

3rd SOCIAL SERVICE RESEARCH NETWORK (SSRN) “Transforming Research into Solutions”

**Tuesday, 16 February 2016
Lecture Theatre, Level 2
Lifelong Learning Institute**

Getting Insights from Data

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School of Information Systems

Singapore Management University

3rd Social Service Research Network (SSRN)

Wonders of the Spreadsheet Tool for Data Management & Insights

Michelle CHEONG

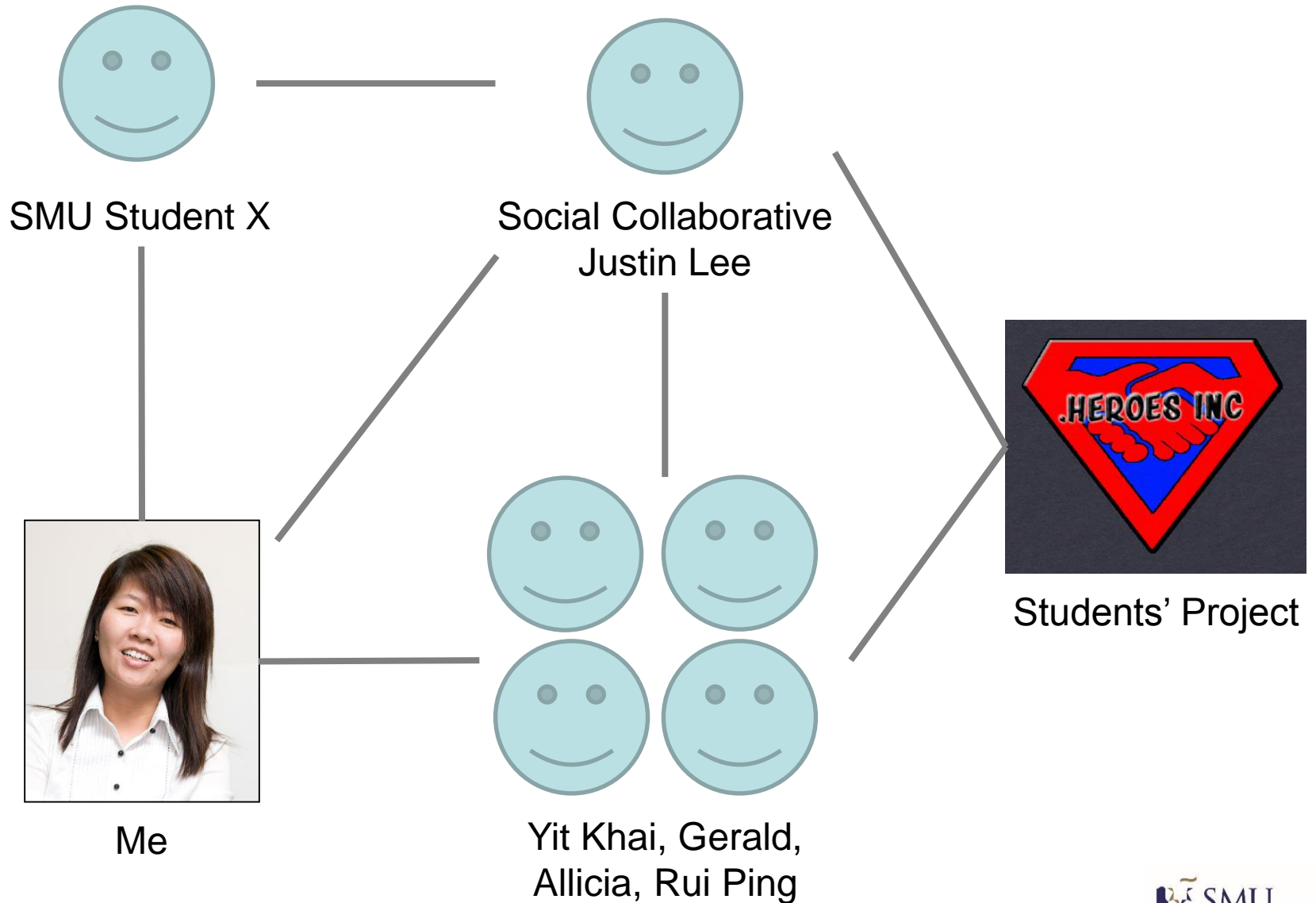
Associate Professor of Information Systems (Practice)
Associate Dean, SIS Postgraduate Professional Education

