

# Can Efficient Provision of Business Development Services Bring Better Results for SMEs?: Evidence from a Networking Project in Thailand

Aya Suzuki (UTokyo) & Kengo Igei (JICA-RI)

November 23, 2016 @ APEA 2016

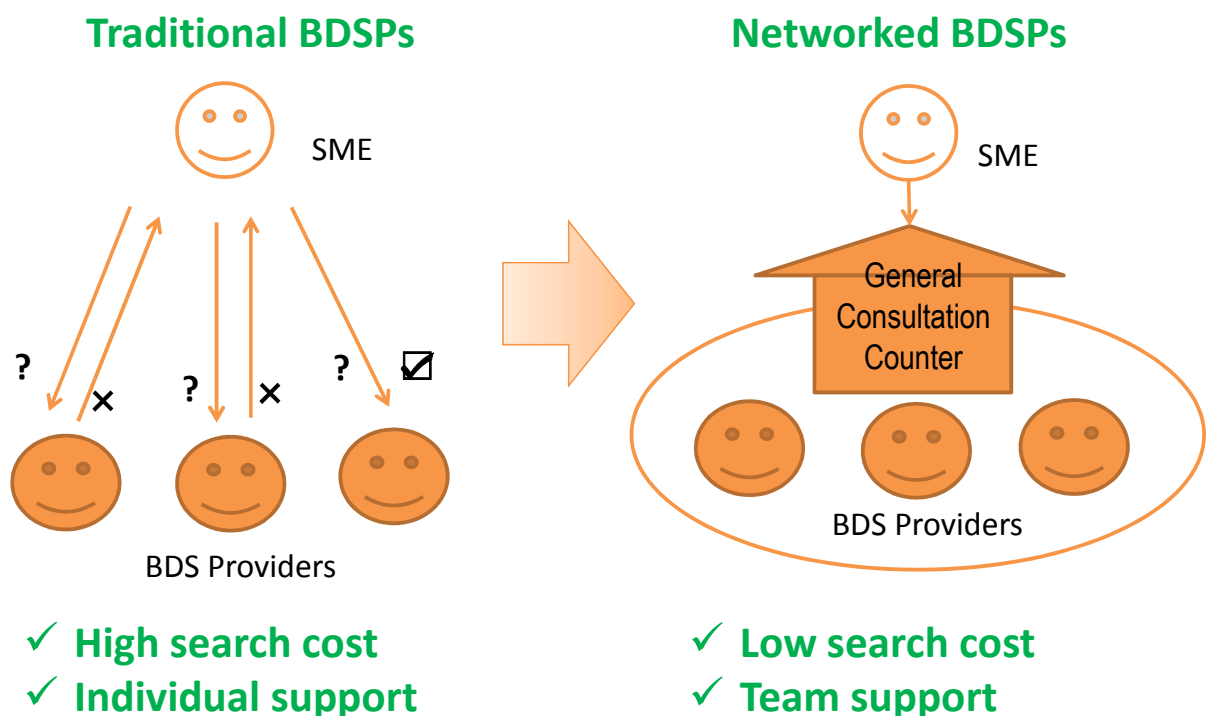
WS05: 14<sup>th</sup> ODA Evaluation Workshop, MOFA, Japan

Melia Hotel, Hanoi, Vietnam

\*This paper is based on a research project by JICA Research Institute.

