

Theme 1: Innovation and knowledge flows in the Saskatoon City Region

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Local Buzz/Global Pipelines

- **Local buzz:**
 - Economies of scale/scope (labour markets, services)
 - Leadership (stars, entrepreneurs, VCs, angels)
 - Sophisticated local demand via global firms (MNEs)
 - Critical infrastructure (labs, universities)
 - Relationships/culture
- **Global pipelines:**
 - Access to proprietary IP and contextual knowledge via stars, MNEs, labs, VCs

ISRN hypotheses:

Economy & creativity in city-regions depends on:

- strength of local knowledge flows within individual industries/clusters
- strength of local knowledge flows between individual industries/clusters
- strength of knowledge-based linkages between local and non-local economic actors

Economic performance of city-regions depends on:

- density of local networks
- relative mix of local and non-local ties
- diversity of economic actors belonging to networks

Data

- 1997-99: Phillips & Khachatourians global oilseeds complex in Saskatoon: 30 semi-structured interviews
- 2002-3: ISRN I: 75 in-person, structured interviews of biotechnology cluster
- 2007-8, ISRN II-1: 25 structured interviews
- 2008: Phillips & Webb creatives survey: 109 respondents
- 2009: Webb SNA on social entrepreneurs in Saskatoon: 30 individuals

H1: Local knowledge flows

- Firms in ISRN II-1 reported competitive advantage from: innovation (50%); customer service (25%); management responsiveness (12%)
- Sources of IP: 18 firms indicated they owned some IP—16 used patents; 2 used trade secrets—5 indicated that they did not have any unique products or services that could be protected
- Collaboration often only a supply chain relationships
- Appear to be based on common norms and beliefs

Ways firms track competitors

Method	# of respondents
Conferences and/or meetings	12
Personal contacts	10
Networking	9
Looking on web sites	8
Publications	6
Customers	3
Patent searches	3
Collaboration	2
Buy and test products	1

Source: Phillips et al 2004.

Collaborations

Every firm gained from collaboration:

- Mostly feedback
- Some quantifiable benefits of knowledge flows
- Public institutions critical to knowledge flows (USask, NRC/PBI, POS Pilot Plant, AAFC, NRC/IRAP, Innovation Place and VIDO)

BUT not key to business strategy

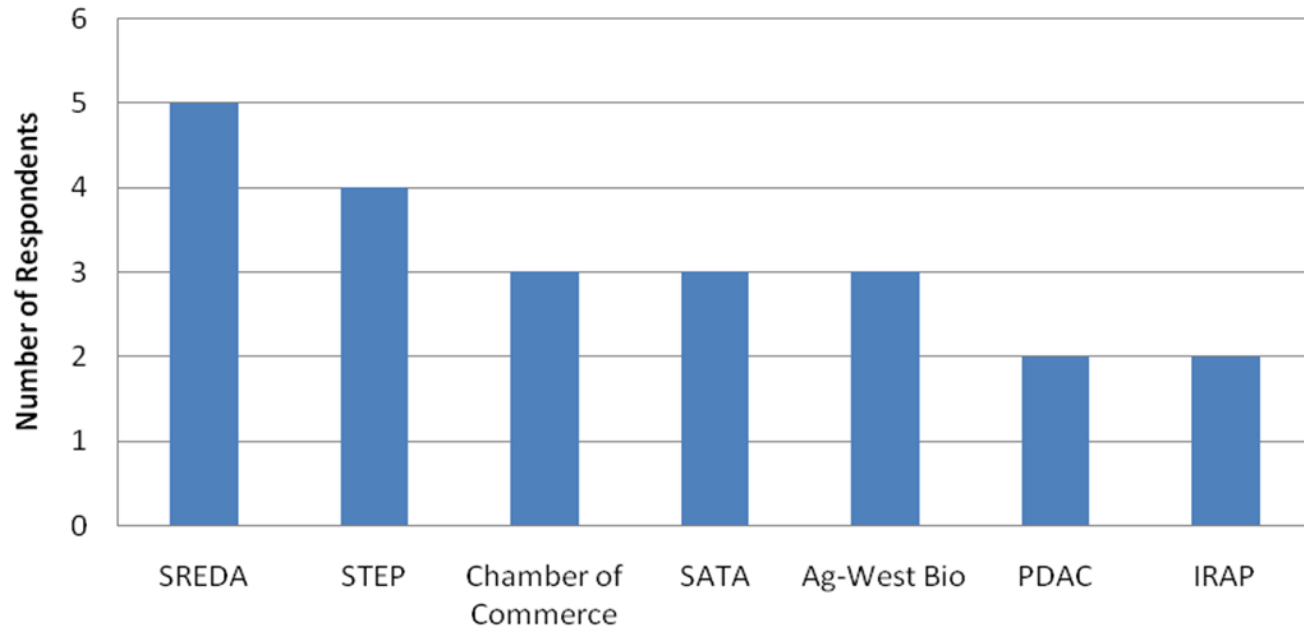
- Often shallow: related to single innovation step (e.g. funding or product testing)
- Narrow collaboration in development process:
 - To increase efficiency and cut costs; also to access unique knowledge/expertise to stay at cutting edge of science and technology
 - Smaller firms and start-ups cite need to access specific services, equipment, and infrastructure.
- Supplier collaborations: remedy in-house weaknesses (8), create efficiencies (7) and ease compliance with regulations (2).

