchange rates

Time

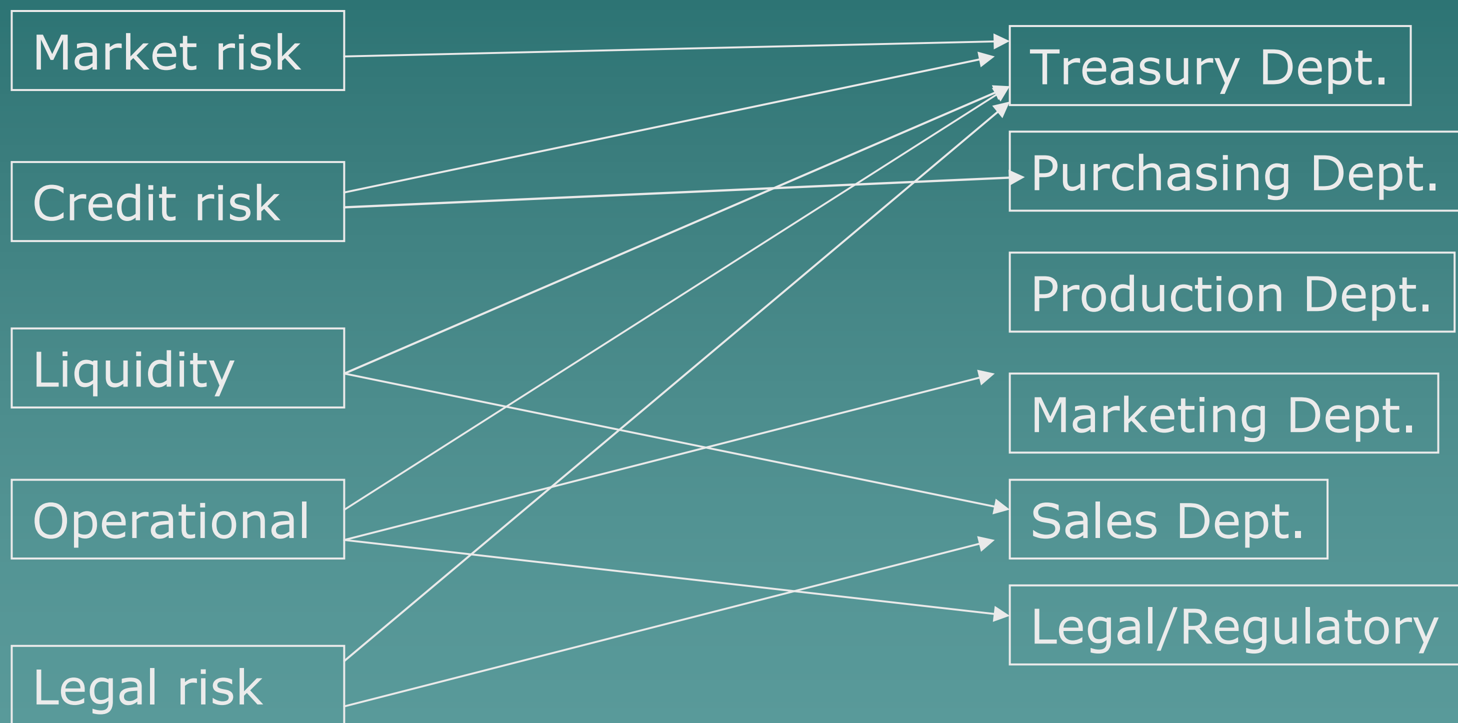
Risk identification and risk tolerance

- Risk identification is the process by which a telecommunications firm recognizes and detects the various risks to which it is exposed
- The identification process consists in reviewing, analyzing, discussing and determining the risk profiles of various administrative units in the company.
- Once risks are identified, senior managers and directors must agree on the levels of risk that can be tolerated by the operation of the firm's primary business.

