

# IAB204 Assessment 2

## Group 29




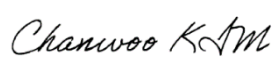
Semester 1, 2022

### Declaration

By Submitting this assignment, we are aware of the University rule that a student must not act in a manner which constitutes academic dishonesty as stated and explained in the QUT *Manual of Policies and Procedures*. We confirm that this work represents our team's effort, we have viewed the final version and does not contain plagiarized material.

Section	Marks	Type
Solution Approach	35	Individual
Solution Assessment	50	Group
Executive Summary, Introduction, Conclusion & Appendix	10	Group
Formatting, grammar, presentation, expression and overall professionalism	05	Group
<b>TOTAL:</b>	<b>100</b>	

### Declaration Template:

Name.	Student No.	Contributed Section (s)	Signature.
Cham Jazdan	N10542051	Individual section 2.2.1-2.2.7 All group sections	
Diether Pastulero	N10446346	Individual section 2.1 All group sections	
Dennis Edmunds	N5708338	Individual section 2.3.1-2.3.7 All group sections	
Chanwoo Kim	N10841091	Individual section 2.4.1-2.3.5 All group sections	

# Business Analysis Report

## SOLUTION APPROACH AND ASSESSMENT

JUNE 2022



LITTLE STARS  
NURSERY

Proudly presented by



**GROUP 29 CONSULTANTS**

## We've processed your Assignment extension request FORM-AEX-135671

N

no-reply@qut.edu.au  
To: Dennis Edmunds

Fri 10/06/2022 10:06



Hi Dennis,

Thank you for your assignment extension request **(FORM-AEX-135671)**.

We have approved your request and the due date for your assignment **Assessment Task 2**, for unit IAB204 has been extended by 48 hours from the original due date. If your unit outline does not specify that your assignment is eligible for an extension, this confirmation email is not valid and unless you submit by the original due date, the late assessment policy will apply.


You are responsible for ensuring that this assignment is eligible for extension before submitting it after the original due date. Check your [unit outline](#) for eligibility.


As you indicated this is a group assignment, you are also responsible for informing other members of your group of this extension.

Be aware that a copy of this email is kept on file. You should not alter this email in any way. Email notifications that have been altered or differ in any way from the original may result in an allegation of student misconduct as set out in the [Student Code of Conduct](#).

**Need extra support?** You can access free, confidential [counselling with qualified professionals](#). We also offer [planning and support if you have a disability, injury or health condition](#) that affects your ability to study. If you are struggling to meet your university commitments, [academic support](#) is also available.

**Have a question?** You can contact us by email or phone. We're also available to help you on campus or via online chat. Visit the [HiQ website](#) for our contact details and opening hours.

 **Email us**

 **+61 7 3138 2000**

HiQ is your place to go for **student services, support** and **general enquiries**: [qut.to/abouthiq](mailto:qut.to/abouthiq)

hi, how can we help you?

You have received this email because you have submitted an assignment extension request. View our [Privacy and Security statement](#).

Ref ID: 5708338 FORM-AEX-135671

Page 3 of 63

## Executive Summary

This report shall serve as a follow up document to the original report (submitted May 2022) with the aim to provide further detail and depth of clarify around the digital transformation solutions recommended by Group 29 Consultants to Little Stars Group.

The information and recommendations detailed within the scope of this report shall seek to provide a depth of clarity to as many of the solution details as possible, and with use of data modelling collected in early research during report 1, clearly and definitively provide a range of options for Little Stars Group to make the best project choice in the best interest of the current and future goals of the business.

The intention of this document, research outcomes, and recommendations for the project are of importance to the project sponsors, CEO, and management team so as to fully understand the circumstances around the project, and with all of the necessary information available to select the best digital solution.

With the overall aims to increase efficiency, save costs, while also increasing both staff job satisfaction and parent / customer satisfaction, this report shall seek to recommend a range of solutions to bringing Little Stars Group into line and in some cases, exceeding offerings from competitors, changing Little Stars market position within the industry.

On behalf of Group 29 consultants, we thank you for your time in reviewing the following report, and we are confident that the following will provide all the required information to suit your business needs.