Role of local govt & trade associations

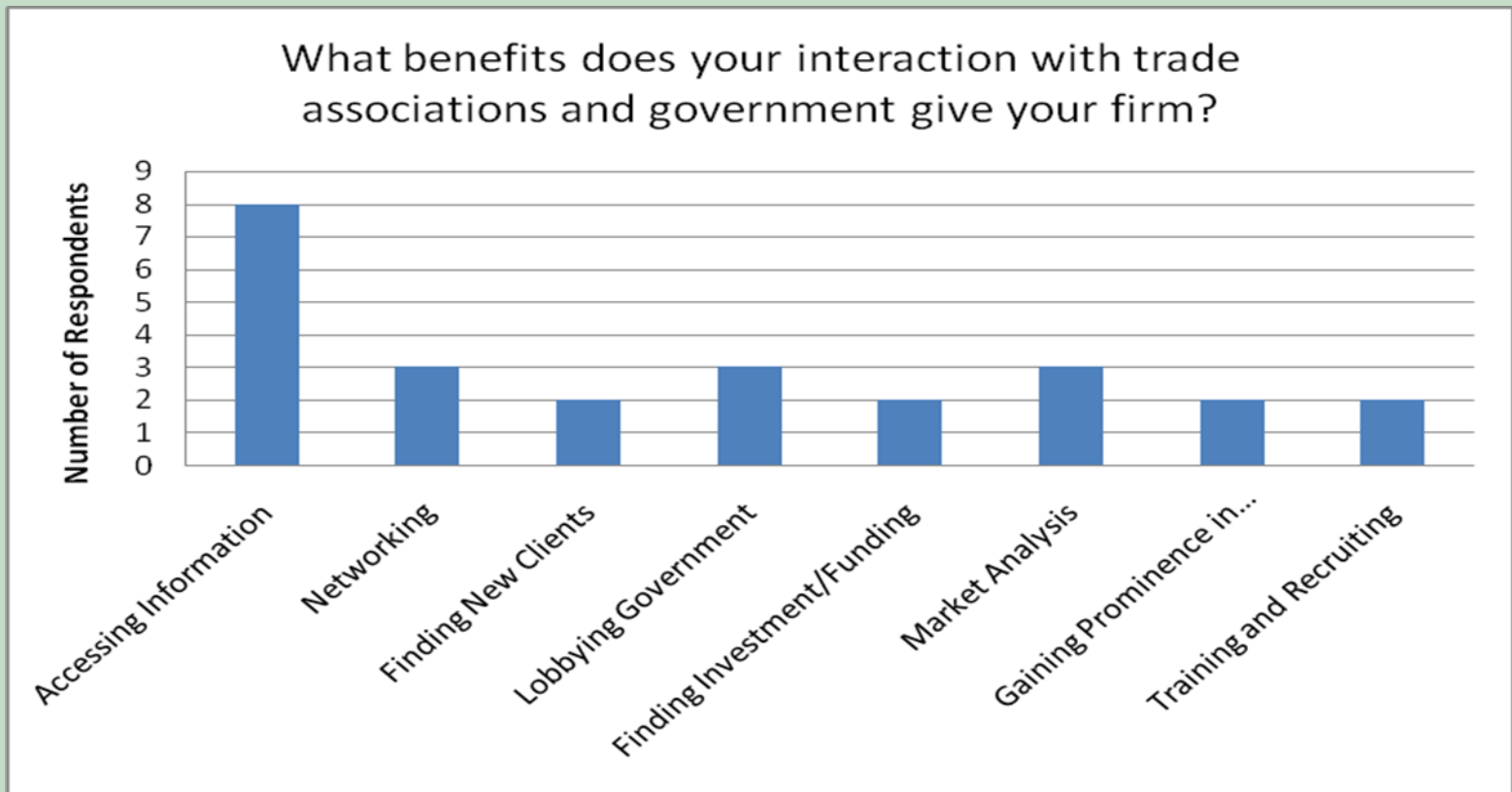
- Place to exchange information that not a direct threat to their company
- Default is to share knowledge as the natural order of things
- Most reported knowledgeable acquaintances who could help
- Respondents also likely assist if the roles reversed
- Compensation for brief consultations never mentioned; only expected if extended period
- Interactions mostly local