A Risk map or risk ID

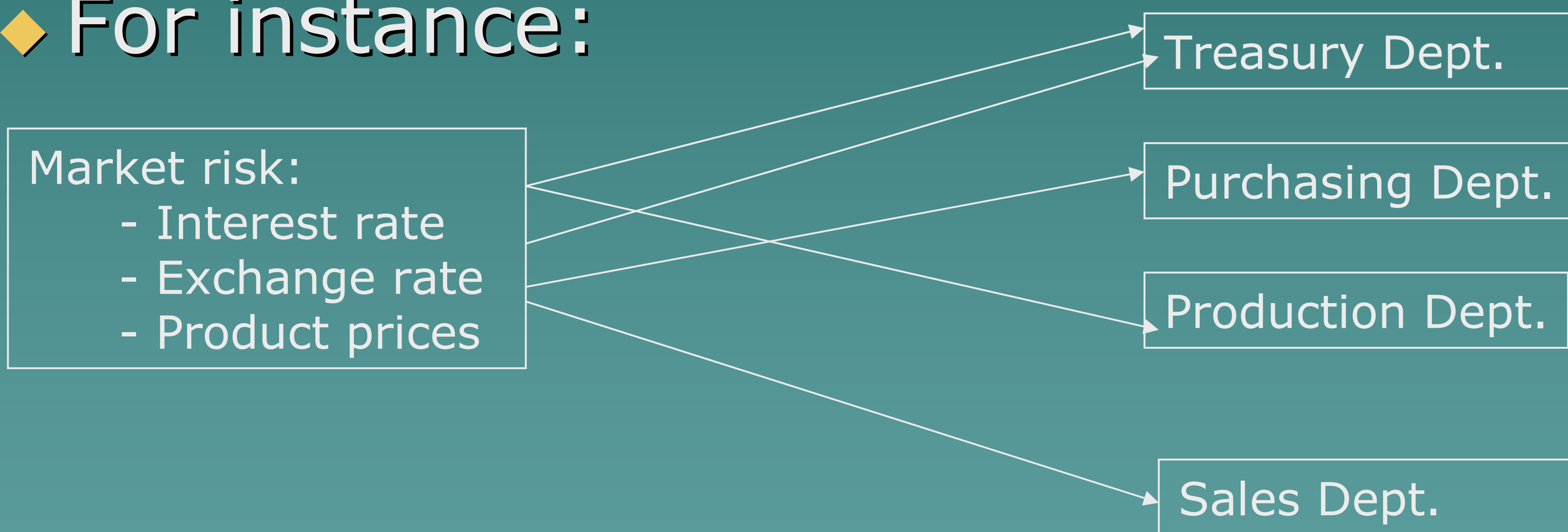
- The risk management process includes
  - an exhaustive and systematic evaluation of all risks and
  - a periodic re-evaluation of the risks to which the company is exposed
- The risk identification process or risk ID is the association of specific risks with specific business units (not individual assets and liabilities).

A Risk map or risk ID (1)