1

## Networking Image



2

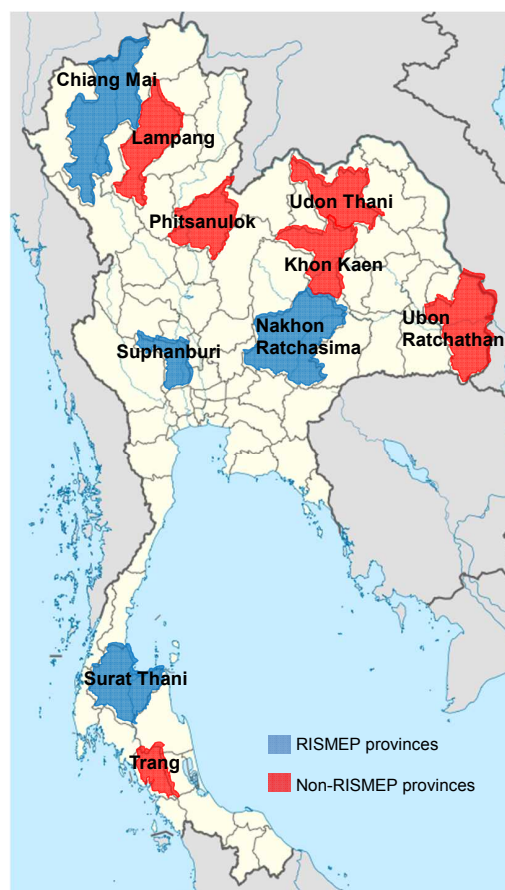
# Research Questions

- Q1. Does networking of BDS Providers (BDSPs) improve performances of BDSPs?**
- Q2. Does the use of BDS improve performances of SMEs?**
- Q3. If the BDSPs are networked formally, will the effect of BDS usage by SMEs on their performances be greater?**

3

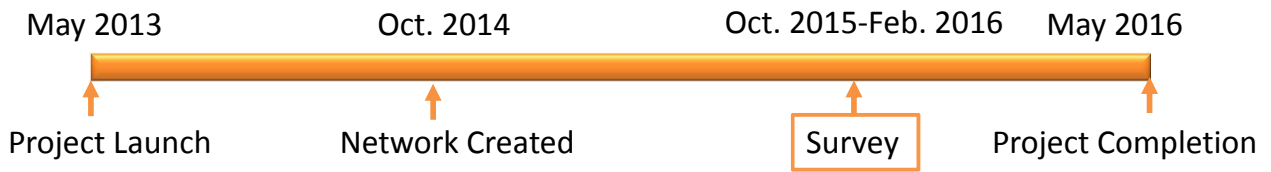
## Data Collection

- Nov. 2015 to Feb. 2016
- **SME Survey**
  - 4 treatment prov. & 4 control prov.
  - Defined “BDS user” if have used BDS since Oct. 2014
  - BDS users: random select from IPC’s list
  - BDS non-users: random select from factory registration list of Min. of Industry
- **BDSP Survey**
  - 4 treatment prov. & 6 control prov.
  - TG: list of RISMED network
  - CG: Made a list of BDS providers referring to names of BDS providers in TG



4

## ● Time line



## ● Sampling

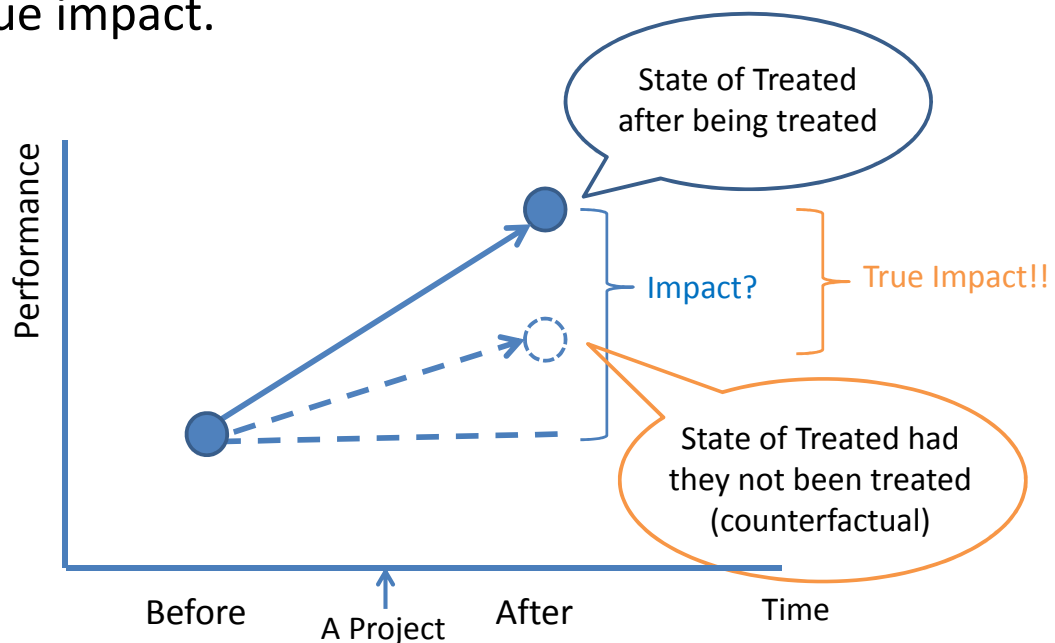
		TG	CG	Total		
BDS providers (BDSP)		68	69	137		
SME	BDS users	134 (103)	169 (132)	303 (235)	518	
	BDS non-users	99 (130)	116 (153)	215 (283)		

( ) shows targeted number

5

## Difficulty of Impact Evaluation

- Treated cannot be observed in the state in which they had not been treated. In other words, we need to proxy this counterfactual state to evaluate the true impact.