## Table of Contents

Executive Summary .....	4
1 Introduction .....	9
2 Solution Approach and Ranking Solution Approach.....	10
2.1 Student's Special Arrangements - Diether Pastulero .....	10
2.1.1 Possible Solutions.....	10
2.2 Staff Leave Management Process – Cham Jazdan .....	18
2.2.1 Solution Approach.....	18
2.2.2 Solution Approach Summary.....	20
2.2.3 Ranked Solution Approach – Solution Assessment & Feasibility Analysis .....	20
2.2.4 Acceptance and Evaluation Criteria.....	21
2.2.5 Assumptions & Constraints .....	23
2.2.6 Weighted Solution Comparison.....	24
2.2.7 Section Summary .....	24
2.3 Inventory Management Process - Dennis Edmunds.....	25
2.3.1 Solution Approach.....	25
2.3.2 Solution Approach summary .....	27
2.3.3 Ranked Solution Approach - Solution Assessment and Feasibility Analysis.....	27
2.3.4 Inventory Management Process – Acceptance and Evaluation Criteria .....	28
2.3.5 Inventory Management Process – Assumptions and Constraints.....	30
2.3.6 Inventory Management Process – Weighted Solution Comparison .....	31
2.3.7 Inventory Management Process – Summary of ranked solution .....	31
2.4 Staff Record Management Process - Chanwoo Kim.....	32
2.4.1 Sum Up .....	34
2.4.2 Ranked Solution Approach - Solution Assessment and Feasibility Analysis.....	34
2.4.3 Assumptions and Constraints .....	35
2.4.4 Weighted Solution Comparison.....	38
2.4.5 Summary of ranked solution .....	38
3 Solution Assessment .....	38
3.1 Final Solution.....	38
3.1.1 Analysis.....	38
3.1.2 Results .....	38
3.1.3 Recommendations.....	39
3.2 Solution Scope .....	39
3.2.1 Assumptions & Constraints .....	39

3.2.2	Project Context.....	40
3.2.3	New Business Capabilities .....	40
3.2.4	Project Dependencies .....	40
3.2.5	Implementation Approach .....	40
3.3	Business case .....	41
3.3.1	Cash Flow .....	42
3.4	Allocate Requirements .....	47
3.5	Organisational readiness.....	48
3.5.1	Current situation .....	48
3.5.2	Desired situation.....	48
3.5.3	Project Impact (if no actions taken).....	48
3.5.4	Analysis of forces .....	49
3.5.5	Assessment of change viability .....	49
3.5.6	Options for decreasing the strength of opposing forces .....	50
3.5.7	Organisational Readiness Summary (Go or No-Go).....	50
3.6	Transition Requirements .....	51
3.6.1	Project urgency.....	56
3.6.2	Identify coalition and a project guiding team.....	56
3.6.3	Overall project vision and strategy for change.....	57
3.6.4	Communicate the vision for understanding and buy-in .....	57
3.6.5	Remove obstacles and implore stakeholders / others to act.....	58
3.6.6	Create short term wins .....	58
3.6.7	Building upon change .....	59
3.6.8	Anchoring change in the businesses culture (creation of a new culture). .....	60
4	Conclusion .....	61
5	References .....	62
6	Appendices .....	63

## Table of Tables

Table 1 - Students' Special Arrangements Solution Requirements .....	10
Table 2 - Students Special Arrangements - General Income/ Expenses .....	11
Table 3 - Students' Special Arrangement - In-House advantages VS Disadvantages .....	11
Table 4 - Students' Special Arrangement - In-Hose Developmental & Operational Costs .....	12
Table 5 - Students' Special Arrangement - In-House Feasibility Factors.....	13
Table 6 - Students' Special Arrangement - Costs Sources .....	13
Table 7- Students' Special Arrangement - Cloud Solution Advantages VS Disadvantages ...	14
Table 8 - Students' Special Arrangement - Cloud Options Prices .....	14

