DISRUPTING CANADA'S LOW-INNOVATION EQUILIBRIUM

Presentation to Research Money Conference

by

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CANADA'S INNOVATION PARADOX

Conventional wisdom: Business innovation is the principal driver of firm competitiveness and long-run economic prosperity

The Canadian business sector is an innovation laggard—e.g.

- ❑ Feeble MFP growth
- ❑ Low R&D spending
- ❑ Middling up-grading
- ❑ Few tech-based MNEs

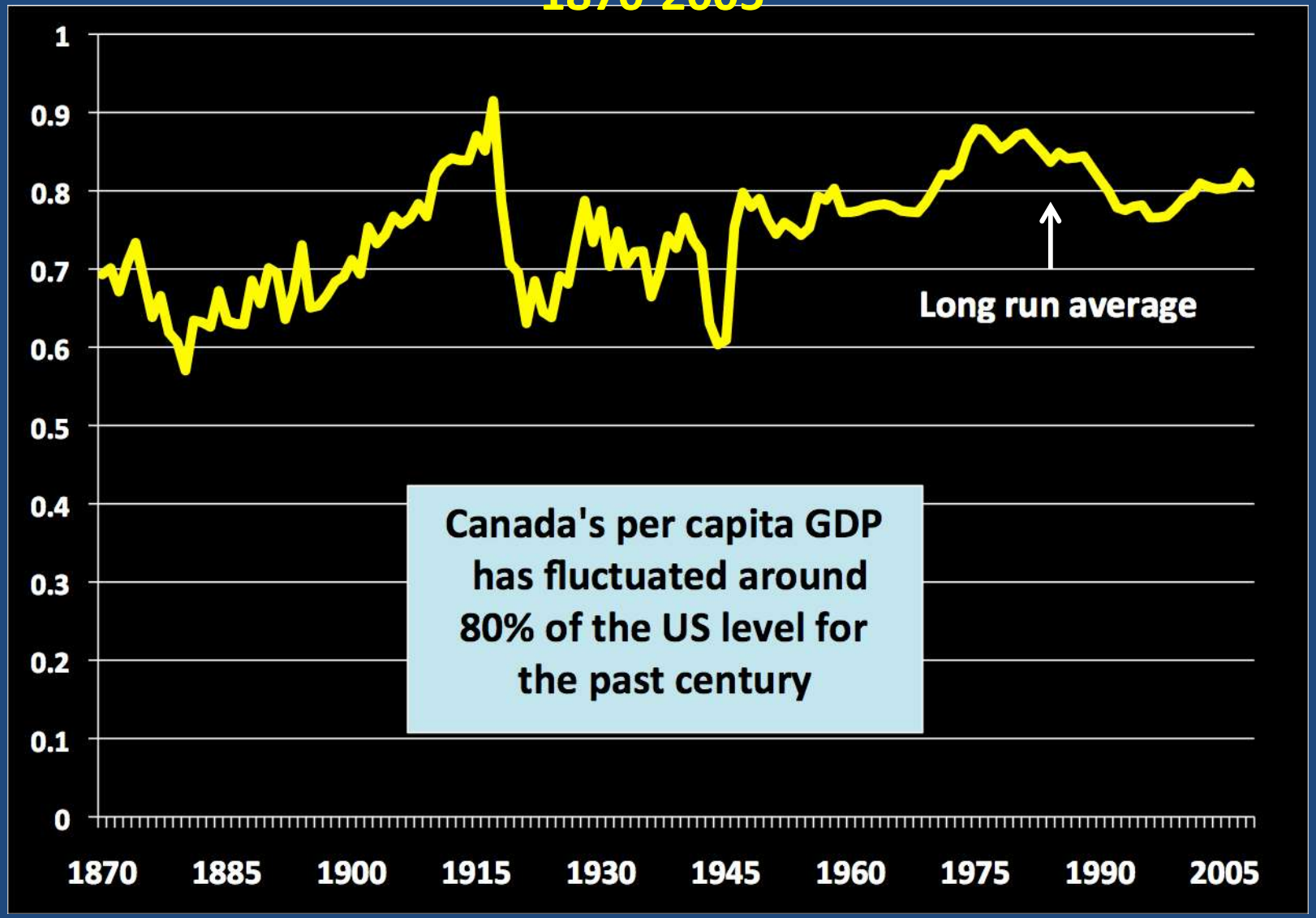
…but Canada's economy continues to produce one of the world's highest standards of living; and Canada's business profitability, in aggregate, matches that of the US.