16 February 2016

Agenda

- How It All Started?
- Business Modeling with Spreadsheets
- Students' Projects
 - Social Collaborative
 - The Island Foundation
- Key Takeaways

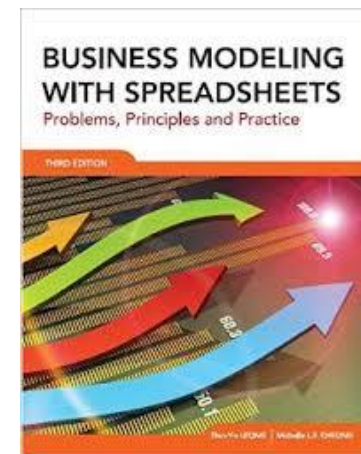
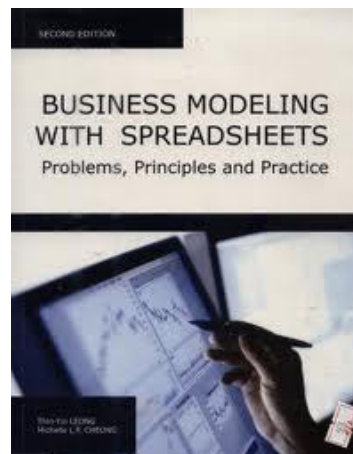
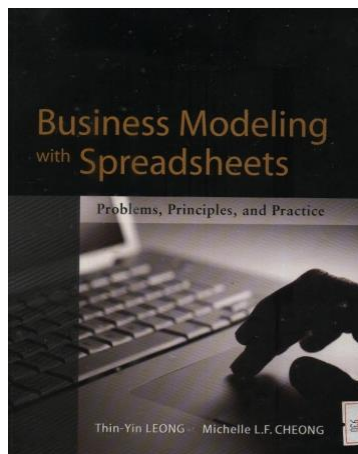
How It All Started?



Business Modeling with Spreadsheets



- Compulsory core course for SMU undergraduates, except Law & Accountancy (80% of Accountancy students still take it)
- At least 3 other SMU master programmes also take a variant of this course
- **Need to create spreadsheet models to solve business problems**



Student Project #1

"SOCIAL COLLABORATIVE"
NON-PROFIT ORGANIZATION
NETWORK OF SKILLED VOLUNTEERS
HELP VOLUNTARY-WELFARE
ORGANIZATIONS UTILIZE SKILL SETS



Problems Faced

**Lack of Proper
Volunteer & VWO
Management
System**

**Manual
Classifying &
Matching of Skill
Sets for VWOs**

**Lack of VWO
Engagement**

**Lack of Volunteer
Engagement**

Heroes Incs.