Table 9 - Students' Special Arrangement - Cloud Approach Developmental & Operational Costs .....	14
Table 10 - Students' Special Arrangement - Cloud Approach Feasibility Factors.....	15
Table 11 - Students' Special Arrangement - COTS Approach Advantages VS Disadvantages	15
Table 12 - Students' Special Arrangement - COTS Approach Developmental & Operational Costs .....	16
Table 13 - Students' Special Arrangement - COTS Feasibility Factors .....	16
Table 14 - Students' Special Arrangement - Do Nothing Approach Advantages VS Disadvantages.....	17
Table 15 - Students' Special Arrangement - Do Nothing Feasibility Factors .....	17
Table 16 - Students' Special Arrangement - Approaches Ranked against Development & Operational Costs.....	17
Table 17 - Staff Leave Management Process - Outsourcing Approach Advantages VS Disadvantages.....	18
Table 18 - Staff Leave Management Process - In-House Approach Advantages VS Disadvantages.....	19
Table 19 - Staff Leave Management Process - COTS Approach Advantages VS Disadvantages .....	19
Table 20 - Staff Leave Management Process - Do Nothing Approach Advantages VS Disadvantages.....	20
Table 21 - Staff Leave Management Process - Solution Approaches Ranked (Using traffic light format) .....	20
Table 22 - Staff Leave Management Process - Requirement Traceability Matrix (Retrieved from Assessment 1) .....	21
Table 23 - Staff Leave Management Process - Acceptance & Evaluation Criteria.....	22
Table 24 - Staff Leave Management Process - Forced Pair Analysis .....	22
Table 25 - Staff Leave Management Process - Approaches Weighting Against Criteria.....	23
Table 26 - Staff Leave Management Process - Assumptions .....	24
Table 27- Staff Leave Management Process - Constraints.....	24
Table 28 - Staff Leave Management Process - Weighted Solution Comparison .....	24
Table 29- Inventory Management Process, Outsourcing Solution .....	25
Table 30 - Inventory Management Process, COTS Solution.....	25
Table 31- Inventory Management Process, In-House Development Solution .....	26
Table 32- Inventory Management Process, Hybrid (Mix) Solution.....	26
Table 33- Inventory Management Process, 'Do Nothing' option.....	26
Table 34- Solution approach review (traffic light format) .....	27
Table 35- Inventory Management Process Requirement Traceability Matrix (from Little Stars Business Analysis Report) .....	28
Table 36- Inventory Management Process Functionality Sets.....	28
Table 37- Inventory Management Process Weighted Average .....	29
Table 38- Inventory Management Process Weighted Comparison, Solution Requirements..	29
Table 39 - Assumptions for Inventory Management Process .....	30
Table 40 - Constraints for Inventory Management Process.....	30
Table 41 - Weighted Solution Comparison for Inventory Management Process.....	31
Table 42 -Staff Record Management Process - COTS Advantages VS Disadvantages.....	32
Table 43 -Staff Record Management Process - Outsourcing Advantages VS Disadvantages	33
Table 44 -Staff Record Management Process - In-House Advantages VS Disadvantages .....	33
Table 45 -Staff Record Management Process - Do Nothing Advantages VS Disadvantages .	34

Table 46 -Staff Record Management Process - Approaches Ranking Against Feasibility Factors .....	34
Table 47 -Staff Record Management Process - Business Requirements .....	36
Table 48 -Staff Record Management Process - Forced Pair Analysis .....	36
Table 49 -Staff Record Management Process - Solutions Ranking .....	37
Table 50 -Staff Record Management Process - Assumptions .....	37
Table 51 -Staff Record Management Process - Constraints.....	37
Table 52 -Staff Record Management Process - Weighted Solution Comparison .....	38
Table 53 - Final Solutions Assumptions & Constraints .....	40
Table 54 - Implementation Timeline.....	41
Table 55 - Business Revenues.....	42
Table 56 - Wages .....	43
Table 57 - Operating Costs.....	43
Table 58 - Estimated Net Profit.....	43
Table 59 - Project Costs.....	44
Table 60 - Operational Costs.....	44
Table 61 - Benefit Effectiveness .....	44
Table 62 - Net Present Value .....	45
Table 63 - Payback Period.....	45
Table 64 - Return On Investment (ROI) .....	45
Table 65 - Internal Rate of Returns .....	46
Table 66 - Business Requirements Against Solutions Components .....	47

## Table of Figures

Figure 1 - Business Goals & Objectives (Retrieved from assessment 1).....	9
Figure 2 - Force Field Analysis - Digital Transformation .....	49
Figure - Level 0 Data Flow Diagram (Conceptual) .....	51
Figure - Little Stars Group Timeline of works as per (proposed) .....	53
Figure - Little Stars Business Organisational Chart / Hierarchy .....	54
Figure - Proposed Org chart.....	54
Figure - Kotter's Change Model example .....	55



## 1 Introduction

Welcome to the Business Analysis Report for the Little Stars Group. Within the scope of this document, Group 29 Consultants will continue to detail the results of the Business Analysis conducted on the Little Stars Group.

Within the last report, information gathered, and subsequent stakeholder and requirements analysis indicated Little Stars Group to be suffering from issues of business efficiency across all of its operations. From the data collected and analysis conducted, this had been found to be due to the group using outdated systems causing a large quantity of additional time and resources to be committed into administering these systems across all areas of the business. The issues identified may be referred to from the previous report for more detailed information.

Elicitation from the previous report highlighted the business goals, which are as detailed below:

Goal	Objectives
Increase employees' morale by decreasing 45% of their workload within the next 18 months.	Reduce the use of paper-based forms by digitalising 80% of the forms by the end of 2023.
	Standardise the communication between the departments within Little Stars by using an online platform to cover 75% of the communication by the end of 2022.
Increase parents' satisfaction by 90% and retain 20% more customers within the next 18 months.	Allow for a wider choice of payments, to cover Cash and Bank Transfer payments by December 2022.
	Standardise a learning management system across all Little Stars branches by the end of 2023.
Reduce processes inefficiency within Little Stars by digitalising the system by the end of 2023.	Move 300 employees' records into a database by September 2022
	Minimise the HR department workload by developing a HR management system by June 2023.

