

Scenarios in Economics

The Development and Use of Scenarios in Economics

Generic Notes prepared by:

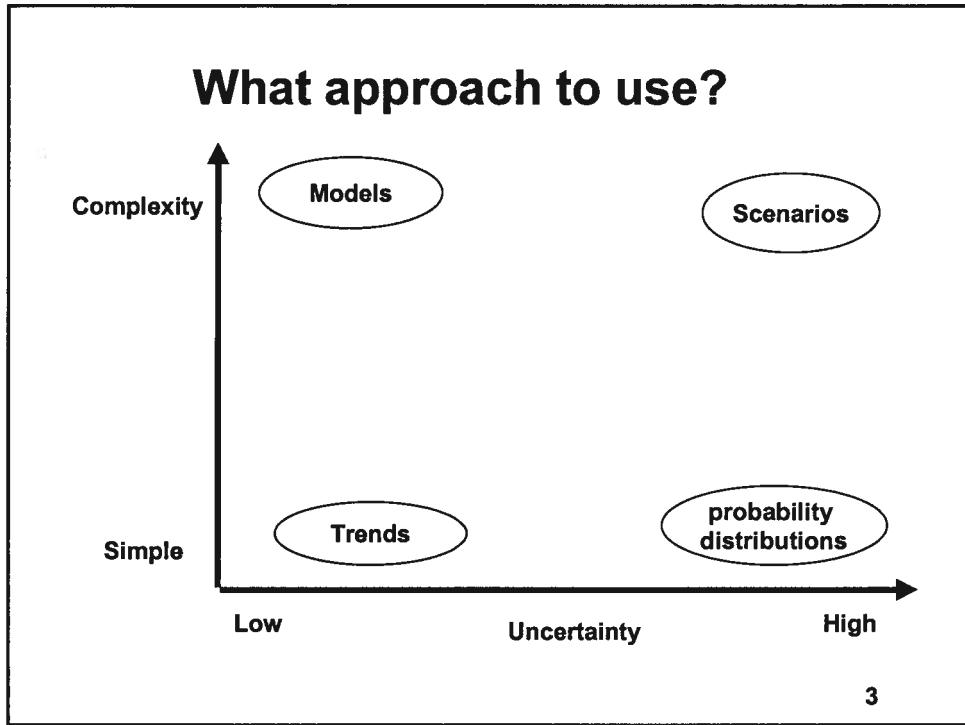
Mike McCracken
Informetrica Limited

June 1998

Forecasting

- What is It?
- Keys to success
- Lessons learned
- Using scenarios

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What is a scenario?

- A perception device
- Not a forecast with probability distributions
- A set of reasonably plausible, but structurally different futures
- Developed through causal, not probabilistic thinking
- Different scenarios are treated as equally likely and should be given equal weight in decision-making

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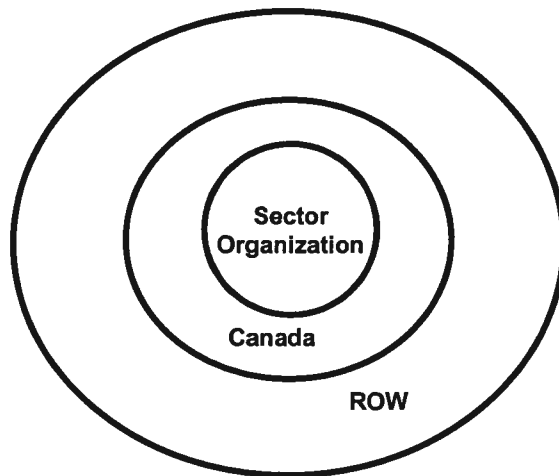
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Writing Scenarios

- What are the Issues?
- Who are the Stakeholders?
- What Matters?
- What are the Drivers?
- Early Trends?
- Learning Scenarios
- Decision Scenarios
- What still needs to be identified?

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From Where?