This benign state of affairs has persisted for decades… through good times and bad.

Canada's "low-innovation" business behaviour has delivered

GDP PER CAPITA: CANADA AS % US

1870-2005



WHAT CREATED THE LOW-INNOVATION EQUILIBRIUM?

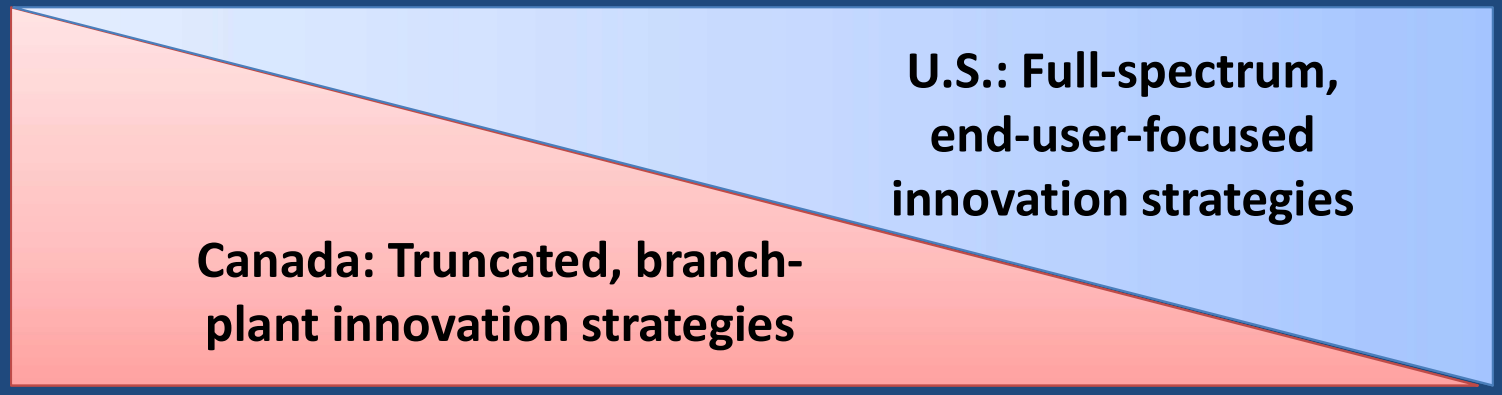
I. Canada's small and fragmented domestic market is:

(a) less attractive to foreign competitors who go first where opportunities are greatest;

(b) less likely to reward the risk of investment in major innovation.

…but what about Finland, Sweden, Taiwan, Switzerland?

II. Canada's Upstream Role in North American Value Chains



Profitable linkages with the US have powerfully shaped business strategy and culture