Figure 1 - Business Goals & Objectives (Retrieved from assessment 1)

Using the data and analysis conducted within the first report to Little Stars Group, Group 29 Consultants will elaborate on the information provided, and using a combination of different analysis and modelling methods, will conduct a review of solution approaches, and review 4 or more potential options by means of analysis of technical, operational and schedule feasibility factors.

Group 29 consultants will also provide this solution by means of a ranked solution approach, where solutions will be ranked by advanced methods on the criteria provided.

## 2 Solution Approach and Ranking Solution Approach

For a solid range of potential project outcomes and options, four (or more) potential options were identified for each process, and assessed by using technical, operational, and schedule feasibility factors. These factors form the basis of the solution approach which have been presented by Group 29 consultants within the following section.

Please note: For the purpose of this report, only the 4 processes highlighted within the initial report have been included within the planned project scope.

These 4 processes included in this report are:

- *Student's Special Arrangement Process*
- *Staff Leave Management Process*
- *Staff Record Management Process*
- *Inventory Management Process*

These processes in the organisation have been discussed with key stakeholders and sponsors, and their review and transformation shall represent the greatest value to the client. Other processes identified during the initial research phase of this report have been noted and may form the focus of following projects or iterations of this project, and as such are not included within the scope of this report.

Group 29's Business Analysts have conducted analysis of different approaches to the project which have been detailed within the following sections:

### 2.1 Student's Special Arrangements - Diether Pastulero

Requirements	
<b>M</b>	Requests must be able to be updated through a device
<b>M</b>	The system must be able to notify new requests and updates to the staff's devices
<b>M</b>	All medications must be labelled with a child's name to be found easier.
<b>S</b>	The requests database must be able to be filtered.
<b>S</b>	Temporarily requests shall be marked by the room leader upon completion.
<b>S</b>	Staffs could update the records but must be approved the room leader.
<b>M</b>	The special request forms shall be digitally stored and encrypted using AES-256 (Advanced Encryption Standard)
<b>M</b>	The system shall have an uptime of 99%
<b>S</b>	The medications are labelled correctly and readable
<b>M</b>	Submission of the request shall be received by the system with a 99% success rate.
<b>M</b>	The system shall give all results corresponding to the filter 99% of the time.

Table 1 - Students' Special Arrangements Solution Requirements

#### 2.1.1 Possible Solutions

Assumptions and constraints

- High quality nursery facilities are way less than the kindergarten facilities in terms of capacity. Using 64 as its divisible by 8 which is the maximum capacity for children at birth to 2 years. (HPW, 2021)

- Using the 175 as an average for the kindergarten capacity per branch so a total of 239 children that comes every day at each branch. With a 5% occupancy down per month, it is 227 children per day in each branch. (Early Years Research, 2021)
- Average day cost of \$118.95 per child (Care for kids, 2022)
- Average \$3930 per month for childcare workers, 60 worker per branch. (Indeed, 2022)
- That parents leaves their child at day care without fail in a working day. There are 260 working days in 2022, which leaves us with 21.67 days on average per month. (CRM, 2022)

Estimated General Income/Expenses				
Name	+	-	Total	
Childcare	\$ 2,925,628.78			
Salaries		\$ 1,179,000.00		
Food		\$ 49,190.90		
Misc. (Rent, Stationeries, Other operating expense, Licenses )		\$ 300,000.00		
Total	\$ 2,925,628.78	\$ 1,528,190.90	\$	1,397,437.88

Table 2 - Students Special Arrangements - General Income/ Expenses

### Details

- Table created using the data found the in assumption
- Estimated and simplistic monthly profit/loss.
- The organisation is estimated to be making 1.4m monthly outside of unexpected cost.

### In-House Infrastructure

Advantages	Disadvantages
Control of all data and hardware	Server problems being fixed quickly depends on the knowledge of the maintainer
Security of the data as the business know where data are kept.	New employees may not necessarily know enough to deal with the problems as the system may be different than what they're used to.
Only need to maintain the servers after the initial expenses	Physical infrastructures are needed
Server problems can be managed quickly by the employees	Continuous growth of the business may require continuous upgrade of the servers which may need more physical space.
Can deploy in-house cloud.	