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Major Issues

- **The unemployment rate seems to be stuck at high levels**
- **Real per capita incomes are stagnant or declining**
- **Income distribution appears to be worsening**
- **Certain groups are falling further behind**
- **Fiscal limitations seem to prevent us from doing anything about unemployment and other concerns**
- **Instability of the current account balance**
- **Concern about international competitiveness**

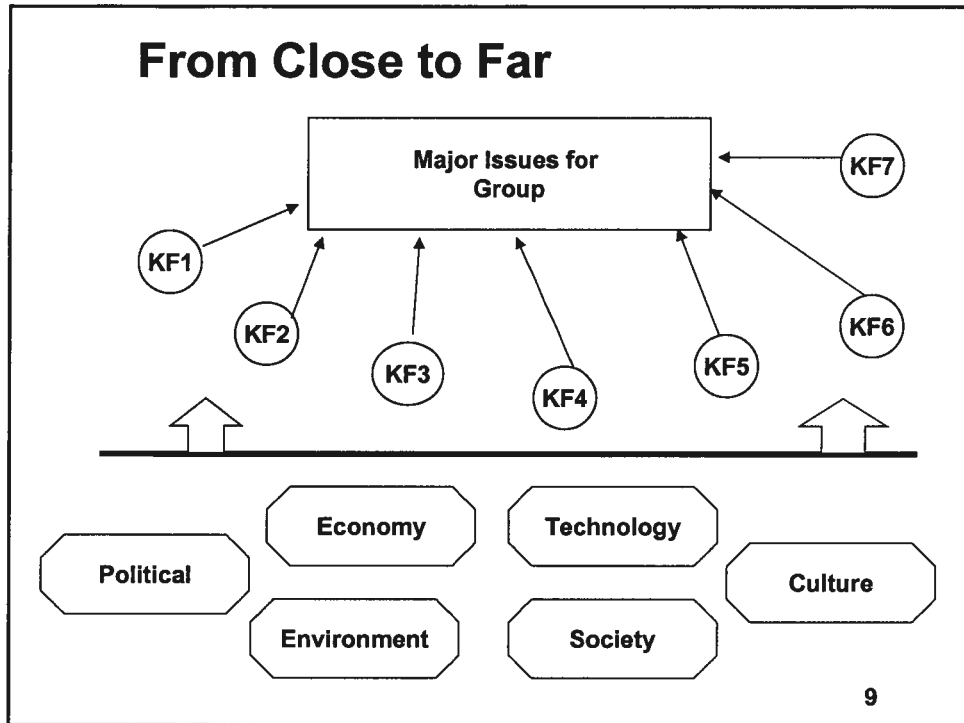
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Key Factors

- **Labour force growth**
 - Source population
 - Participation rates
- **Employment growth**
- **GDP Growth**
- **Interest rates**
- **Primary Fiscal Balance**
- **Tax and benefit structure**
- **Relative costs of production**
- **Exchange Rates**

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Driving Forces

- Society
- Culture
- Economy
- Politics
- Environment
- Technology

Distinction between “outside” and “inside” communities

Predetermined versus uncertainties
(Hopes and fears for the future)

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Society

- Immigration
- Aging population, declining birth rates
- Breakdown of transitions (school to work to retirement)
- Intergenerational & gender concerns
- Labour force participation rates
- Reorganization of work
- Learning society - education & training
- Social programs
- Balance between choices and bonds

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Culture

- “Global teenager”
- Global culture
- Openness to indigenous culture/teachings
- Natural healing/goods
- Maintaining Canadian media
- Absorbing international media
- The Civil Society

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Economy

- Interest rates
- Fiscal policy of governments
- Competition policy
- Demand for high skills
- Resource developments
- Rest-of-world growth
- Access to international markets
- Shift of industrial structure towards information & services
- Polarization of incomes and work
- Emphasis on quality products

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Politics

- Decentralization & off-loading
- Devolution to local level
- Business & consumer confidence
 - Euphoria or depression
- Constitutional reform
- Unity issue
- Regulatory reform
- Incomes policies
- Public priority to aboriginal issues

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Environment

- **Actions to reduce:**
 - Greenhouse gas emissions
 - Other air emissions (SOx, NOx, ozone)
 - Water pollution
 - Solid wastes
- **Preservation of wilderness**
- **Ecology movement**
- **Depletion of natural resources**
- **Alternative energy sources**
- **Limits to growth**

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Technology

- **Productivity growth**
- **Information technologies**
- **Globalization of information**
- **Increased access to learning**
- **Intellectual property regimes**
- **Basic Research**
- **Biotechnology**