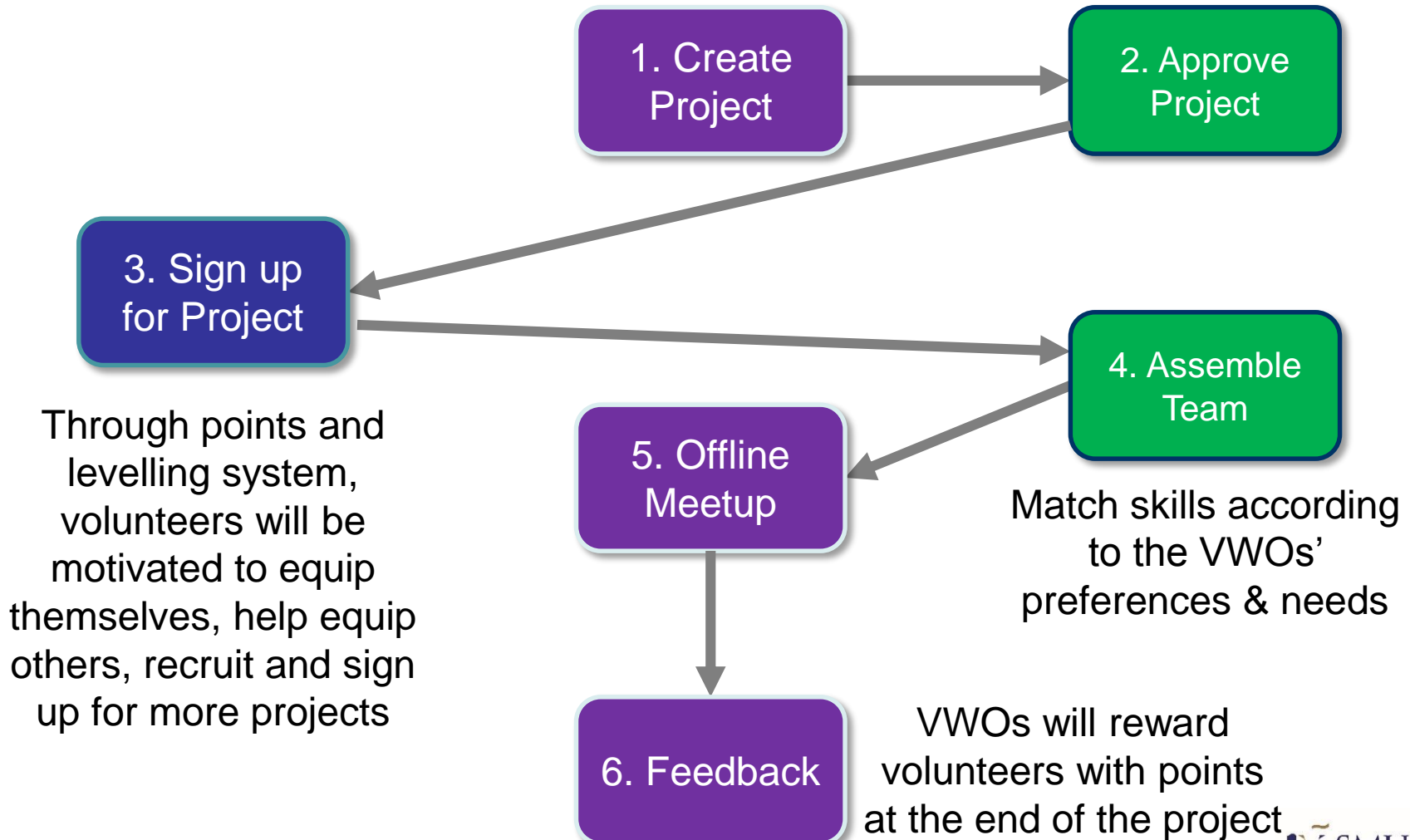
- Platform to integrate Volunteers, VWOs & SC



Volunteers

VWOs

Social Collaborative




Volunteers



Sign Up To Be A Hero

I Am A Hero

Name	<input type="text"/>	NRIC	<input type="text"/>
Date of Birth (DD/MM/YYYY)	<input type="text"/> <input type="text"/> <input type="text"/>	Gender	<input type="radio"/> Male <input type="radio"/> Female
Phone Number	<input type="text"/>	Email Address	<input type="text"/>
Receive Email Update	<input type="radio"/> Yes <input type="radio"/> No	Occupation	<input type="text"/>
Short Description of Experience	<input type="text"/>		
Referral Source	<input type="text"/>	<input type="button" value="Add"/>	<input type="text"/>
		<input type="button" value="Delete"/>	
Referrer's Username	<input type="text"/>		
Username	<input type="text"/>		
Password	<input type="text"/>		
	<input type="button" value="Next"/>	<input type="button" value="Cancel"/>	



- Personal information
- Existing skills
- Experience
- Type of clientele they are interested to work with
- Skill sets they are hoping to develop

VWOs

- Organization Name
- Contact Person details



Sign Up To Find Heroes

I Need Heroes

Organisation

Can't find your organisation??

