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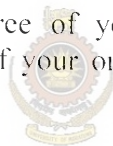
Appendix I: Questionnaire

Open Innovation in Metal Fabrication Industry Segment in Sri Lanka

An Explorative Study in Common Practices, Need and Challenges

The purpose of this questionnaire is to conduct a case study on common practices, need and challenges for Open Innovation in Metal fabrication industry segment in Sri Lanka. This research is carried out only for academic purposes for the MBA in Management of Technology at University of Moratuwa. The information provided in this questionnaire is confidential, only used for statistical data analysis on the concerned industry segment. You are kindly requested to provide the most appropriate measures that fit best with your organization.

Please rate the degree of your agreement with the following questions related to innovation process of your organization. You may mark your answer in the relevant check box.



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Question No.	Questions - Part A	Highest	High	Medium	Low	Lowest
L1	How do you rate Process of fostering shop floor innovation in your company?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L2	How do you rate contribution of cross functional teams into innovation process?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L3	How do you rate contribution of 'suggestion box' into innovation process?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L4	What is the contribution from employees own ideas into innovation process?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L5	How do you rate contribution of your Engineering/ R&D staff into innovation process?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L6	How do you rate your customer's willingness to provide you any specifications?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L7	How do you rate level of customer feedbacks for product modifications?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Question No.

Questions – Part A

Highest High Medium Low Lowest

Question No.		Highest	High	Medium	Low	Lowest
L8	What is the frequency that your customers sharing their future business plans in order to direct your research?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L9	What is the willingness of your supplier to conduct own research to meet your new requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L10	What is the level that your suppliers sharing their experiment results with you?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L11	What is the level of feedback you received from your distributors for product modifications?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L12	What is the contribution to innovation process from your employee's network to other organizations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L13	How do you rate your employees sourcing knowledge from online knowledge groups or forums?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L14	To what frequency that you utilize your friendly company's infrastructure for your research activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L15	How do you rate your present level of collaboration with following parties?					
	Customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Suppliers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Universities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	R&D Labs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Competitors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Supplement manufacturers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Distributors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Solution providers (software, automation, finance)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Technology partners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L16	How do you rate contribution of followings challenges against forming effective collaborations with above parties in L15?					
	Cultural mismatch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Lack of leadership	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Lack of empowerment in IP rights in Sri Lanka	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Lack of finance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Competition for market share	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Procedural issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	External party is not efficient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



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Question No.

Questions – Part A

Highest
High
Medium
Low
Lowest

L17	How do you rate your <i>perceived need</i> for collaboration with following parties?					
	Customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Suppliers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Universities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	R&D Labs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Competitors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Supplement manufacturers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Distributors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Solution providers (software, automation, finance)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Technology partners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L18	How do you rate your <i>perceived need</i> for effectively implementing following concepts?					
	Fostering shop floor innovation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Forming cross functional teams in research activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Suggestion box	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Empowering employees for new ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q19	How do you rate contributions of following challenges against forming effective networks with outside parties?					
	Network and alliances may leak out companies strategic assets to other companies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Partners may acquire your competences and capabilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Networks and alliances may create dependencies in innovation process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Through networks and alliances, partners can become competitors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Question No.	Questions – Part B	Yes	No
N1	Have you engaged in a Joint Venture with another company to share technology	<input type="checkbox"/>	<input type="checkbox"/>
N2	Do you have future plans to form a Joint Venture?	<input type="checkbox"/>	<input type="checkbox"/>
N3	Do you jointly develop any product with another company or organization?	<input type="checkbox"/>	<input type="checkbox"/>
N4	Do you have a sister company to commercialize a technology developed or acquired by you?	<input type="checkbox"/>	<input type="checkbox"/>
N5	Do you have plans to establish a sister company?	<input type="checkbox"/>	<input type="checkbox"/>
N6	Have you licensed your technology to any other company?	<input type="checkbox"/>	<input type="checkbox"/>
N7	Do you have plans to licence your technology in the near future?	<input type="checkbox"/>	<input type="checkbox"/>
N8	Do you outsource supplement R&D activities to any other company?	<input type="checkbox"/>	<input type="checkbox"/>
N9	Do you pay royalty for any technology acquired by you?	<input type="checkbox"/>	<input type="checkbox"/>
N10	Do you have plans to acquire any technology related to your processes in near future?	<input type="checkbox"/>	<input type="checkbox"/>
N11	Do you empower employees to exploit their own ideas?	<input type="checkbox"/>	<input type="checkbox"/>

Q.No.	Questions – Part C
01	What is your role in the organization? <input type="checkbox"/> Engineer <input type="checkbox"/> Manager <input type="checkbox"/> Chief Executive/ Director/ Owner <input type="checkbox"/> Consultant
02	Your company name
03	What are your products?
04	Number of employees <input type="checkbox"/> < 50 <input type="checkbox"/> 50 ~100 <input type="checkbox"/> 100 ~200 <input type="checkbox"/> 200~500 <input type="checkbox"/> 500<

Thank you for participating in this survey.

Appendix II: List of Companies

No.	Company	Products/ functional area
1	Agro Consolidated	Manufacturer/ Assembler of agricultural machinery
2	Alucop cables ltd	Manufacturer of cables
3	Boehm and Leckner multi moulds Pvt Ltd	Manufacturer of moulds and machine parts
4	Colombo Dockyard Plc	Ship building / repairs
5	Electromobiles pvt ltd	Manufacturer/ assembler of electric motor bikes
6	Elsteel pvt ltd	Manufacturer of machine, electrical parts and enclosures
7	Jinasena group – water pump division	Manufacturer of water pumps
8	Loadstar wheel systems	Manufacturer of wheel rims
9	Orange electric	Electrical component manufacturer
10	Tantri trailers pvt ltd	Manufacturer of port and road trailers, fuel tankers, silos and other heavy fabrications
11	Trellebrog wheel systems	Manufacturer of wheel rims
12	Dutch lanka trailer manufacturers ltd	Manufacturer of port and road trailers and semi trailers
13	Damro furnitures	Manufacture of steel furniture
14	Alpha industries	Manufacturer of vaults, steel furniture and hospital equipments
15	Kelani cables plc	Manufacturer of cables
16	IE techniques	Manufacturer of electrical components
17	City engravers pvt ltd	Manufacturer of machine parts, engraving
18	Tool masters pvt ltd	Manufacturer of moulds and machine parts

No.	Company	Products/functional area
19	Mascons ltd	Manufacturer of wire mesh, nails
20	Solex Engineering pvt ltd	Manufacturer of water pumps
21	Kramski lanka pvt ltd	Manufacturer of moulds, machine parts and stamps
22	City cycle industries pvt ltd	Manufacturer of bicycles
23	Wittachi stainless steel pvt ltd	Stainless steel fabricator
24	Schufab	Steel fabricators
25	Micro cars pvt ltd	Manufacturer of cars, SUVs and buses.
26	Oceanic engineering pvt ltd	Steel fabricators, ship repair, dynamic balancing
27	Toroid international pvt ltd	Manufacturer of transformers
28	Browns engineering pvt ltd	Manufacturer of battery, radiators
29	Belcey pvt ltd	Stainless steel fabricators
30	Everest industrial lanka pvt ltd	Manufacturer of coolers
31	Elcardo industries pvt ltd	Manufacturer of roller shutters, roofs