Government and Trade Associations



Rare for respondents to indicate trade associations or government had important influence on their business



Even if firm worked with trade association, often unable to define benefit; some firms derided organizations for not doing enough

Local knowledge flows

- Connections mostly informal—often simply picking up phone to call acquaintance at Uni who might be able to lend assistance
- Only ‘buzz’ in Innovation Place; nowhere else (ISRN II-1)
- More often through labour mobility

Labour mobility within clusters/industries

	Current <i>Current Employer</i>	Past employment experience			
		<i>Uni</i>	<i>Other firms</i>	<i>AAFC</i>	<i>NRC</i>
Firms	189	45	81	13	8
AAFC	162	42	50	--	4
NRC	39	19	9	3	--
Total	390	151	140	16	12
% total		39%	36%	4%	3%

Source: Phillips and Khachatourians 1999.

~35% of firms' employees

Mobility within sectors/clusters

- Phillips & Webb: “How open are the social networks in Saskatoon to new people and new ideas?”
 - average response of 6.32 (range 2-10; STDEV 1.85)
 - “growing pockets of very open, innovative and welcoming networks” but some resistance that newcomers experienced
- ISRN II-3: “Do interactions [between various networks, associations and government actors] tend to be collaborative or competitive?”
 - 19/27 with average response 6.95 (range 2-9; STDEV 2.20).
 - social capital investments biased to supporting collaboration and weakly support innovation

H2: Mobility between sectors (Phillips & Webb)

- Does economy enable mobility between sectors?
 - 10 point scale (1=none; 10=high)
 - 58 responses with average of 6.5 (STDEV 1.6) that the economy facilitates mobility
- Does respondent use knowledge gained in other sectors in current work?
 - 10 point scale (0=never; 10=frequently)
 - 62 responded with average 6.6 average (STDEV 2.2)
- No significant correlation between the responses and the talent index.

Cross sectoral learning

- Overwhelming firm response was bafflement at the idea of learning from other sectors
 - Did not happen at all (38% of respondents)
 - Minimal (31%)
 - Noteworthy extent (25%)
 - A lot (1)
 - Larger firms more likely to learn across sectors
 - Usually closely related industry, e.g. gold mining learning from uranium mining.
- Learning from other sectors:
 - Specific methods, such as mining from metal-working and manufacturing
 - Functions, such as HR and exporting

Recruiting

- Common view: workers strictly confined to sector; do not work across fields in any significant way
 - 58% of firms never recruit from other sectors
 - 17% said it happened rarely
 - 20% report cross sectoral hiring important for new perspectives and skills
 - Partly forced by Saskatoon's limited workforce
- 7 firms commonly recruit directly from competitors; BUT many firms believe it unethical or inappropriate
- Half of firms report special relationship with local education institution (SIAST or Uni); included job fairs, internships and curriculum

H3: Strength of local-global links

A composite of:

- People: based on hiring practices and migration patterns
- Knowledge: based on flows of codified knowledge and networks to extend know-how
- IP: based on practices and systems