Name NRIC

Gender Male Female


Date of Birth (DD/MM/YYYY)

Phone Email

Receive Email Update Yes No

Username

Password



Start a Mission

I Have a Mission

Project Name

Description of Project


From dd/mm/yyyy

To dd/mm/yyyy

Number of Heroes

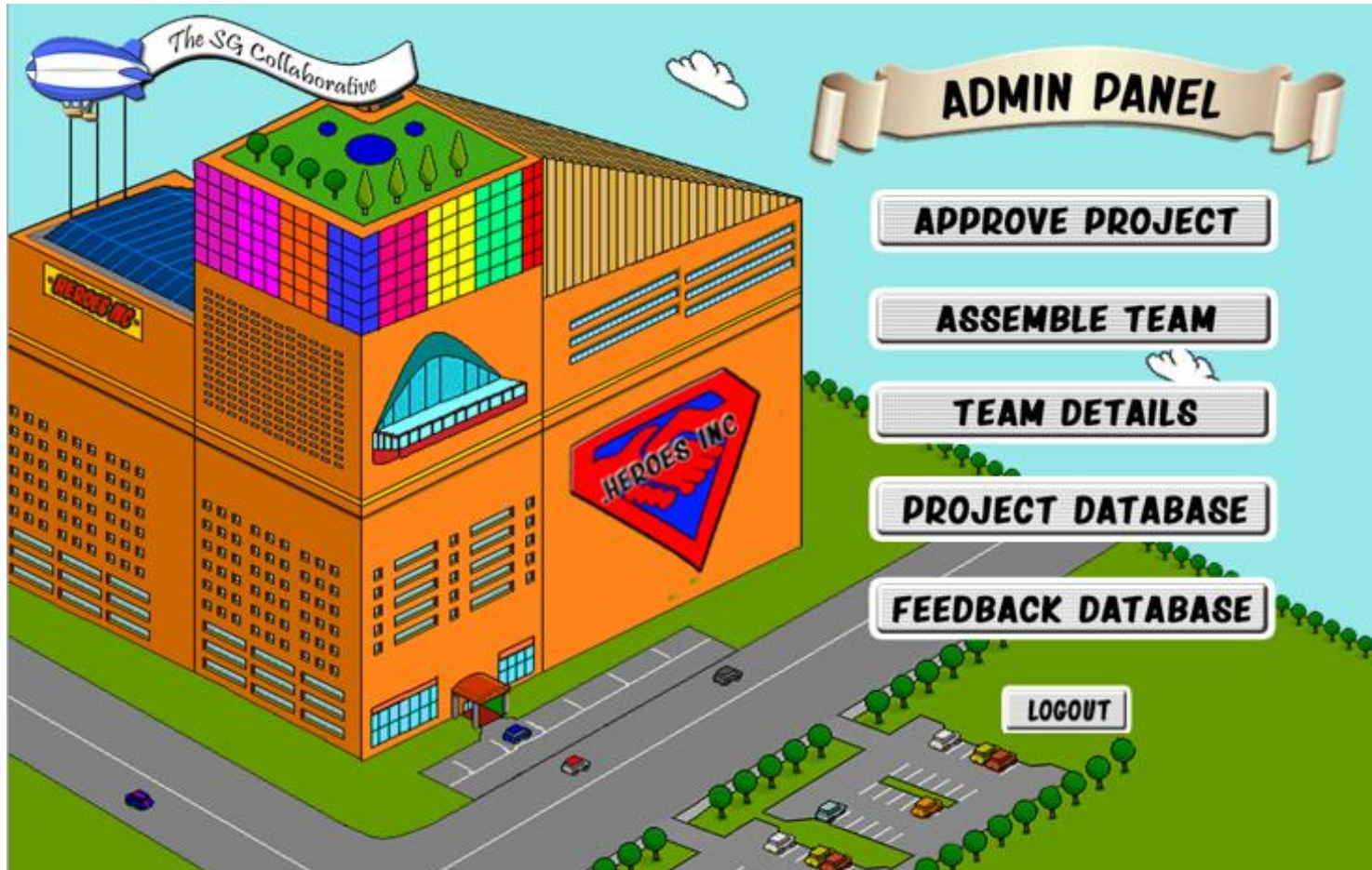
Skill Set Require

- Accounting
- Branding
- Business Development
- Coaching
- Communications
- Data Analysis
- Database Administration
- Digital Marketing
- Engineering
- Entrepreneurship