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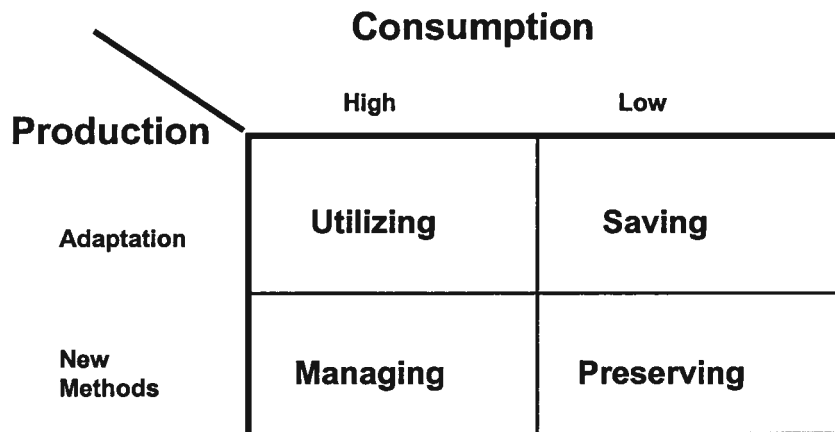
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Examples of Scenario Exercises

- Naming scenarios
- The Issues Differ