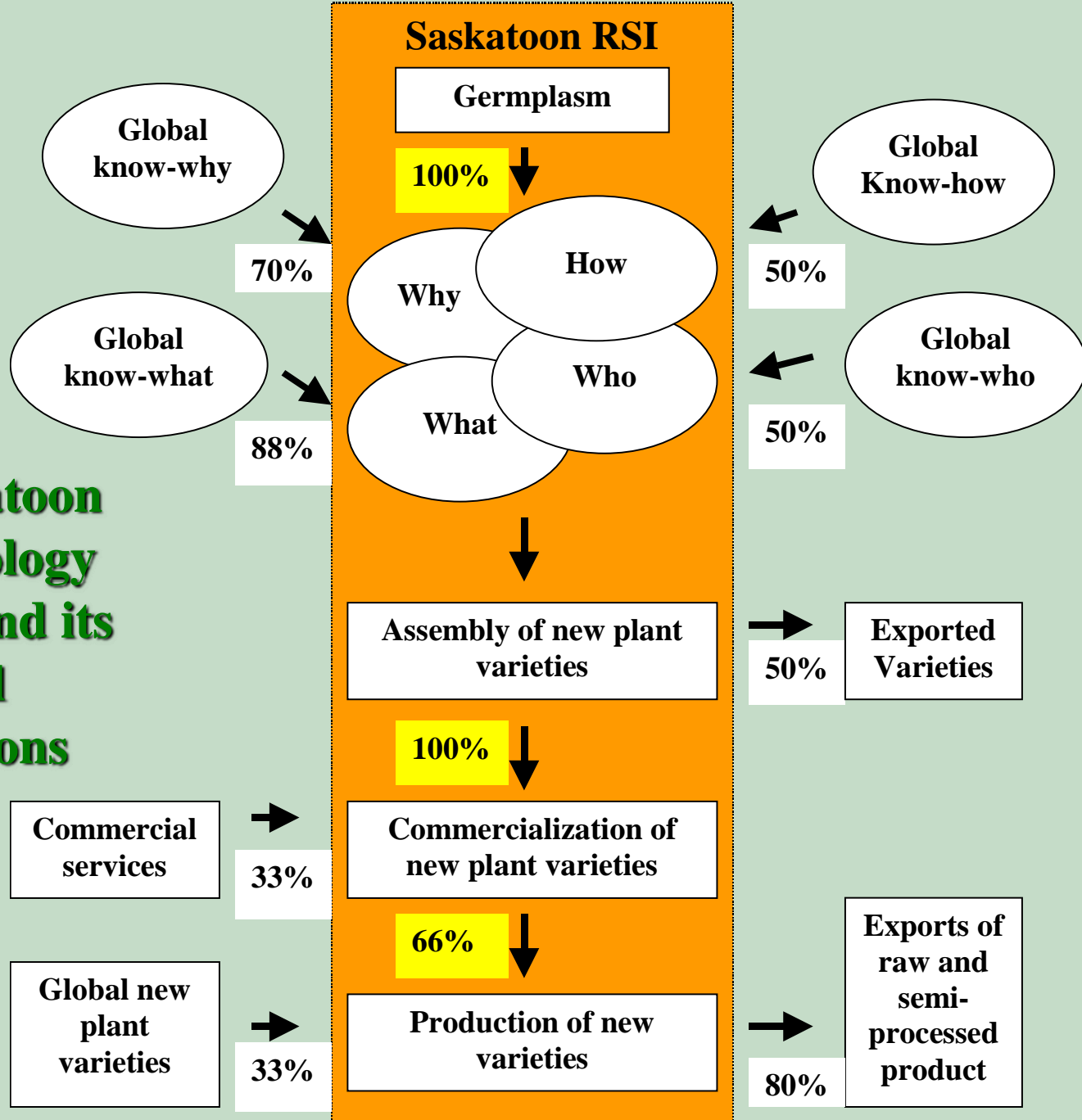
Sources of new employees in private firms

	Local	Non-local	% non-local
Management	11	6	35%
Sci., Tech., Eng.	17	9	35%
Design	3	1	25%
Marketing/Sales	11	9	45%
Production	15	3	17%
Freelance/ Contract	8	5	38%

Source: Author's tabulation of ISRN Survey Part D: Q3.



The Saskatoon Biotechnology entrepôt and its global connections



IP strategies and innovation

	Value	Freq.	%
Formal IP strategy	yes	15	75
	no	5	25
Local/non-locally based strategy	local	10	.50
	non-local	7	.35
	Local and non-local	3	.15
Valuing IP	multidisciplinary/team	8	.40
	market-based	3	.15
	science-based	1	.05
	management-based	1	.05
	customer-based	1	.05
Local/non-local valuation	local	7	.35
	non-local	7	.35
	local and non-local	4	.20

Conclusions:

Economy/creativity depend on strength of:

- H1: local K-flows within industries:
 - Exist but not strong; mostly informal
- H2: local K-flows between industries:
 - Limited; larger firms seek to access
- H3: global pipelines:
 - Evident at cluster and firm level
 - Appear critical in sectors/clusters
 - Not clear whether valued generally

Further analysis

- Role of informal collaboration?
 - Is it cultural (qualitative analysis of survey)?
 - Is it regional (comparison across city-regions)?
- Access to university knowledge: P2P or institutional?
 - Does this vary by region? By sector?
- Qualitative analysis of surveys to extract values and norms?
 - Would it vary by region?