6

- Proxy 1: Before of Treated ( $Y_{t0}$ )
- Proxy 2: After of Controlled ( $Y_{c1}$ )
- Proxy 3: Difference bw the difference bw before & after of Treated and that of Controlled ( $(Y_{t1}-Y_{t0})-(Y_{c1}-Y_{c0})$ ; DID)
- The greater the initial difference in the characteristics of Treated & Controlled, the greater the estimation bias (Selection-bias, endogeneity)

7

## Estimation Method

$$Y_i = \alpha_1 RISM E P_i + \mathbf{X}_i' \phi + u_i \quad \alpha_1 > 0?$$

$$Y_j = \beta_1 RISM E P_j + \beta_2 BDSuser_j + \beta_3 RISM E P_j \times BDSuser_j + \mathbf{X}_j' \varphi + e_j$$

$i = BDS \text{ provider}, \quad j = SME$

$$\beta_2 > 0? \quad \beta_3 > 0?$$

Controlled variables:

- BDSPs
  - Organizational characteristics (Yrs of operation, types of organization, types of BDS offered, # permanent workers 2013, # workers with univ+degree)
  - MD's characteristics (age, gender, ethnicity, yrs of edu, yrs of BDS exper)
- SMEs
  - Organizational characteristics (domestic ownership, succeeded business, yrs of operation, registered, belong to biz assoc., # permanent worker 2013, urban dummy, ISIC codes)
  - MD's characteristics (age, gender, ethnicity, yrs of edu)

8

- Issues: **Selection bias of RISMEDP & BDSuser**
  - Which provinces receive RISMEDP is upto the Thai Govt
  - Whether to use of BDS is upto the SMEs
  - Highly likely that Treated & Controlled differ in their charac.
- Estimation method:
  - OLS
  - Propensity score matching (PSM)
  - Inverse propensity-score weighting regressions (IPSWR)
  - Optimal trimming (Crump et al. 2006)
  - SMEs: all sample, BDS user-only sample
- Limitation:
  - Due to lack of pre-program data, cannot consider unobserved differences bw Treated & Controlled
  - Cannot assure whether the estimated impacts are due to Project or due to unobserved differences bw Treated & Controlled

9

## Impacts on BDSPs

### Effects on Changes in BDS activities

	Ln(chang e in BDS budget)	Change in # of SMEs that:				
		Contacted by	Supported w/o fees	Supported w/ fees	Introduced to other BDS prov.	Introduced by other BDS prov.
<b>OLS</b>						
RISMEDP	1.34	88.02	-54.68	59.73**	176.56*	16.91**
<b>PSM</b>						
RISMEDP	2.10	72.98	-18.16	40.37	116.57	10.53*
<b>IPSWR</b>						
RISMEDP	1.46	62.04	-67.09	49.72*	163.09*	11.10*

\*\* statistically significant at 5%, \* at 10%

# Effects on BDSPs' Practices

	Internal Capacity Score (6 max)	External Outreach Score (6 max)	Total Score (12 max)
<b>OLS</b>			
RISMEP	0.43	0.63**	1.06*
<b>PSM</b>			
RISMEP	0.21	0.43	0.65
<b>IPSWR</b>			
RISMEP	0.27	0.58*	0.85

11

## Impacts on SMEs

### Effects on SMEs' network w/ BDSPs

	# BDSPs you know					
	OLS		PSM		IPSWR	
<b>ALL</b>						
RISMEP	-0.15	-0.14	-0.18		-0.08	-0.09
User	2.06***	2.02***		1.94***	2.26***	2.23***
RISxUser	-0.13	-1.56**			-0.18	-1.57*
RISxUserxST		3.08***				2.65***
RISxUserxNR		1.92***				2.06***
RISxUserxSB		2.21**				2.37***
<b>USER ONLY</b>						
RISMEP		-1.79***	-0.26			-1.63***
RISxST		2.82***				2.99**
RISxNR		2.37***				2.25***
RISxSB		1.86**				1.36