Table 3 - Students' Special Arrangement - In-House advantages VS Disadvantages

Developmental Cost	Name	Qt	Estimated Cost
Hardware	Hard Drives - 16GB	60	32400
	SSDs	12	3492
	Business Grade Router		57340
Software	Transitioning Paper to Digital records		20000
Personnel	Retraining employees	300	375600
<b>Total</b>			<b>488832</b>

Operational Cost	Name	Qt	Estimated Cost
Personnel	IT experts	5	33660
Software	Microsoft Office 365 (monthly)	300	15660
	Cisco AnyConnect VPN	300	
<b>Total</b>			<b>49320</b>

Table 4 - Students' Special Arrangement - In-House Developmental &amp; Operational Costs

Feasibilities	Explanation
<b>Time Frame</b>	At least 8 months, 12 months max after the IT experts are hired. Setting up the server and software should only take 2-3 months due to the small size of the server. However, the database analyst needs to create a schema appropriate for the data that will be migrated digitally which could take 3-4 months.
<b>Business Needs Met</b>	This solution will provide the digital system the organisation needs.
<b>Organisation Readiness</b>	When the system is implemented, it'll rollout to one branch and will slowly rollout to other branches as the system is deemed stable and reliable. The branch with majority of younger employees will be chosen as the first testers as they are expected to be the most technology literate. The parents will be able to use an electronic form linked to the organisation to submit requests for their child. Most of the organisation should not be having trouble with the new system as it's something that they would've used at some point.
<b>Non-functional Requirements met?</b>	With this option, security depends on the knowledge and expertise of the people that will be hired. As the organisation owns the hardware, the reliability of the system and its maintainability will also depend on personnel.
<b>Fundable?</b>	The expected cost of this solution is a third of what the organisation can make in a month.

<b>Technology and Skills</b>	The technology exists for this solution. The quality of the solution depends on the skills of the IT experts hired.
<b>Compatibility with existing infrastructure &amp; interfaces</b>	Not very compatible to existing physical infrastructure as all special requests are processed through paper form

Table 5 - Students' Special Arrangement - In-House Feasibility Factors

Name	Cost Sources
<b>Retraining Cost</b>	<a href="https://www.indeed.com/career-advice/career-development/cost-to-train-new-employee">https://www.indeed.com/career-advice/career-development/cost-to-train-new-employee</a>
<b>Front-End Software</b>	<a href="https://www.microsoft.com/en-au/microsoft-365/compare-microsoft-365-enterprise-plans">https://www.microsoft.com/en-au/microsoft-365/compare-microsoft-365-enterprise-plans</a>
<b>Server Hardware</b>	
<b>Router</b>	<a href="https://itprice.com/cisco/asa5545vpn-pm1kk9.html">https://itprice.com/cisco/asa5545vpn-pm1kk9.html</a>
<b>SSD</b>	<a href="https://www.amazon.com.au/dp/B07MFZX1B?tag=pcppau-22&amp;linkCode=ogi&amp;th=1&amp;psc=1">https://www.amazon.com.au/dp/B07MFZX1B?tag=pcppau-22&amp;linkCode=ogi&amp;th=1&amp;psc=1</a>
<b>HDD</b>	<a href="https://au.pcpartpicker.com/product/RNkj4D/seagate-ironwolf-16-tb-35-7200rpm-internal-hard-drive-st16000vn001">https://au.pcpartpicker.com/product/RNkj4D/seagate-ironwolf-16-tb-35-7200rpm-internal-hard-drive-st16000vn001</a>
<b>IT Experts Salaries</b>	<a href="https://au.indeed.com/career/systems-administrator/salaries">https://au.indeed.com/career/systems-administrator/salaries</a>

Table 6 - Students' Special Arrangement - Costs Sources

### Cloud Option

Advantages	Disadvantages
Avoids hardware redundancy in the future as the provider deals with it.	Unknown security against the provider.
Elasticity of the workload can reduce the cost of the services.	Switching providers isn't easy due to the cost and availability of the services on the new provider.
Security against random intruders	Cost isn't stable and can swing up/down.
Depending on the type of service, it can be maintained by a few people. For example, SaaS, is very easy to manage as customers only need knowledge on software applications.	

## IAB204 Assessment 2 – Group 29

Table 7- Students' Special Arrangement - Cloud Solution Advantages VS Disadvantages

Virtual Machines	300 D2 v3 (2 vCPUs, 8 GB RAM) (3 year reserved), W...	Upfront: USD 0.00	Monthly: USD 11,116.49
Storage Accounts	Block Blob Storage, General Purpose V2, LRS Redun...	Upfront: USD 0.00	Monthly: USD 128.80
Azure SQL Database	Single Database, vCore, RA-GRS Backup Storage, G...	Upfront: USD 0.00	Monthly: USD 1,587.75
Azure Policy	Azure Policy guest configuration, 1 Servers	Upfront: USD 0.00	Monthly: USD 6.00
Estimated upfront cost		USD 0.00	
Estimated monthly cost		USD 12,839.04	