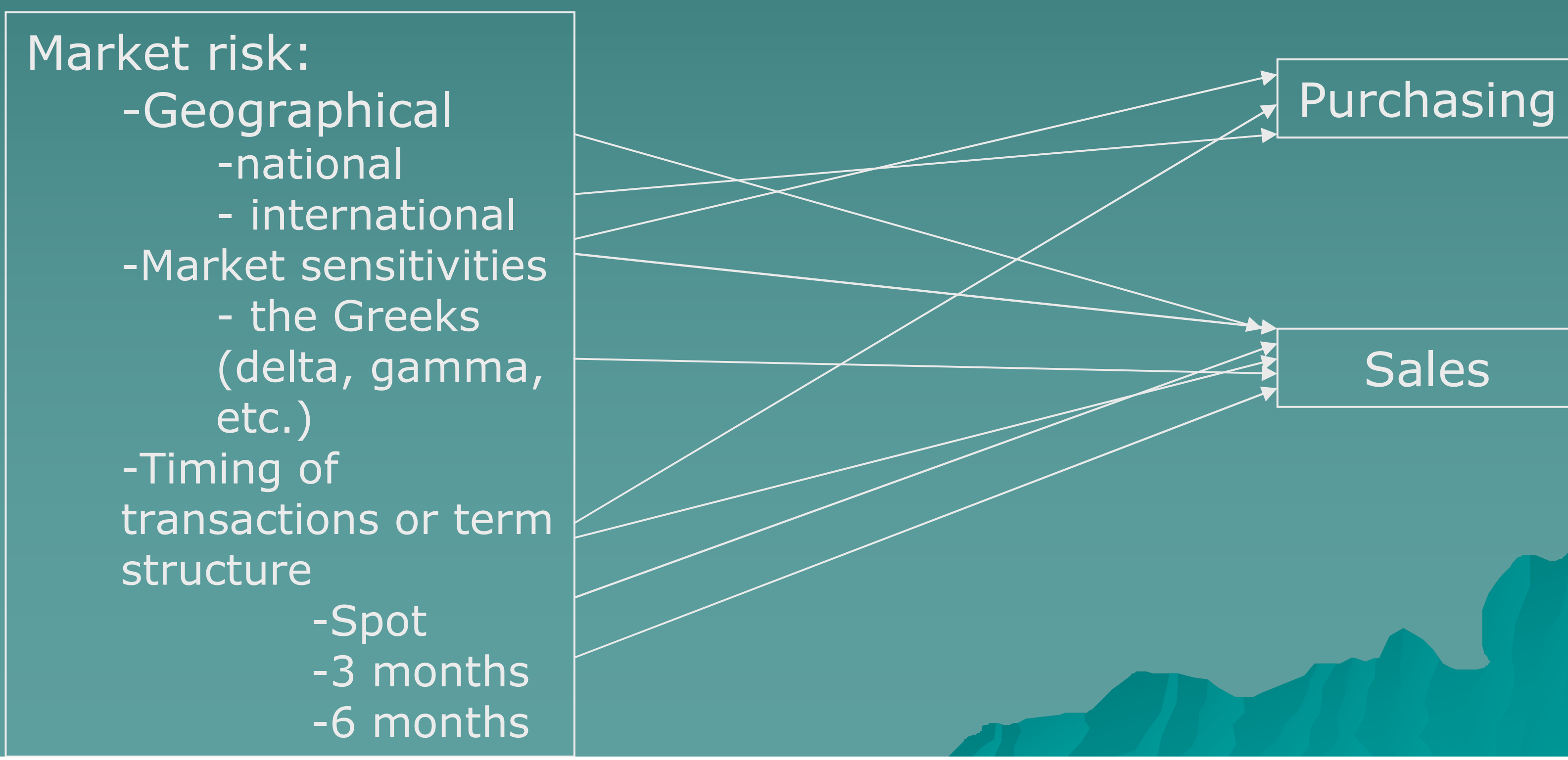
Refinement of identifiable risks (2)

- Risk categories once identified should be refined to specific risk sources.
- For instance:



Further refinement of identifiable risks (3)

- Once the source of specific risks are identified, an even further refined is necessary. For instance:



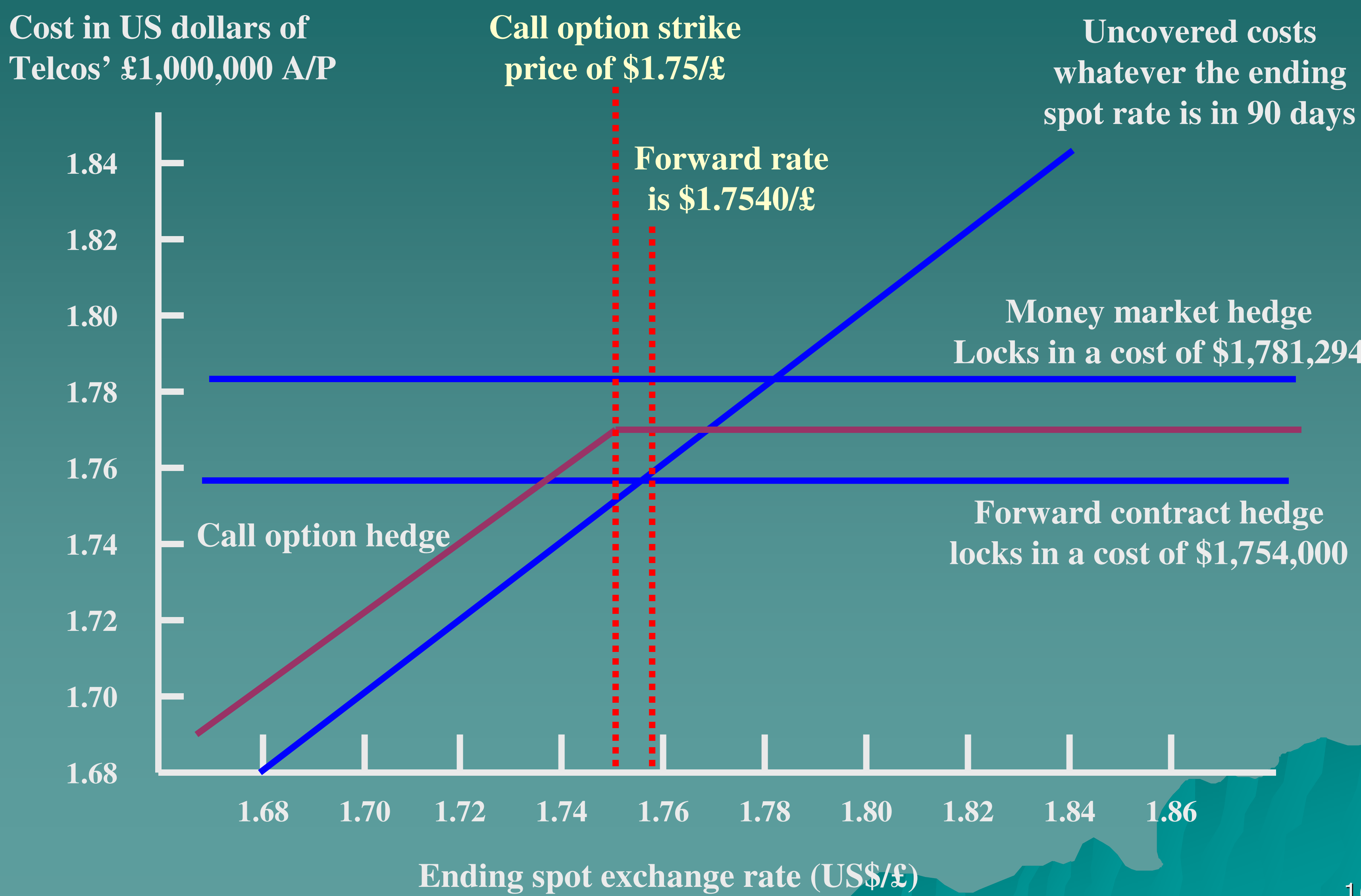
Managing financial risk: types of hedging

- Two types of hedging:
  - – Natural hedge – an off-setting operating cash flow
  - – Financial hedge - an off-setting debt obligation (such as loan) or some type of financial derivative such as an interest rate swap.

Managing financial risk: alternative hedging strategies

- A telecommunications firm that buys its technology and software from abroad has to pay these transactions in foreign currency
- The graph illustrates a telcos' firm with an account payable in 90 days 0f 1 million pounds
- The alternative hedging strategies are:
  - to remain unhedged
  - to use a forward market hedge
  - to use a money market hedge
  - to use options

Hypothetical example of managing financial risk: alternative hedging strategies



Types of hedging, strategy choice and outcome

- The strategy the telecommunications firms choose to hedge risk depends on the company's
  - Risk tolerance which is a combination of the management's philosophy towards risk and the specific goals of the treasury
- If the treasury operates as a cost or service center for the firm, its hedging policy may be a full hedge using forward contracts regardless of the value of other hedging activities
- If the treasury operates as a profit center, it might tolerate taking more risks.

Risk management in practice

- There is no best approach to manage risk
- Corporate risk management practices are quite different across countries but risk managers tend to be on the conservative side
- Many firms establish rigid risk management policies that mandate proportional hedging (50%, 60% or even 70% of existing exposure.
- The rest of exposure is selectively hedged depending on the firm's risk tolerance, view of the level of risk and confidence level.

Risk management in the telecommunications industry

The case of
TELUS CANADA

Risk management in the telecommunications industry

- Telecommunication firms use various processes to assess and control risks and uncertainties
- TELUS utilizes a three-level enterprise risk and control assessment process
- This process includes the expertise and insight of team members from all areas of the business.

Risk management in the telecommunications industry

- Level one is the annual risk and control assessment. It includes
  - one-on-one interviews with key senior managers
  - an extensive risk and control assessment survey based on the COSO (the Committee of Sponsoring Organizations of the Treadway Commission) enterprise risk management and internal control frameworks
  - a review of issues from recent internal and external audits
  - the prioritization of key risks and the engagement of executive owners charged with risk mitigation
- Results of the annual risk and control assessment drive the development of TELUS' internal audit program
  - are presented to senior management and the Audit Committee of the Board of Directors and
  - are used as an input into the Company's strategic planning.