12

## Effects on SMEs' network w/ BDSPs

	# BDSPs you know						
	OLS		PSM		IPSWR		
<b>ALL</b>							
RISMEP	-0.15	-0.14	-0.18		-0.08	-0.09	
User	2.06***	2.02***	$\frac{\partial y}{\partial BDS_{use}}$ $= 2.02 - 1.56 \times RIS$ $+ 3.08 \times RIS \times ST$ $+ 1.92 \times RIS \times NR$ $+ 2.21 \times RIS \times SB$		**	2.23***	
RISxUser	-0.13	-1.56**				3	-1.57*
RISxUserxST		3.08***					2.65***
RISxUserxNR		1.92***					2.06***
RISxUserxSB		2.21**					2.37***
<b>USER ONLY</b>				Non-RISM: 2.02			
RISMEP		-1.79***	CM: 2.02-1.56=0.46			-1.63***	
RISxST		2.82***	ST: 2.02-1.56+3.08=3.54			2.99**	
RISxNR		2.37***	NR: 2.02-1.56+1.92=2.38			2.25***	
RISxSB		1.86**	SB: 2.02-1.56+2.21=2.67			1.36	

13

## Effects on SMEs' demand for BDS in problem-solving

	=1 if consult BDSPs first for problems in:						
	General	Start-ups	Credit	Legal	Tech	Marketing	HR
<b>ALL</b>							
RISMEP	-0.03	-0.02	0.03	0.003	-0.02	-0.01	0.001
User	0.02	0.02	0.06**	0.01	0.07**	-0.001	0.07**
RISxUser	0.02	0.003	-0.06	-0.03	0.06	0.08*	-0.06
<b>USER ONLY</b>							
RISMEP	-0.01	-0.01	-0.02	-0.03	0.04	0.09**	-0.05

14

## Effects on SMEs' interaction w/ BDSPs

	Change in # of times in:					
	Contacting BDSPs		Receiving BDS		Participating BDS training	
<b>ALL</b>						
RISMEP	0.25	0.20	0.05	-0.09	-0.04	-0.28
RISxST		1.10*		0.44		1.19***
RISxNR		-0.44		0.07		-0.17
RISxSB		-0.54		0.28		0.41
<b>USER ONLY</b>						
RISMEP	-0.42	-0.07	0.27	0.06	-0.23	-0.30
RISxST		2.80*		1.20**		2.05*
RISxNR		-2.87		-0.11		-1.20
RISxSB		1.36		0.54		1.16

15

## Effects on SMEs' Performances

	Mgt Score	Direct export	Receive contracts	Have certified prod	Ln( $\Delta$ in sales)	Ln( $\Delta$ in profit)
<b>ALL</b>						
RISMEP	1.25***	0.19***	-0.08	-0.20**	2.09	1.82*
User	0.46	0.14***	-0.02	0.04	2.31	1.15
RISxUser	-0.15	-0.05	0.19**	0.28***	-2.04	-2.96*
RISxUserxST	0.14	-0.04	-0.08	-0.07	1.54	3.42**
RISxUserxNR	-0.09	-0.17**	0.04	-0.10	2.54*	3.23**
RISxUserxSB	-0.67*	-0.27**	-0.08	0.18	-3.80	-3.06
<b>USER ONLY</b>						
RISMEP	1.23***	0.18**	0.07	0.07	-1.79	-1.56
RISxST	0.13	-0.25**	-0.15	0.002	-3.42	3.17*
RISxNR	0.003	-0.20**	0.03	-0.11	4.67***	3.63**
RISxSB	-0.84*	-0.24*	-0.01	0.25	-2.10	-2.96

16



# Summary of Findings

- **BDSPs**
  - Interaction with SME increased
  - Improvement in practices (esp. outreach)
  - Became more demand-oriented
- **SMEs**
  - Most of provinces, # BDSPs known increased
  - Increased demand for BDS (esp. marketing)
  - In Surat Thani, interaction with BDSP increased
  - Certain performances improved (# contracts received, # of certified products, increase in profit)

17

---

## Conclusion & Policy Implications

- Networking of BDSPs brought positive impacts to BDSPs themselves & SMEs.
- As networking does not require large-scale construction or establishment of institutions, it may be a cost-efficient method.
- May be a step to improve the inefficiency of vertically-integrated administration system in many countries.

*Thank you for your attention.*

18