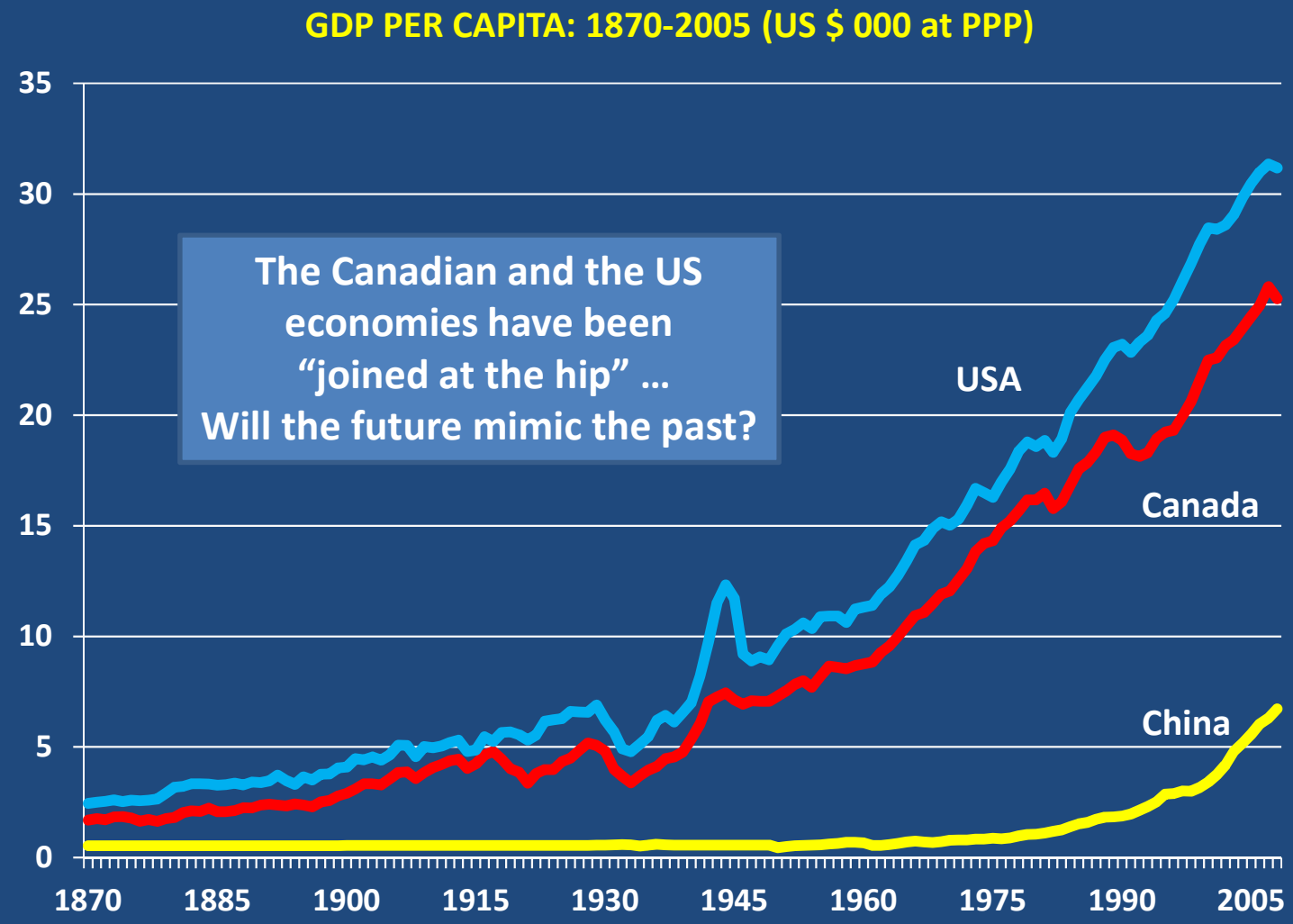
CANADA LACKS A "SERIOUS" INNOVATION POLICY

Federal governments, of both parties, have never sustained the commitment needed to encourage Canadian business out of its low-innovation equilibrium

- ❑ Innovation policy largely an R&D policy with academic intermediaries
- ❑ Innovation file always assigned to a junior Minister
- ❑ PM's Science Advisor never gained traction—compare Korea, Japan, US
- ❑ Revolving door of S&T agencies and advisory bodies
- ❑ Government S&T establishment largely ignored as an economic asset
- ❑ SR & ED tax credit is innovation policy on auto-pilot

The low-innovation equilibrium has been working—so why really try to "fix" it ?