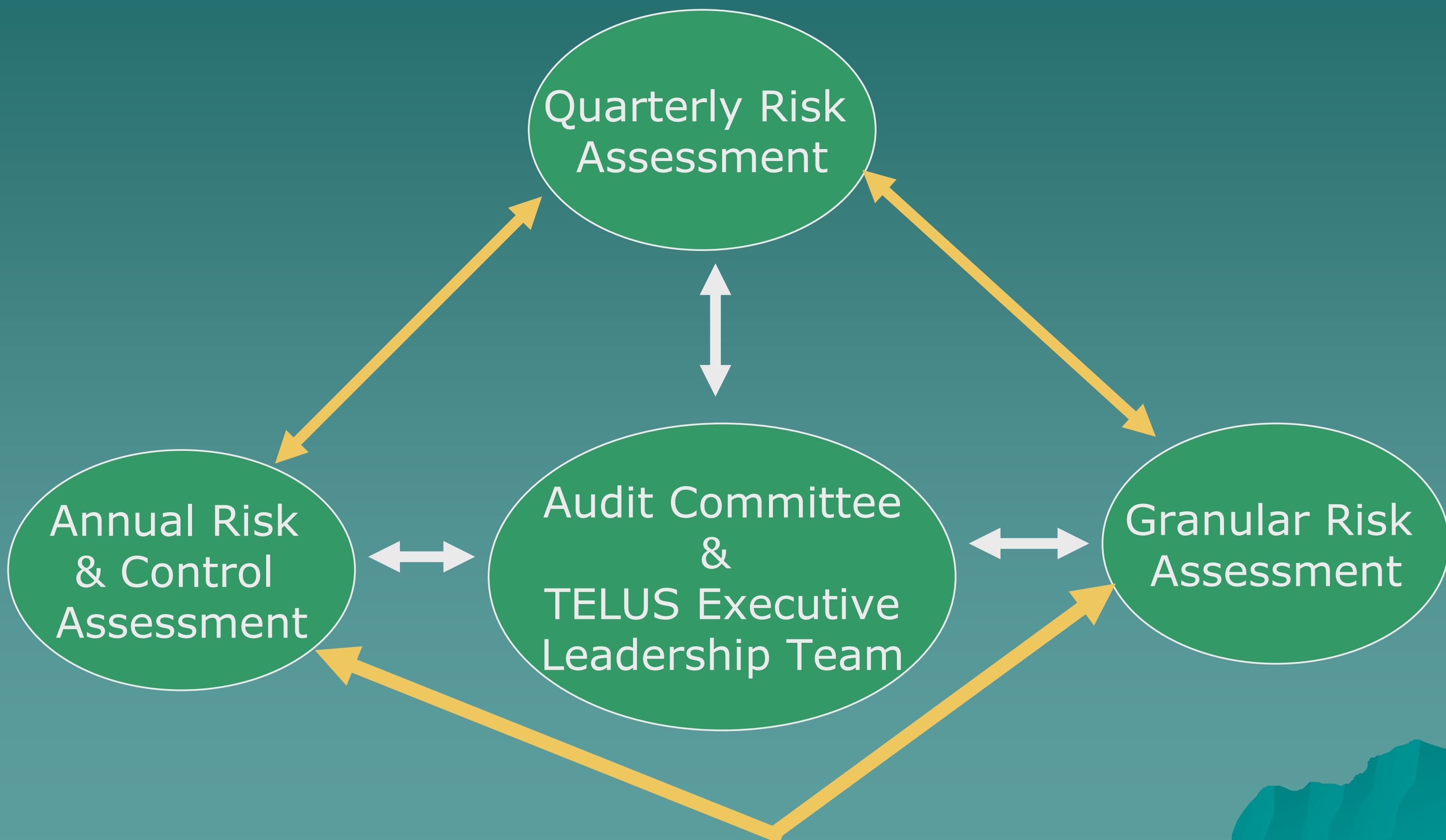
Risk management in the telecommunications industry

- In level two, TELUS conducts a quarterly risk assessment review with key internal stakeholders
  - to capture dynamically changing business risks
  - monitor the mitigation of key risks and
  - provide ongoing assurance to the Audit Committee.