- The Significant Driving Forces May Vary
- Time Frames are appropriate to the Issue

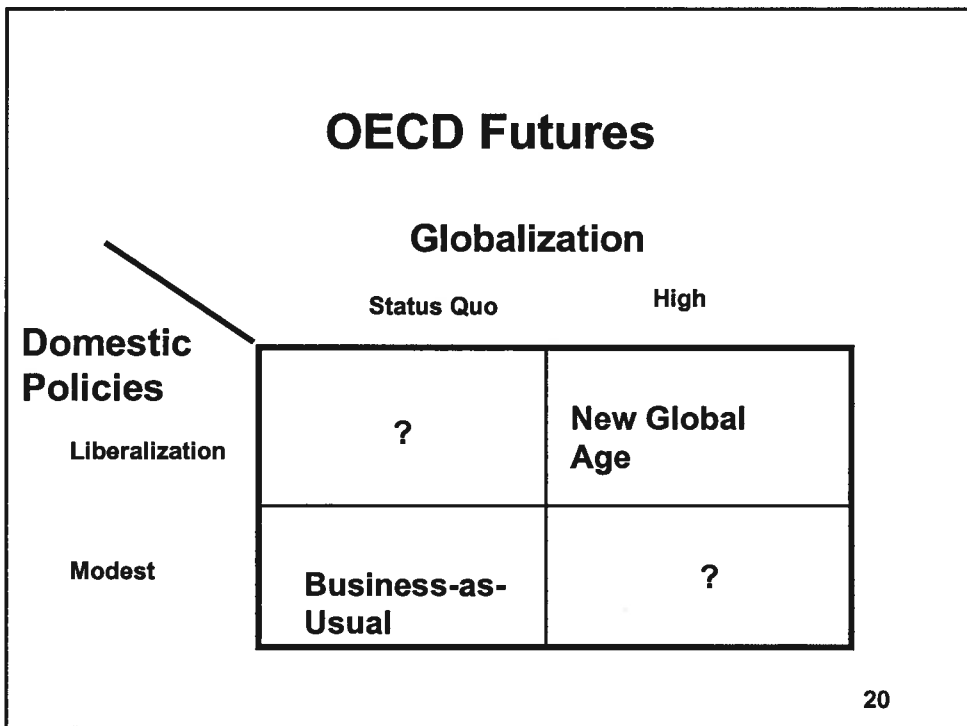
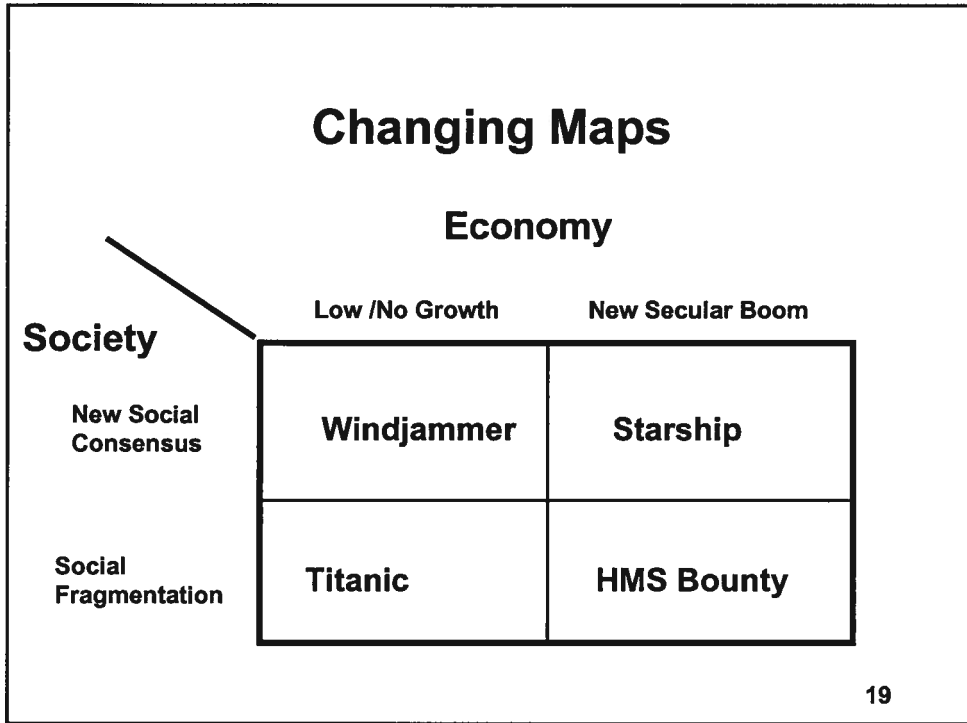
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Sustainable Development