Table 8 - Students' Special Arrangement - Cloud Options Prices

Developmental Cost	Name	Qt	Estimated Cost
Software	Transitioning Paper to Digital records		20000
Personnel	Retraining employees	300	375600
Total			
			395600

Operational Cost	Name	Qt	Estimated Cost
Personnel	IT experts	5	33660
Software	Microsoft Office 365 (monthly)	300	15660
Cloud Infrastructure	<u>Converting USD TO AUD -&gt;</u>		18206.25
Total			
			67526.25

Table 9 - Students' Special Arrangement - Cloud Approach Developmental & Operational Costs

Feasibilities	Explanation
Time Frame	Around 5-6 months after IT experts are hired. The cloud infrastructure should up within the same month. The migration and training should finish within the remaining time.
Business Needs Met	This solution will provide the digital system the organisation needs. The scalability and elasticity of cloud means that the solution have a long-term effect on a growing company as it can also grow to keep up with the demand.
Organisation Readiness	Using the same approach as In-house solution. When the system is implemented, it'll rollout to one branch and will slowly rollout to other branches as the system is deemed stable and reliable. The branch with majority of younger

	employees will be chosen as the first testers as they are expected to be the most technology literate. The parents will be able to use an electronic form linked to the organisation to submit requests for their child. Most of the organisation should not be having trouble with the new system as it's something that they would've used at some point.
<b>Non-functional Requirements met?</b>	With this option, security is stronger against random intruders. However, this leaves data vulnerable to the provider if any future malicious intent occurs. Additionally, reliability also depends on the provider or the organisation's internet connection. The maintainability depends on personnel hired by the organisation, but it is easier to fix problems as they will have support available from the cloud provider.
<b>Fundable?</b>	After the initial retraining and migration cost. The monthly upkeep of the system is a miniscule amount compared to the monthly cashflow of the organisation.
<b>Technology and Skills</b>	The cloud infrastructure already exists. The setup of the solution relies on the knowledge of the IT experts hired.
<b>Compatibility with existing infrastructure &amp; interfaces</b>	Not very compatible to existing physical infrastructure. All special requests are done through paper form. Existing hardware such as laptops will be used.

Table 10 - Students' Special Arrangement - Cloud Approach Feasibility Factors

**COTS (Commercial Off-The-Shelf)**

Advantages	Disadvantages
Developmental and update costs of the product do not rely on the organisation	No control on the product can be detrimental to the future of the organisation
Quick to implement	Features needed by the organisation may not exist
Easy to find as it is generally used by other organisations.	Support of the product may disappear
	Might become overly reliant with the product

Table 11 - Students' Special Arrangement - COTS Approach Advantages VS Disadvantages

Developmental Cost	Name	Qt	Estimated Cost
Software	Transitioning Paper to Digital records		20000
Personnel	Retraining employees	300	375600
<b>Total</b>			<b>395600</b>

Operational Cost	Name	Qt	Estimated Cost
Personnel	IT experts	2	13463
Software	Microsoft Office 365 (monthly)	300	15660
<b>Total</b>			<b>29123</b>

Table 12 - Students' Special Arrangement - COTS Approach Developmental &amp; Operational Costs

Feasibilities	Explanation
<b>Time Frame</b>	Around 3 months after IT experts are hired. The migration and retraining should finish within the timeframe.
<b>Business Needs Met</b>	This solution will provide the digital system the organisation needs.
<b>Organisation Readiness</b>	Most of the organisation should not be having trouble with the new system as it's something that they would've used at some point.
<b>Non-functional Requirements met?</b>	Security measures are not met aside from the basic application security which is not enough for intruders with malicious intent. Reliability and maintainability will be sufficient as its lightweight but depends on the existing hardware specifications.
<b>Fundable?</b>	The cost of the solution is essentially a minor expense for the organisation.
<b>Technology and Skills</b>	The application suite already exists. The skills needed to maintain this solution is very basic and simple. The IT experts are there for setting enterprise accounts and such for the organisation. Afterwards, they are employed for future projects and help desk for the organisation.
<b>Compatibility with existing infrastructure &amp; interfaces</b>	Very compatible with exist infrastructure. This solution's purpose is to standardise the workflow for everyone.