Risk management in the telecommunications industry

- In level three, TELUS conducts granular risk assessments for specific audit engagements and various risk management initiatives (e.g. environmental management system, safety audits, business continuity planning assessments, physical property risk evaluations, network and IT vulnerability assessments, proactive fraud and ethics risk assessments).
- The results of the annual, quarterly and more detailed engagement level risk assessments are evaluated, prioritized and updated throughout the year.

TELUS' risk and control assessment process



Source: TELUS Annual Report, 2006

Business risk

TELUS definition of business risk

- At TELUS, business risk is defined as
  - the degree of exposure associated with the achievement of key strategic, financial, organizational and process objectives in relation to the effectiveness and efficiency of operations, the reliability of financial reporting, compliance with laws and regulations, and the safeguarding of assets within an ethical organizational culture.
- The following sections summarize the principal risks and uncertainties that could affect TELUS' future business results going forward.

Principal risks that could affect TELUS' future business results

- Aggressive competition may adversely affect market shares, volumes and pricing in certain TELUS market segments such as
  - Wireline voice and data
  - Wireline Internet access
  - Wireless
  - Fixed wireless

Principal risks that could affect TELUS’ future business results

- Technology
  - Evolving wired broadband access technology standards may outpace projected access infrastructure investment lifetimes
  - IP-based telephony as a replacement for legacy analog telephony is immature and cost savings are uncertain
  - The convergence in a common IP-based application environment for telephony, Internet and video is complex
  - Support systems will increasingly be critical to operational efficiency
  - The CDMA and iDEN technologies supporting TELUS’ digital cellular/wireless services may become inferior
  - Emerging wireless technologies represent both an opportunity and a competitive threat

Principal risks that could affect TELUS' future business results

- Regulatory
  - Regulatory developments could have an adverse impact on TELUS' operating procedures, costs and revenues
  - Price cap regulation
  - Quality of service penalties
  - Pricing safeguards
  - TELUS' broadcasting distribution undertakings
  - Voice over Internet protocol
  - Radio-communication licences regulated by Industry Canada
  - Implementation of wireless number portability (WNP) – Telecom Decision CRTC 2005-72
  - Foreign ownership restrictions

Principal risks that could affect TELUS' future business results

- Human resources
  - The outcome of outstanding collective bargaining at TELUS Québec may result in increased costs, reduced productivity or work disruptions
  - Reliance on key personnel

Principal risks that could affect TELUS' future business results

- Business integration and internal reorganizations
  - integration of the wireline and wireless segments of the business – formerly the TELUS Communications and TELUS Mobility segments – into a single operating structure

Principal risks that could affect TELUS' future business results

- Process risk
  - TELUS systems and processes could negatively impact financial results and customer service – Billing/revenue assurance
  - Cost and availability of services

Principal risks that could affect TELUS' future business results

- Financing and debt requirements
  - TELUS' business plans and growth could be negatively affected if existing financing is not sufficient to cover funding requirements

Principal risks that could affect TELUS' future business results

- Tax matters
  - Income tax amounts, including tax expense, may be materially different than expected

Principal risks that could affect TELUS' future business results

- **Health, safety and environment**
  - **Team member health, wellness and safety**
  - **Radio frequency emission concerns**
  - **Concerns about environmental issues, particularly related to contaminated property and the associated risk to human health or wildlife**

Principal risks that could affect TELUS' future business results

- **Litigation and legal matters**
  - **Investigations, claims and lawsuits**
  - **TELUS Corporation Pension Plan**
  - **Legal and regulatory compliance**

Principal risks that could affect TELUS' future business results

- **Manmade and natural threats**
  - **Concerns about natural disasters and intentional threats to TELUS' infrastructure and operations**
  - **Security**
    - **Electronic attack**
    - **Vandalism**

Principal risks that could affect TELUS' future business results

- **Economic growth and fluctuations**
  - **Significant economic downturns or recessions may adversely impact TELUS**
  - **Pension funding risks**

Financial risk and its management

in the telecommunications industry

Financial risk and its management

- TELUS’ financial instruments consist of
  - cash and temporary investments
  - accounts receivable
  - investments accounted for using the cost method
  - accounts payable
  - restructuring and workforce reduction accounts payable
  - dividends payable
  - short-term obligations
  - long-term debt
  - interest rate swap agreements
  - restricted stock unit compensation cost hedges, and
  - foreign exchange hedges

Financial risk and its management

- TELUS uses various financial instruments
  - to reduce or eliminate exposure to interest rate and foreign currency risks and
  - to reduce or eliminate exposure to increases in the compensation cost arising from specified grants of restricted stock units
- These instruments are accounted for on the same basis as the underlying exposure being hedged.