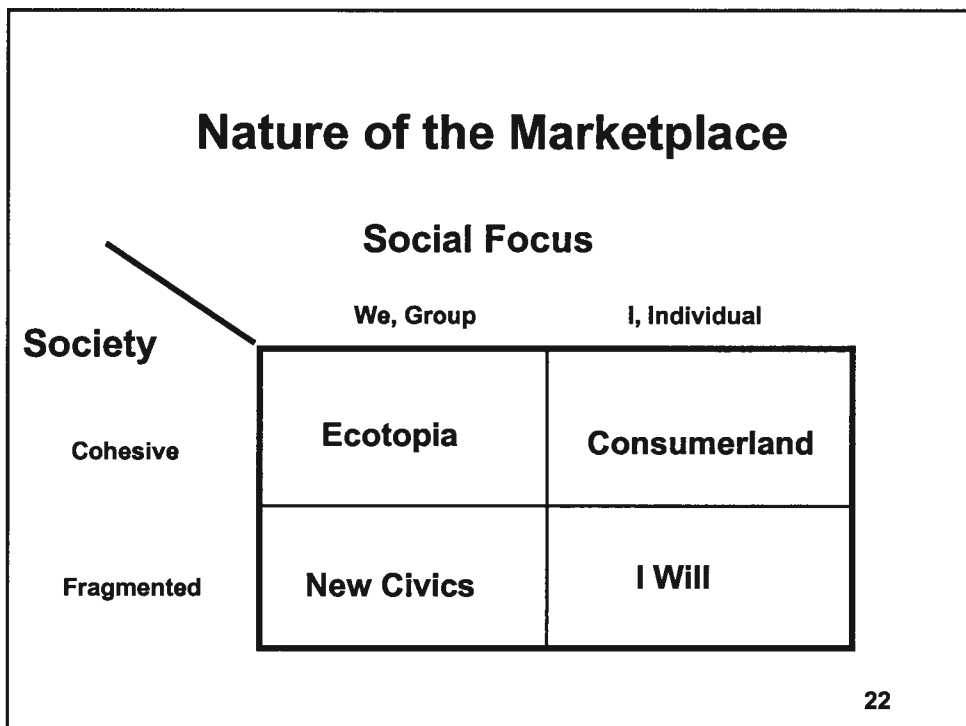
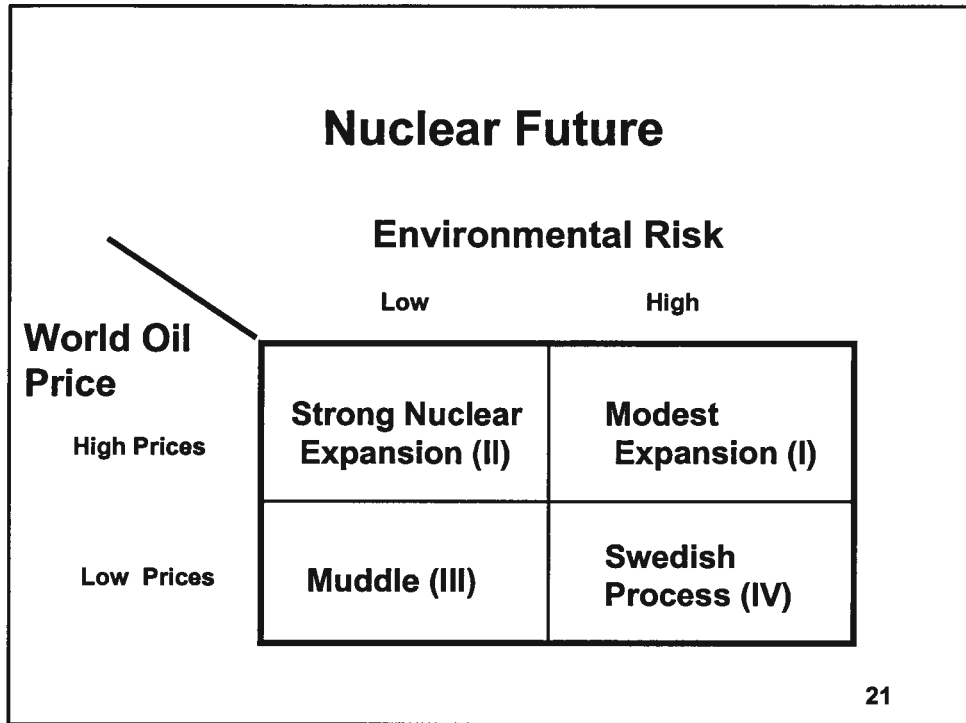