- Project name & description
- Date Range
- Number of volunteers
- Skill sets required

Social Collaborative



Social Collaborative – Assemble Team

Choose Project:

Project Name	Organisation	Created By	Write Up	Period From	Period To	Number of Heroes Needed	Time Stamp	Status
salvation1	Salvation Army	org1	save the earth	3/3/32	1/1/23	4	7/11/15	Approved

Volunteer Type: **GENERATE** **ADD TO PROJECT** **CONFIRM PROJECT** **BACK TO ADMIN PANEL**

Name	Volunteer Type	Date of Birth	Phone Number	Email Address	Receive Email Updates	Bio	Write Up	Occupation
<div style="background-color: yellow; padding: 5px;"> Volunteer Type display the candidates based on the type of volunteer </div>								

Signed Up
 Skilled
 Interested
 Assembled

- Signed-up : Volunteers who have signed up will be listed.
- Skilled : Volunteers with relevant skill sets for the project will be listed.
- Interested : Volunteers who are interested in developing the relevant skill sets for the project or are interested in working with the specific clientele type that the VWO is engaged in, will be listed.

Feedback – Gamification

Experience Point X Impact Variable + Leadership + Referral

	Difficulty		
	Easy	Moderate	Difficult
Skill Set Points	10	20	30
Experience Point	10	20	30
	Good	Very Good	Excellent
Impact Variable	1.00	1.50	2.00
	Yes	No	
Leadership Point	15	0	
Referral Point	5		

Level	Per Level	Cumulative
0	0	0
1	120	120
2	180	200
3	180	380
4	180	560
5	180	740
6	240	980
7	240	1220
8	240	1460
9	320	1780
10	480	2260

What Data Analysis can be done?

- Skill sets required by VWOs
- Skill sets supplied by volunteers
- Skill sets which volunteers would like to acquire

- Skill Gap Analysis → Recruit volunteers with specific skill sets

Student Project #2



Education &
Literacy

Health &
Nutrition

Village
Development

Problems Faced

Manual
Attendance
Tracking System

Messy Financials,
Budget &
Expenses

Class Attendance Taking System

THE ISLAND FOUNDATION				ATTENDANCE SHEET																	
Number of Students Present				12	0	11	16	15	11	11	16	11	13	11	16	15	11	10	16		
Number of Absentees				8	0	9	4	5	9	9	4	9	7	9	4	5	9	10	4		
Remarks				No Class																	
Further Information				Event 1																	
Week No.				1		2		3		4		5		6		7		8			
Date (dd-mmm)				6-Jan	10-Jan	13-Jan	17-Jan	20-Jan	24-Jan	27-Jan	31-Jan	3-Feb	7-Feb	10-Feb	14-Feb	17-Feb	21-Feb	24-Feb	28-Feb		
S/N	Name	Grade	Days Absent	Mon	Fri	Mon	Fri	Mon	Fri	Mon	Fri	Mon	Fri	Mon	Fri	Mon	Fri	Mon	Fri		
16	Student 16	4	25	1	NC	1	1	Excused	1	1	1	1	0	1	1	Excused	1	1	1		
17	Student 17	4	0	1	NC	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
18	Student 18	4	25	1	NC	1	1	0	1	1	1	1	0	1	1	0	1	1	1		
19	Student 19	6	15	1	NC	1	1	0	1	1	1	1	1	1	1	0	1	1	1		
20	Student 20	6	56	0	NC	0	1	1	0	1	1	0	1	0	1	1	0	1	1		
Present				12	N/A	11	16	15	11	11	16	11	13	11	16	15	11	10	16		
Total No.				20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20		
Percentage				60.0%	N/A	55.0%	80.0%	75.0%	55.0%	55.0%	80.0%	55.0%	65.0%	55.0%	80.0%	75.0%	55.0%	50.0%	80.0%		
Weekly Avg.				60.0%		67.5%		65.0%		67.5%		60.0%		67.5%		65.0%		65.0%			