Financial risk and its management

- Use of these instruments is subject to a policy, which requires that
  - no derivative transaction be effected for the purpose of establishing a speculative or a levered position, and
  - sets criteria for the credit worthiness of the transaction counterparties.

Financial risk and its management

- *Price risk – interest rate*: TELUS is exposed to interest rate risk arising from fluctuations in interest rates on its temporary investments, short-term obligations and long-term debt.
- *Price risk – currency*: TELUS is exposed to currency risks arising from fluctuations in foreign exchange rates on its U.S. dollar denominated long-term debt.
- Currency hedging relationships have been established for the related semi-annual interest payments and principal payments at maturity.

Financial risk and its management

- TELUS' foreign exchange risk management also includes the use of
  - foreign currency forward contracts to fix the exchange rates on short-term foreign currency transactions and commitments.
- Hedge accounting is applied to these short-term foreign currency forward contracts on an exception basis only.

Financial risk and its management

- As at December 31, 2005, TELUS had entered into foreign currency forward contracts that have the effect of fixing the exchange rates on U.S. $47.0 million of fiscal 2006 purchase commitments;
- hedge accounting has been applied to these foreign currency forward contracts, all of which relate to the wireless segment.

Financial risk and its management

- *Credit risk:* The Company is exposed to credit risk with respect to its short-term deposits, accounts receivable, interest rate swap agreements and foreign exchange hedges.
- Credit risk associated with short-term deposits is minimized substantially by ensuring that these financial assets are placed with governments, well-capitalized financial institutions and other credit-worthy counterparties.
- An ongoing review is performed to evaluate changes in the status of counterparties.

Financial risk and its management

- Credit risk associated with accounts receivable is minimized by TELUS' large customer base, which covers all consumer and business sectors in Canada.
- TELUS follows a program of credit evaluations of customers and limits the amount of credit extended when deemed necessary.
- TELUS maintains provisions for potential credit losses, and any such losses to date have been within management's expectations.

Financial risk and its management

- Counterparties to the Company's interest rate swap agreements and foreign exchange hedges are major financial institutions that have all been accorded investment grade ratings by a primary rating agency.
- The dollar amount of credit exposure under contracts with any one financial institution is limited and counterparties' credit ratings are monitored.
- TELUS does not give or receive collateral on swap agreements and hedges due to its credit rating and those of its counterparties.
- While TELUS is exposed to credit losses due to the nonperformance of its counterparties, TELUS considers the risk of this remote;
- If all counterparties were not to perform, the pre-tax effect would be limited to the value of any deferred hedging asset.

Financial risk and its management

- The fair values of TELUS' derivative financial instruments used to manage exposure to interest rate and currency risks are estimated similarly.
- TELUS uses derivative financial instruments periodically in the management of interest rate and foreign currency exposures associated with the company's long–term debt or specific firm commitments.

Swaption

- Effective March 2, 2006, an outstanding interest rate swaption related to the call option on our series AD first mortgage bonds was exercised by the counterparty.
- As a result, TELUS was placed into an interest rate swap agreement, whereby it pays a fixed interest rate of 10.45 per cent and receive the three-month Bankers' Acceptance floating rate on a notional principal amount of $50.0 million.

Risk management in the telecommunications industry

- A number of telcos use risk management techniques.
- The most widely used instruments are:
  - Interest rate swaps
  - Currency swaps
  - Swaptions
  - Forward contracts
  - Money markets

- Example of companies using risk management techniques are:
  - Telus
  - Bell Aliant
  - Bell Canada
  - Shaw Communications
  - France Telecom
  - Italia Telecom
  - OTE
  - Compania de Telecomunicaciones de Chile S.A. (Telefonica CTC Chile)
  - Argentina Telecom, etc.

CONCLUSIONS

- Market and financial risks are becoming increasingly important to the telcos industry.
- ERM is used to identify risks and develop strategies to manage them.
- The telecommunications industry is rather conservative and uses mostly natural hedge, swaps and forwards and to a lesser extent options.
- Risk tolerance and the goals set by the telcos' treasury determine the mix of strategies to be used to mitigate risk.