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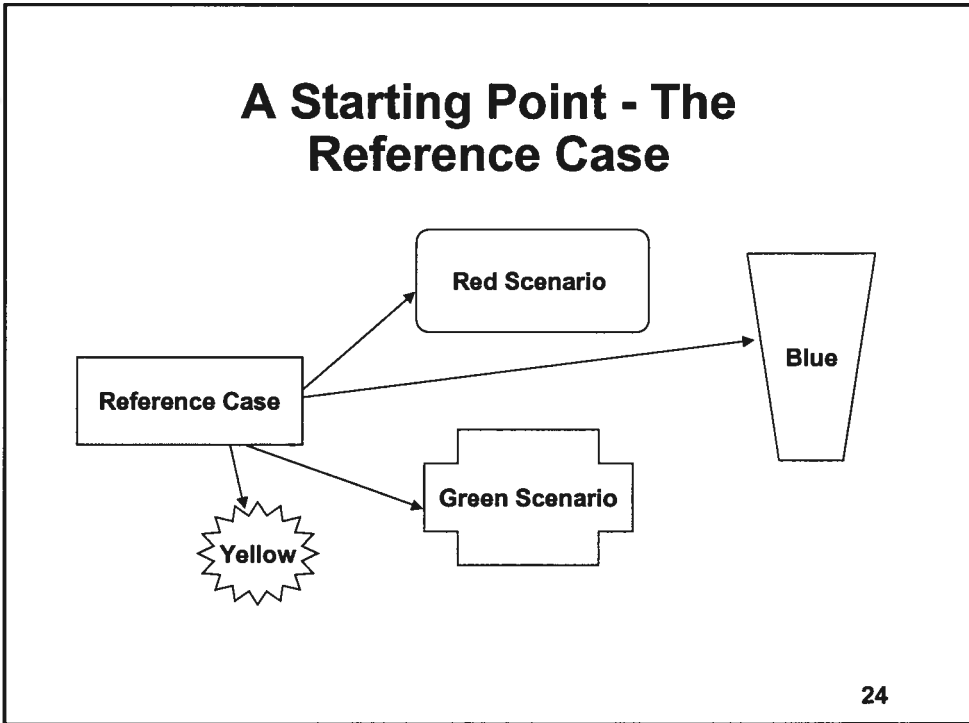
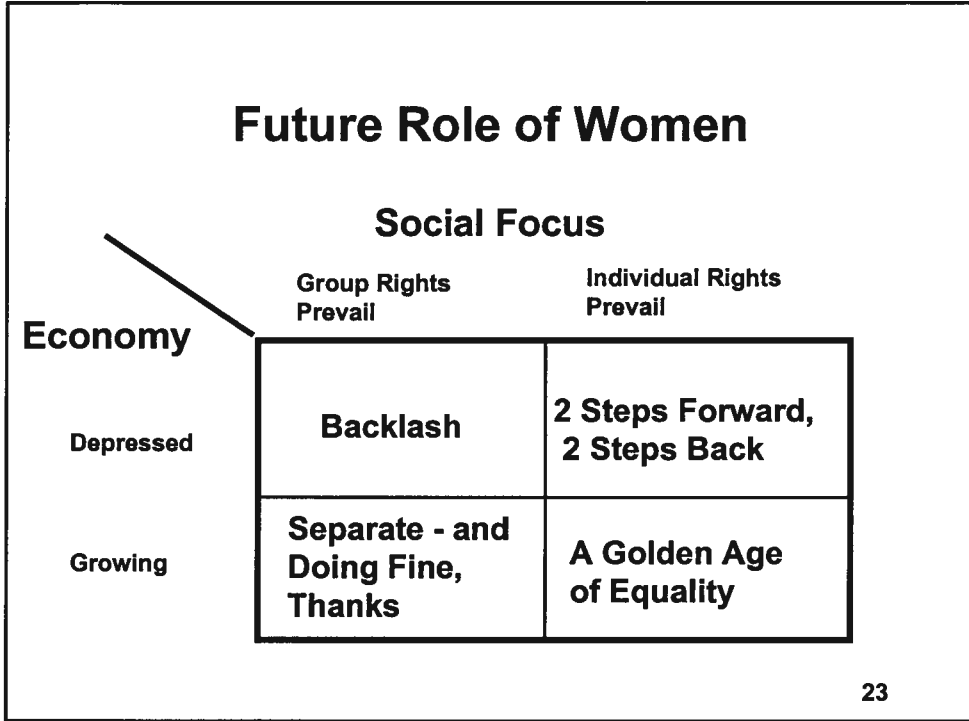
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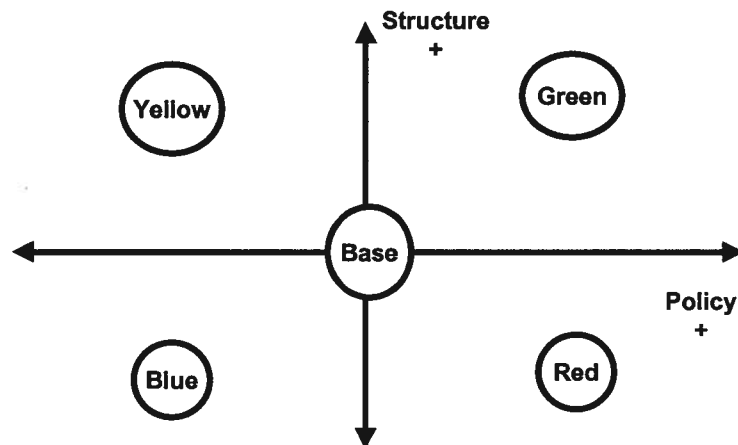
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Grouping the Driving Forces