Table 13 - Students' Special Arrangement - COTS Feasibility Factors

## Do nothing

Advantages	Disadvantages
The workflow will stay the same	Staff and parent's frustration will keep growing
Will not cost anything	Further growth of the organisation will overload the already heavy workload.
	Parents dissatisfaction will cost the organisation as they head over to other childcare centres



	Negativity of the business will possibly be revealed to the public which will negatively affect future clients and staffs.
--	--

Table 14 - Students' Special Arrangement - Do Nothing Approach Advantages VS Disadvantages

Feasibilities	Explanation
<b>Time Frame</b>	Nothing
<b>Business Needs Met</b>	None are met
<b>Organisation Readiness</b>	The organisation doesn't change at all
<b>Non-functional Requirements met?</b>	Secured due to physical filings. Reliability will stay the same which the caregivers will continue to forget special arrangements.
<b>Fundable?</b>	No cost
<b>Technology and Skills</b>	Stays the same
<b>Compatibility with existing infrastructure &amp; interfaces</b>	Stays the same

Table 15 - Students' Special Arrangement - Do Nothing Feasibility Factors

### Ranking Solutions – Simulation

Extracting the development cost and operation cost for each solution:

Solution	Development Cost	Operational Cost	Total
<b>In-house</b>	488832	49320	<b>538152</b>
<b>Cloud</b>	395600	67526.25	<b>463126.25</b>
<b>COTS</b>	395600	29123	<b>424723</b>
<b>Do nothing</b>	0	0	<b>0</b>

Table 16 - Students' Special Arrangement - Approaches Ranked against Development &amp; Operational Costs

From a glance, the winner seems to be to 'do nothing'. However, as we analysed the organisation found in our last report. We found that there was a negative environment on the current system which will stunt the growth of the organisation. As a result, this option should not be considered.

The cheapest solution between the other solutions is using COTS as it has the lowest operational cost. The problem that the organisation will face when using this solution is the longevity. Further growth of the organisation would eventually outpace the storages available from the application suites. It must be the priority of the business to make sure missing special arrangements will not happen again and this solution will eventually compromise that. The in-house solution will also face the same the problems as COTS although a bit slower. However, this solution gives a better control of the products and data of the business. Finally, the cloud option has the same development cost of COTS but has the highest operational cost amongst the other solutions. The advantage of this solution is the scalability and elasticity of the product. As the organisation expands and grows, this solution will be able to be configured to the accommodate the changes with less effort than the in-house solution which can redundancies on its hardware. The cloud approach should be chosen for organisation as it is better than other approaches listed.

## 2.2 Staff Leave Management Process – Cham Jazdan

### 2.2.1 Solution Approach

This section will present the analysis of 4 solution approaches, to determine which is the best approach to meet the business needs and goals for the new system of Staff leave management process.

The identified solution approaches are:

1. Outsourcing
2. In-house Development
3. Commercial Off The Shelf Software – COTS
4. Do Nothing

Each of the solutions will be discussed individually, considering their advantages, disadvantages and will be analysed against technical, operational & schedule feasibility factors. Finally, the solutions will be ranked to determine the best solution that will meet the business requirements for the Staff Leave Management Process.

#### Outsourcing

Advantages	Disadvantages
It can be cost-efficient (allows to find professionals with the required rate)	The business confidential data will be exposed externally (Security risk).
Allows the business to reach to wide range of professional	Outsourcing to a third party may be risky, as they might not deliver the business requirements in their solution.
Improves the relationship between the employees & the HR department (as the tasks are handled by a third party)	Potential risk with the third-party having many sub-contractors, and their focus will be divided onto many other projects than Little Star's.
It can improve business efficiency (supported by a third party 24/7)	Outsourcing solutions may encounter hidden costs with Out-of-scope requirements (They can be costly).

Table 17 - Staff Leave Management Process - Outsourcing Approach Advantages VS Disadvantages

Technically, the outsourcing solution approach will potentially work for the business, as it requires no business expertise to develop the solution.

Operationally, it will be a feasible approach for Little Stars, professionals can be sub-contracted to maintain the system.

However, it might be risky considering the schedule feasibility factor, as sub-contractors may have many other companies to work for, and they may have issues delivering the requirements within the required timeframe.

#### In-House

Advantages	Disadvantages
------------	---------------

<b>Ability to manage the team and the produced solution efficiently</b>	Lack of expertise (Existing staff may not have the required expertise to develop a solution)
<b>High control over the solution's functionality to match the business requirements</b>	Cost of labour may be increased
<b>Time-efficient, as the employees are used to collaborate within the business's atmosphere</b>	High costs of in-house professionals may be unnecessary
<b>Easier to integrate with other systems within the business</b>	Risk of delays in implementing the solution due to training and production.

Table 18 - Staff Leave Management Process - In-House Approach Advantages VS Disadvantages

Implementing an in-house solution at Little Stars can be a challenge to the business! Little Stars does not have an expert who can develop the system nor the ability to hire a specialist to develop, deploy and support the system, making it technically difficult to deploy an in-house solution.

Also, the schedule feasibility of developing an in-house solution is another challenge to Little Stars. Baselines may not be met due to training and development reasons.

However, from an operational feasibility point of view, the in-house solution can be the best fit for Little Stars for many reasons. The solution can be developed to meet the business requirements with the requested functionalities, nothing less or more. Also, since the solution will be delivered internally, it can be integrated with the other business systems.