LONG-RUN PERSPECTIVE ON GROWTH



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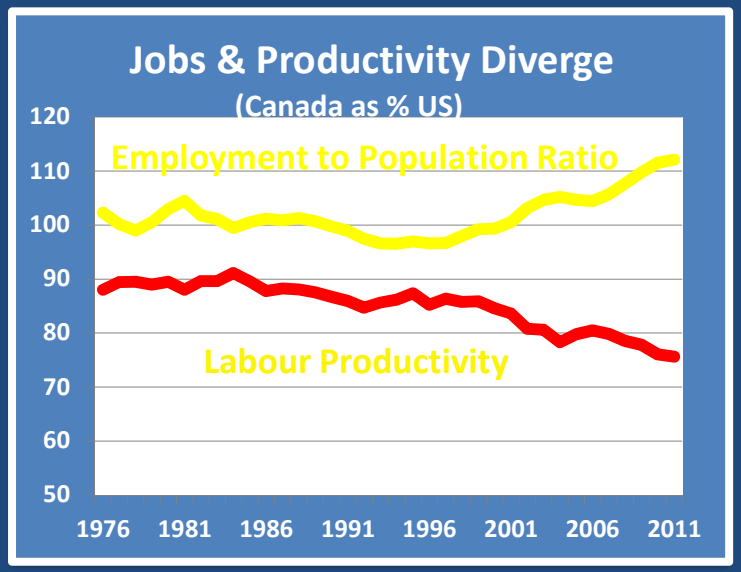
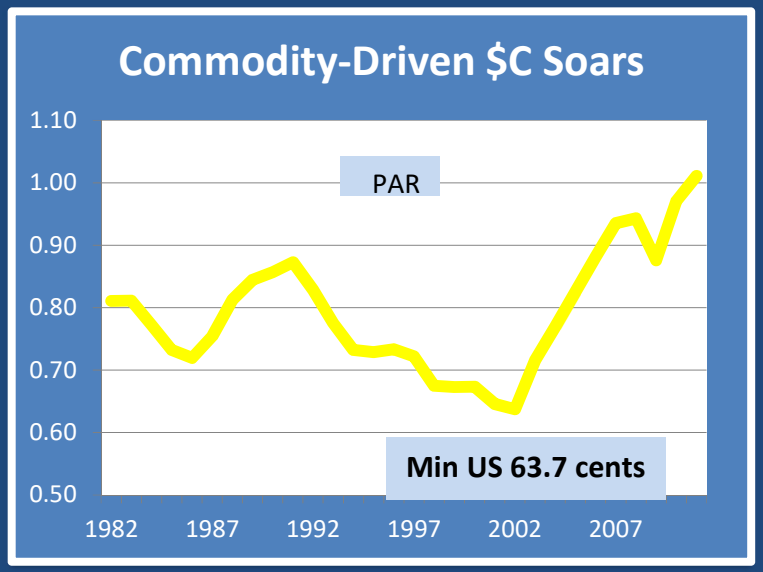
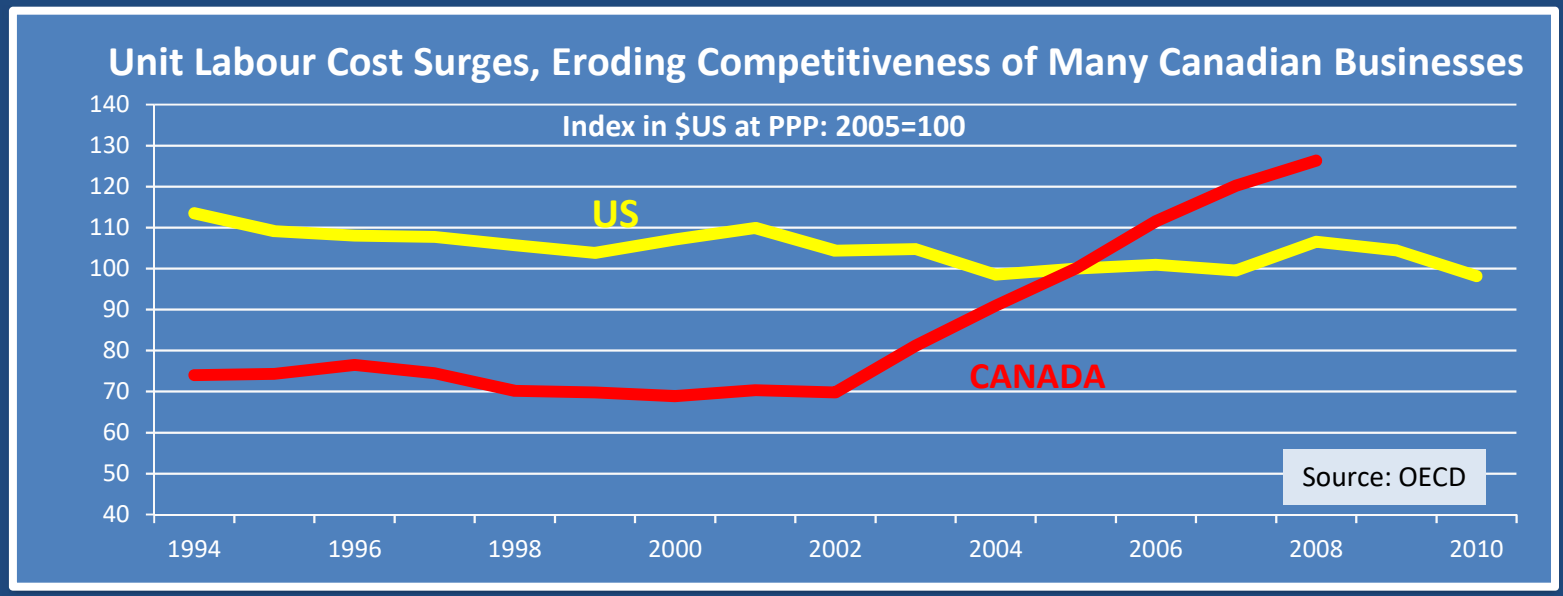