- **Society, etc.**
 - Labour market participation
 - Immigration
 - Learning Society
 - Productivity growth
- **International**
 - Real interest rates
 - Growth
 - Commodity Prices
 - Market access & penetration
- **Monetary Policy**
 - Spread with US
 - Exchange rate
- **Fiscal Policy**
 - Degree of Federal-provincial restraint
 - Competition policy

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Positioning the Scenarios



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US Issues

- Can a recession be avoided before 2000?
- Poor productivity performance in last twenty years and stagnating real wages.
- Changing income distribution - linked to skill levels?
- Deficit-debt stability
- Medicare-Medicaid deficits
- Social security changes
- Global peace-keeper
- Creating a more open trading regime
- Environmental actions - how much?

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Driving Forces: US Structural

- Human capital formation
- Research and development
- Relative prices of medical services
- International trade liberalization
- Ageing population
- etc.

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Driving Forces: US Policy

- **Fiscal policy - Balanced Budget by 2002**
- **Monetary policy - carrying the weight**
- **Curbing medicare entitlements and reducing price pressures in health care**
- **Environmental policy on clean air, GHG**
- **etc.**

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Canada-US Linkages

- **US policy and performance**
 - Monetary policy
 - Demand for exports
- **Bilateral Forces**
 - NAFTA expansion?
 - Cultural industries
 - Open skies
 - Trade actions (e.g., softwood lumber)
- **International & Global**
 - UN and OECD reform
 - Greenhouse gas emissions?
 - Human rights and trade

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The Reference Case

- Real interest rates exceed real economic growth
- Unemployment rates remain high (8-10%) through 2006
- Debt ratios slowly improve
- Current account balance is a stable and small deficit

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The Blue Scenario

- Real interest rates are higher - both abroad & in Canada
- Foreign growth slows and protection reduces penetration
- Fiscal balances maintained through tax hikes
- Immigration reduces
- Discouraged workers increase
- Unemployment rate approaches 12%
- Real disposable income lower by over 5%

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The Green Scenario

- Real interest rates are lower - both abroad & in Canada
- Foreign growth increases and more penetration of foreign markets
- Fiscal surpluses reduced through tax cuts
- Immigration increases
- Discouraged workers return to labour market
- Unemployment rate approaches 6%
- Real disposable income higher by almost 6%

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The State of Nature



Nature Capricious

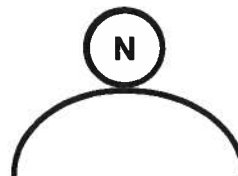


Nature Tolerant

Nature Benign



Nature Ephemeral



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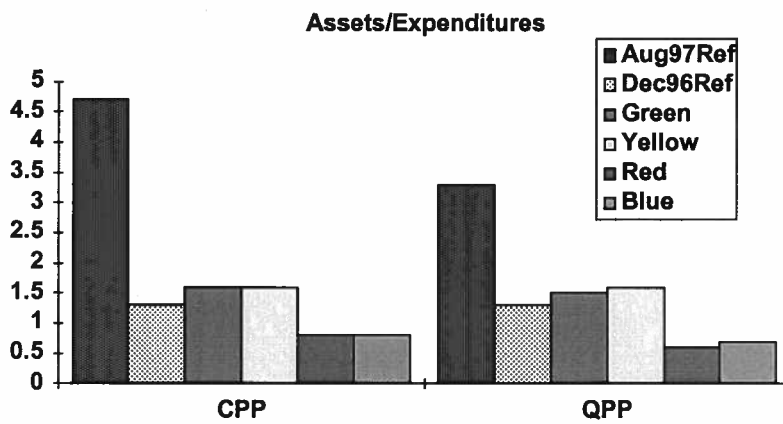
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Model Uncertainties

- Snippets
- Agreed-on linkages
- Contested linkages
- A model is a collection of many snippets

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CPP and QPP Asset/Expenditures Ratio 2007-10



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The Scenario Steps- I

- **What are the major issues?**
 - Time frame
- **Who are the stakeholders?**
- **What matters?**
 - Identify the “Key Factors”
- **What are the “drivers”?**
 - What goes together?
 - What clashes?

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The Scenario Steps - II

- **New Key Factors**
- **New Driving Forces**
 - Uncertainties
 - Trends
- **Most important**
 - Key Factors
 - Driving Forces
- **Estimates and ranges for major Uncertainties**
- **Most important and most uncertain Driving Forces:**
 - What defines the scenarios

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Scenario Processes

- **Codifying Current Thinking**
- **Learning Scenarios**
- **From Learning to Decision Scenarios**
 - Name changes
 - New elements
 - More than two?
 - Not three?

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The Scenario Steps - III

- **Fleshing out the scenarios**
 - Specific activities or decisions that affect the story
 - Key government decisions
 - Actions by other stakeholders
 - Other events and actions
- **Early Trends?**
- **Remaining research questions?**
- **Plan to refresh scenarios**

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Other Events and Actions

- Other Driving Forces
- Context of Trends
- Organizational and Institutional changes
- Others