Number of Students Present				12	0	11
Number of Absentees				8	0	9
Remarks				No Class		
Further Information				Event 1		
Week No.				1		2
Date (dd-mmm)				6-Jan	10-Jan	13-Jan
S/N	Name	Grade	Days Absent	Mon	Fri	Mon
1	Student 1	1	56	1	NC	1
2	Student 2	1	34	1	1	0
3	Student 3	1	24	1	Excused	0
4	Student 4	1	36	0	NC	1

- Easy attendance taking for each student
- Immediate computation of attendance rate on each day at each center

Class Attendance Analysis



CLASS ATTENDANCE

Learning Centre: MALANG RAPAT Minimum Attendance: 75%
 Teacher: ARIES Total Number of Classes: 100
 Year: 2014

Month	January	February	March	April	May	June	July	August	September	October	November	December
No. of Classes	7	8	8	8	9	9	8	8	9	9	8	9
Monthly Average	65.71%	64.38%	67.50%	64.38%	63.89%	63.33%	65.00%	66.88%	67.22%	63.33%	65.00%	63.89%

S/N	Name	Grade	January	February	March	April	May	June	July	August	September	October	November	December
1	Student 1	1	57.14%	37.50%	50.00%	37.50%	44.44%	44.44%	50.00%	12.50%	55.56%	33.33%	50.00%	55.56%
2	Student 2	1	71.43%	62.50%	75.00%	62.50%	66.67%	55.56%	62.50%	75.00%	77.78%	66.67%	62.50%	55.56%
3	Student 3	1	71.43%	75.00%	87.50%	75.00%	77.78%	66.67%	75.00%	87.50%	77.78%	77.78%	75.00%	66.67%
4	Student 4	1	71.43%	62.50%	62.50%	62.50%	55.56%	66.67%	62.50%	62.50%	77.78%	55.56%	62.50%	66.67%
5	Student 5	1	42.86%	50.00%	50.00%	50.00%	44.44%	55.56%	50.00%	37.50%	55.56%	44.44%	50.00%	55.56%
6	Student 6	1	71.43%	75.00%	75.00%	75.00%	66.67%	77.78%	75.00%	75.00%	77.78%	66.67%	75.00%	77.78%
7	Student 7	1	28.57%	37.50%	37.50%	37.50%	33.33%	33.33%	37.50%	50.00%	22.22%	33.33%	37.50%	33.33%
8	Student 8	3	42.86%	37.50%	50.00%	37.50%	44.44%	33.33%	37.50%	37.50%	55.56%	44.44%	37.50%	33.33%
9	Student 9	3	71.43%	62.50%	75.00%	62.50%	66.67%	55.56%	62.50%	75.00%	77.78%	66.67%	62.50%	55.56%
10	Student 10	3	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
11	Student 11	3	71.43%	75.00%	75.00%	75.00%	66.67%	77.78%	75.00%	75.00%	77.78%	66.67%	75.00%	77.78%
12	Student 12	3	42.86%	50.00%	62.50%	50.00%	44.44%	44.44%	50.00%	62.50%	55.56%	44.44%	50.00%	44.44%
13	Student 13	3	57.14%	62.50%	50.00%	62.50%	66.67%	66.67%	62.50%	50.00%	44.44%	66.67%	62.50%	66.67%
14	Student 14	3	71.43%	75.00%	87.50%	75.00%	77.78%	66.67%	75.00%	87.50%	77.78%	77.78%	75.00%	66.67%
15	Student 15	4	42.86%	37.50%	50.00%	37.50%	33.33%	33.33%	37.50%	50.00%	55.56%	33.33%	37.50%	33.33%
16	Student 16	4	85.71%	75.00%	62.50%	75.00%	77.78%	77.78%	75.00%	75.00%	66.67%	77.78%	75.00%	77.78%
17	Student 17	4	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