FUNDAMENTAL STRUCTURE-DISRUPTING FORCES

GLOBAL ECONOMIC REBALANCING

Emerging markets opportunities versus continued US focus

RESOURCES DEMAND AND SUPPLY

Continued strong $C for now but intensifying global R&D for substitutes

AGEING POPULATIONS

Tightening labour supply implies rising labour cost—productivity imperative

TRANSFORMATIONAL ICT

Profound and continuing disruption of markets and business models

These forces are already making Canada's low-innovation equilibrium untenable

WHAT ROLE FOR PUBLIC POLICY?

The structure-disrupting forces will (eventually) force Canadian business to be much more innovative.

Wise and potent policies can make the transformation faster, more efficient and of greater overall benefit for Canadians.

ADDRESS TRANSFORMATIVE FORCES

For example:

- **Major push into emerging markets (and not only China)**
- **Hypercharge the "Digital Economy Strategy" (remember that?)**
- **Strengthen the "innovation intermediaries" between ideas and markets**

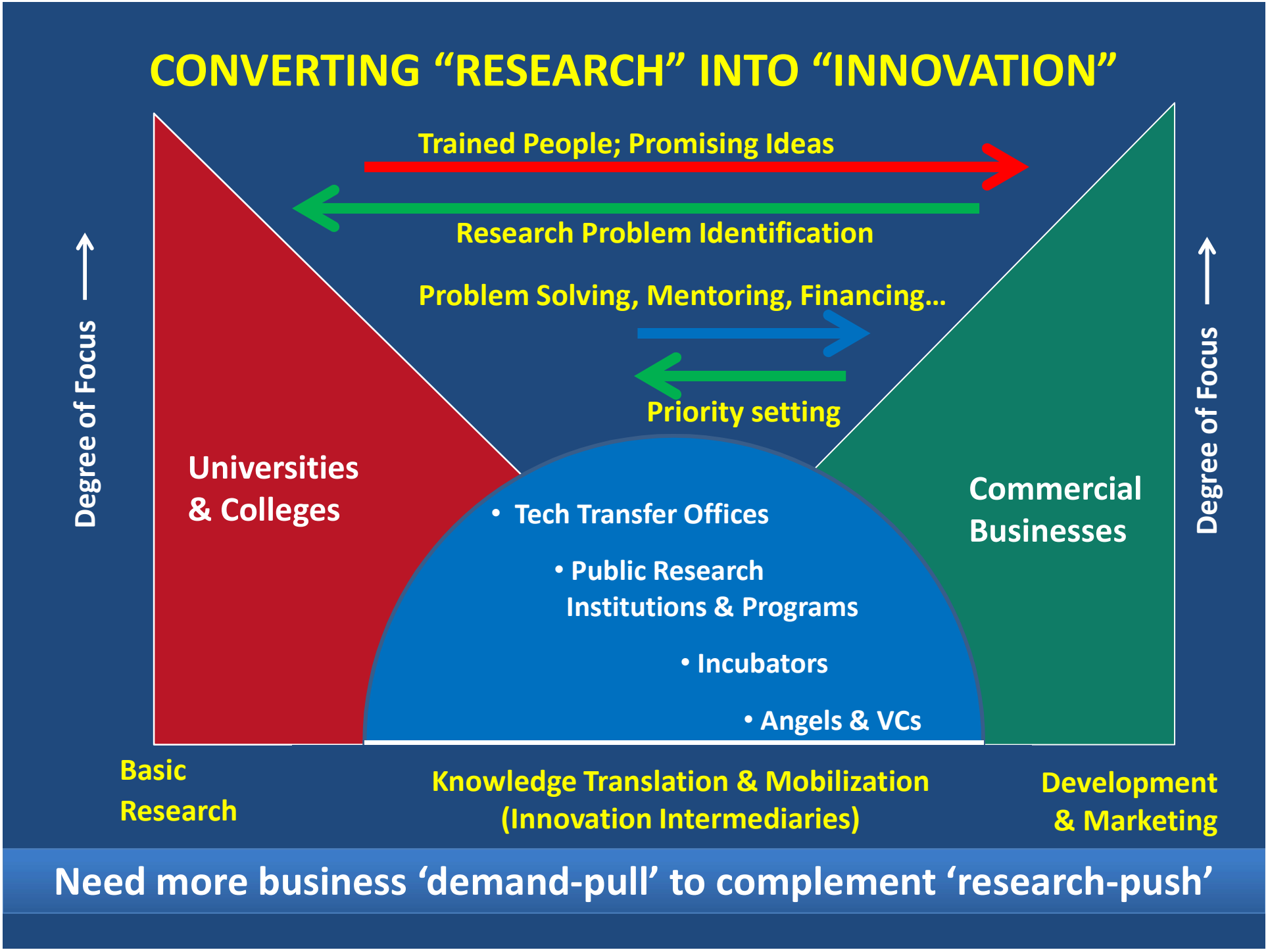
MAKE INNOVATION A REAL PRIORITY

For example:

- **Upgrade the "file" and go beyond the R&D ghetto**
- **Rebuild internal capacity to engage with business**