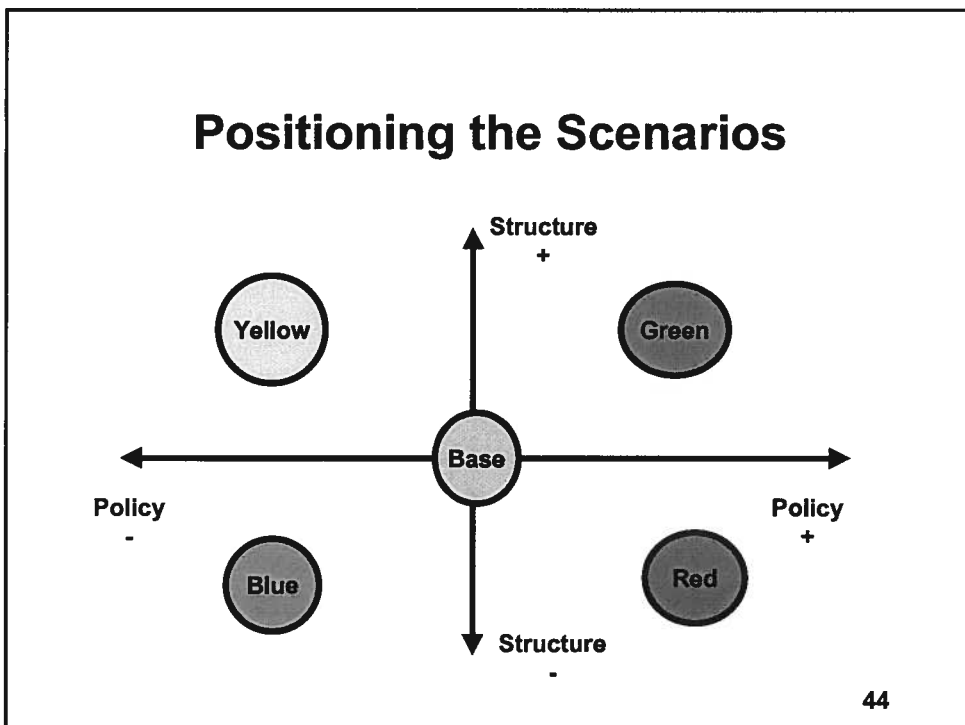
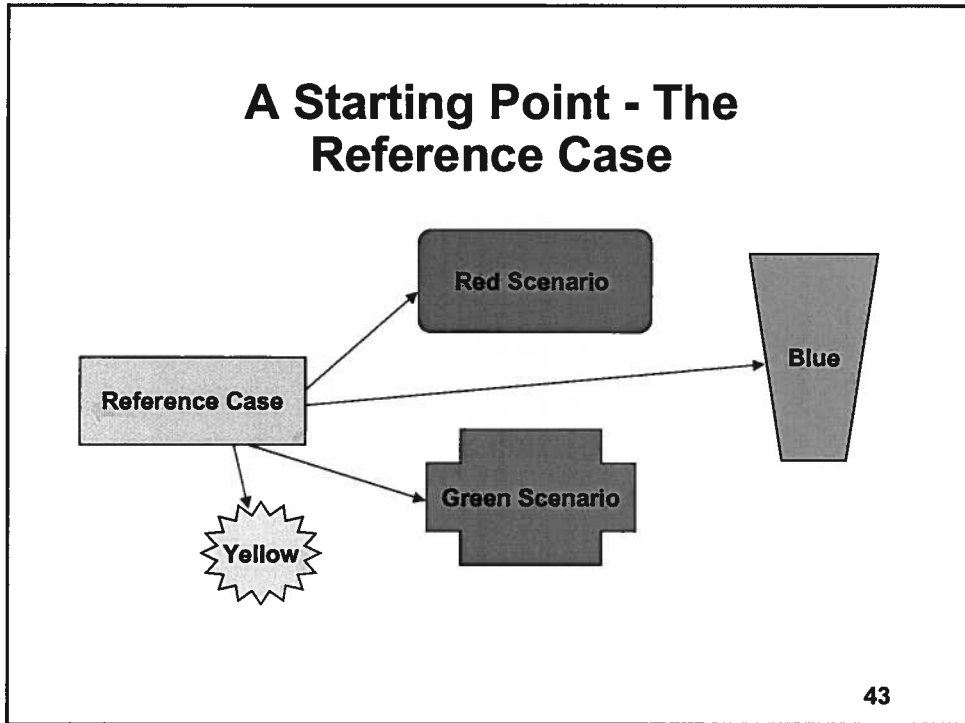
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Why Scenarios from Informetrica Limited?

- Variety of clients
- Alternate views needed for different purposes
- Longer-term perspective
- Use of models allows incorporation of known linkages
- Consistency of models - national, industry, and provincial space
- Easy updating and monitoring

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