For Each Center, Each Month, Each Student

Student Profile Analysis

Yearly analysis of each student's attendance record

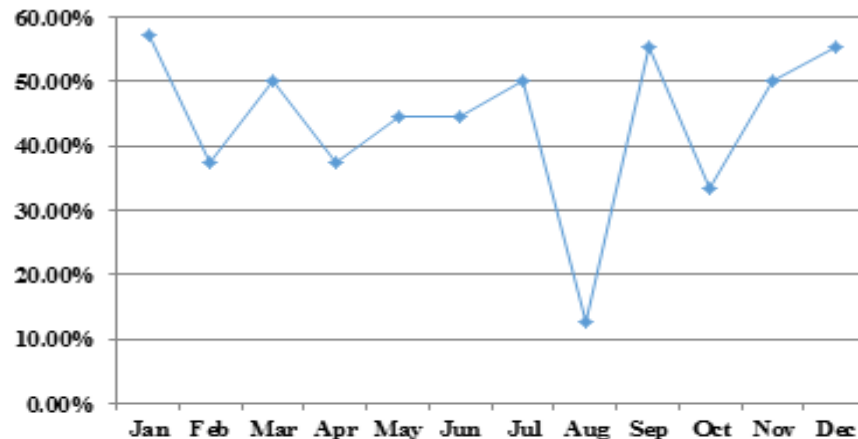


THE ISLAND
FOUNDATION

STUDENT PROFILE

Learning Centre: MALANG RAPAT
Teacher: ARIES
Year: 2014
Minimum Attendance: 75%
Total Number of Classes: 100

Student Name	Total No. of Classes	Present	Absent (Excused)	Absent (Not Excused)	Attendance Rate	Meet requirement
Student 1	100	44	0	56	44%	No



Center's Performance Analysis

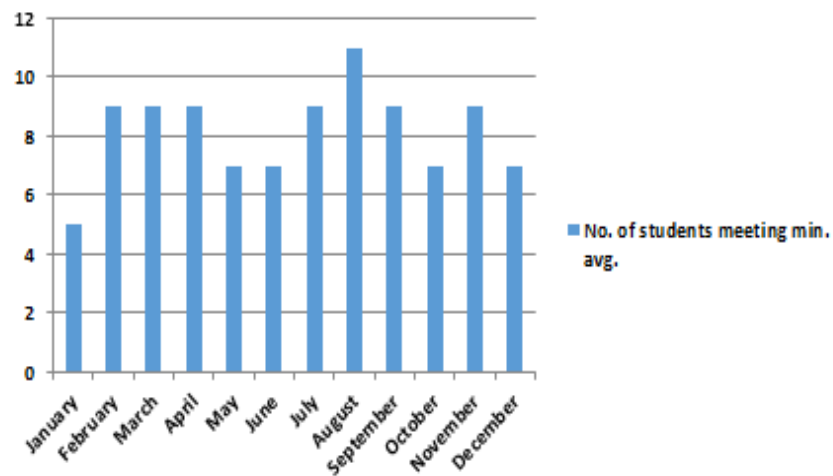
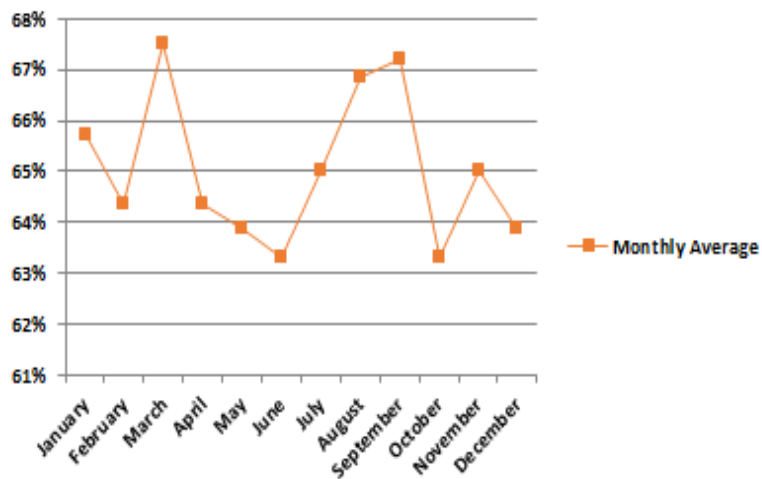


CENTRE ANALYSIS

Learning Centre: MALANG RAPAT Minimum Attendance: 75%
 Teacher: ARIES Total Number of Classes: 100
 Year: 2014