- **Work co-operatively with Provinces and cities. Make it a truly national endeavour**

…but the old habits of both business and governments will not easily be changed

ANNEX SLIDES


CONVERTING "RESEARCH" INTO "INNOVATION"
Trained People; Promising Ideas
Research Problem Identification
Problem Solving, Mentoring, Financing…
Priority setting
Degree of Focus
Degree of Focus
Universities & Colleges
• Tech Transfer Offices
• Public Research Institutions & Programs
• Incubators
• Angels & VCs
Commercial Businesses
Basic Research
Knowledge Translation & Mobilization (Innovation Intermediaries)
Development & Marketing
Need more business 'demand-pull' to complement 'research-push'

THE CHALLENGE OF MULTI-INSTITUTIONAL COLLABORATION

	UNIVERSITIES	TRANSLATION & MOBILIZATION	BUSINESSES
Research Motivation	Create and share knowledge	Ideas to Innovation	Use and control knowledge
Time Horizon	Mid-to-Long	Variable	Short-to-Mid
Individual Rewards/ Incentives	Tenure, promotion and professional recognition	Variable (Major challenge for organizational design)	Money and authority in the firm
Institutional Temperament	Institutional continuity, organizationally-loose	Ranges from bureaucratic to entrepreneurial	Goal-focused, organizationally-tight