Month	January	February	March	April	May	June	July	August	September	October	November	December
Monthly Average	66%	64%	68%	64%	64%	63%	65%	67%	67%	63%	65%	64%

Month	January	February	March	April	May	June	July	August	September	October	November	December
No. of students meeting minimum attendance	5	9	9	9	7	7	9	11	9	7	9	7



Budget & Expenses Recording

Total Budget

Year

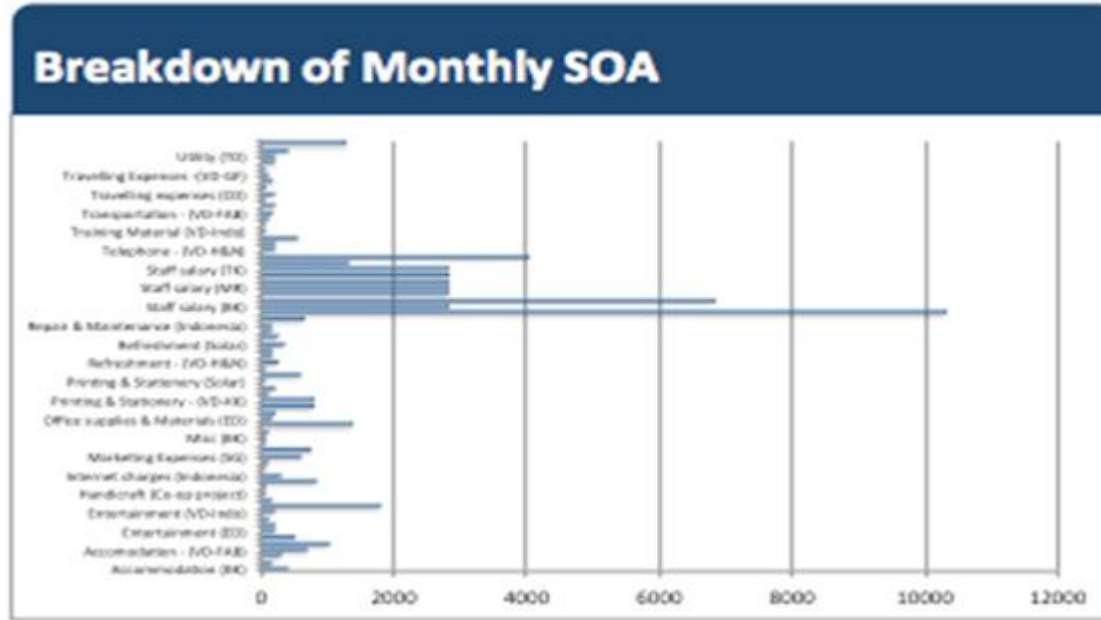
Category	Budget proportion (%)	Budget amount
Marine Conservation SG		0.00
Education Development SG		0.00
LC Teluk Bakau		0.00
LC Mapur Island		0.00
LC Bera Kit		0.00
LC Malang Rapat		0.00
LC Kawal		0.00
LC Pang Long		0.00
LC Teluk Dalam		0.00
Teacher Training		0.00
Curriculum		0.00
VD Indonesia		0.00
VD Kura Kura		0.00
VD Football Academy		0.00
VD Health And Nutrition		0.00
VD Gone Fishing		0.00
SOLAR Indonesia		0.00
Singapore Headquarters		0.00
Indonesia Headquarters		0.00
Total	0.00%	

Date	13/12/14
Code	B-102
Category	Education Development SG
Sub-category	Refreshment (ED)
Expense Item	1213
Invoice #	1312
Vendor	123213
Payment Method	Cash
Transaction #	
Amount (SGD)	1,234.00

Add Expense

Monthly & Yearly Expense Analysis

Monthly
Summary
of
Accounts



Yearly
Itemized
Expenses
and
Percentage
Under/Over
Spend



Key Takeaways

- Spreadsheet models have the ability to perform simple data recording and data analysis, to support decision making
- Spreadsheets should not be used as a database management system for large and fast growing data
- Spreadsheet models do not have the ability to perform predictions like in data analytics and machine learning
- It is able to satisfy most organizations' preliminary data analysis needs

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