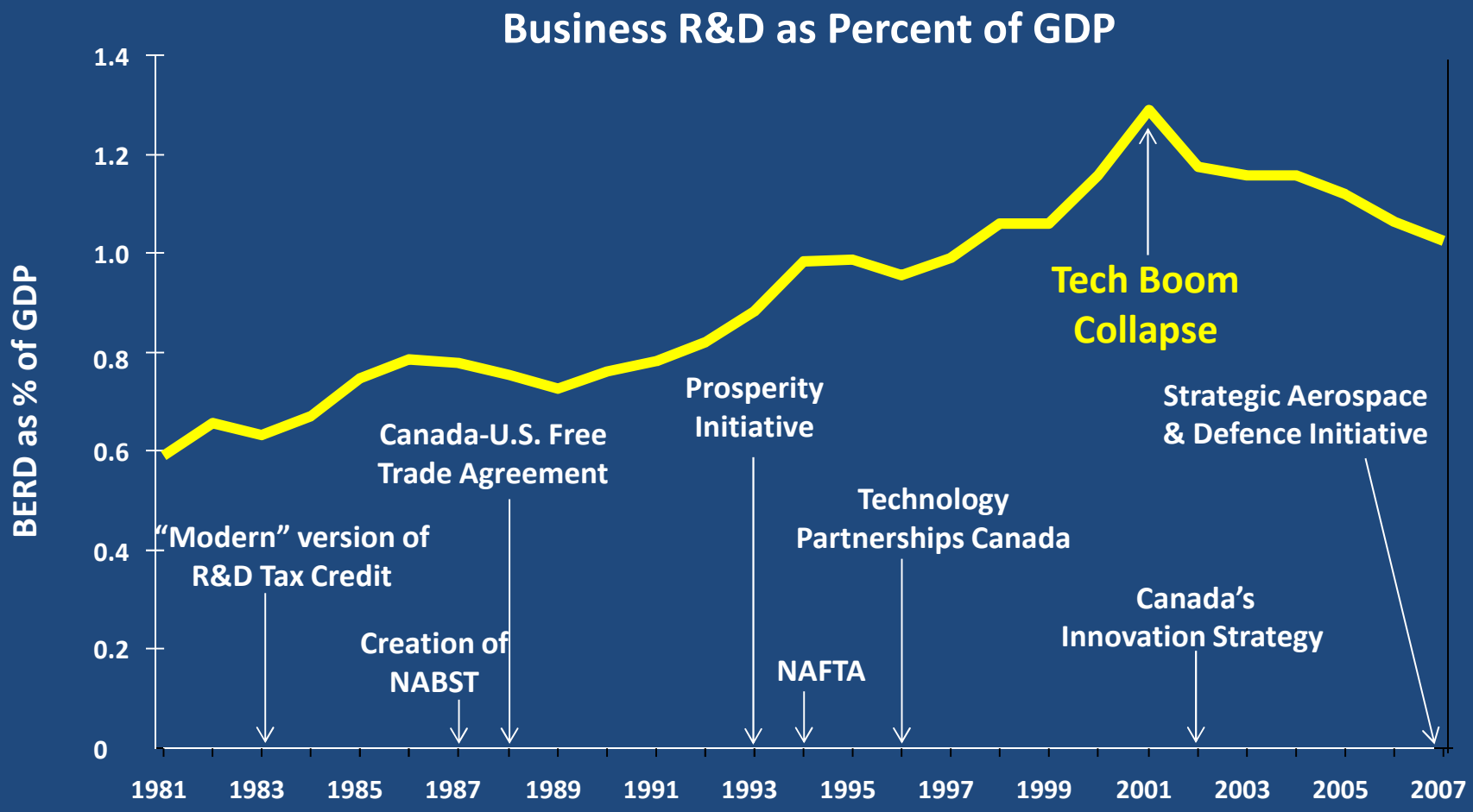
Organizational innovation needed to meld cultures and incentives

BUSINESS INNOVATION SUPPORT IN BUDGET 2012

	2012-13	2013-14	2014-15	2015-16	2016-17	5-Year Total
IRAP	110	110	110	110	110	550
R&D Internships	7	7	?	?	?	14
Business-led NCEs	12	12	12	12	12	60
Procurement		25	35	35	40	135
Business-Academic Collaboration	37	37	37	37	37	185
Re-focussing NRC	67					67
Genomics Research	10	50				60
Western Innovation Program			?	?	?	?
TOTAL NEW TARGETED SPENDING	243	241	194	194	199	1071
Reduction in SRED		-35	-315	-480	-500	-1330
NET INCREASE (DECREASE) IN SUPPORT	243	206	-121	-286	-301	-259

Source: Estimates from text and tables in Budget Plan

INNOVATION POLICIES VS. STRUCTURAL CONDITIONS



Data Source: OECD, 2008c

Only the tech boom and collapse have had any major impact on BERD ratio