## COTS

<b>Advantages</b>	<b>Disadvantages</b>
<b>Cost efficient (Cheaper than in-house or outsourcing)</b>	Difficult to find a solution that covers all the business requirements
<b>Development &amp; upgrade costs are handled by the owner of the software</b>	Support of the solution may be insufficient
<b>Offers more functionalities that can potentially save Little Stars employees' time</b>	Can be inflexible to change the solution to fit with the business needs
<b>Easier to train employees on the new software as the material is already developed by the software owner</b>	May encounter issues while integrating the solution with existing business systems

Table 19 - Staff Leave Management Process - COTS Approach Advantages VS Disadvantages

With COTS solutions, Little Stars staff do not need to acquire any technical knowledge or experience to use or maintain the solution, so it can be technically feasible.

From an operational feasibility perspective, the solution will deliver the functionalities that align with the business requirements for Staff Leave Management Process. In addition, it

may include other functionalities that can be used within Little Stars HR department and minimise their workload.

Moreover, from a schedule feasibility perspective, COTS solution can be implemented within a timeframe, as the solution already existed, and the business data are the only thing that needs to be added to the solution.

### Do Nothing

Advantages	Disadvantages
No deployment costs	Little to no improvement on employees' satisfaction
No need for a training, as the process already in-use	High risk of business goals and objectives not being achieved
No need to outsource to a third-party to meet the business requirements.	Business requirements will not be met

Table 20 - Staff Leave Management Process - Do Nothing Approach Advantages VS Disadvantages

With the Do-nothing approach, no changes to the current system will be implemented, which means there are no technical or operational factors that need to be covered. However, The Do-nothing approach does not meet the business requirements; hence there is a high risk of not achieving the business goals and objectives.

### 2.2.2 Solution Approach Summary

Using traffic light format, the table below ranks the solution approaches discussed in section 3.2.1, and provides an overview of each approach alongside each factor (technical, operational & schedule)

	Outsourcing	In-House	COTS	Do Nothing
Technical	Excellent	Poor	Excellent	Poor
Operations	Average	Average	Excellent	Poor
Schedule	Poor	Poor	Excellent	Poor

Table 21 -Staff Leave Management Process - Solution Approaches Ranked (Using traffic light format)

In conclusion, COTS solution provides the most suitable factors for Little Stars, as it provides technical support with no need to hire more staff internally, the functions needed to achieve project goals, and can be implemented within a fixed timeframe. However, further in-depth analysis will be conducted for each solution approach to select the most suitable approach for Little Stars.

### 2.2.3 Ranked Solution Approach – Solution Assessment & Feasibility Analysis

This section will assess the solutions' feasibility, and by conducting an in-depth analysis, it can be possible to measure how each solution approach aligns with Little Stars' capabilities.

The requirement Traceability Metrix below, which was developed for the previous report, presents the core functionalities of the desired solution for the Staff Leave Management Process, which also align with the business and stakeholders' requirements.

Based on the table below, acceptance and evaluation criteria will be identified to allow for in-depth analysis of the solution approaches and better ranking methods, all to reach the ultimate goal of determining which solution is the best fit for Little Stars, with the highest chance of success.

Requirement Traceability Matrix						
Business Requirements		Stakeholder Requirements		Functional Requirements		
BR ID	Business Requirement	SR ID	Stakeholder Requirement	FR ID	Functional Requirement	Priority
BR 1	Decrease 45% of the staff workload within the next 18 months.	SR 1	Access all colleagues' calendars to check their availability.	FR 1	The system shall display the staff calendar on request for other staff members to view in real-time	Should Have
		SR 4	Past and current forms to be saved on a cloud-based platform	FR 4	The system shall be secured with AES encryption algorithm.	Must Have
				FR 5	The system shall be maintained on a cloud-based platform	Must Have
BR 3	Digitalise the systems to reduce process inefficiency by the end of 2023.	SR 2	Track all current leave request forms status	FR 2	The system shall provide the HR officers the ability to track in-progress forms to follow up with the outstanding approver.	Must Have
		SR 3	Delegate approvals responsibility to other staff member	FR 3	The system shall provide HR officers the ability to delegate approvers' role to other staff member.	Must Have
		SR 6	Receive reminders about outstanding approvals	FR 6	The system shall send reminders to approvals with a list of outstanding approval requests every 3 business days	Should Have

Table 22 - Staff Leave Management Process - Requirement Traceability Matrix (Retrieved from Assessment 1)

#### 2.2.4 Acceptance and Evaluation Criteria

Priority	Criteria	Criteria Evaluation
Must Have	(A) FR4 - The system shall be secured with AES encryption algorithm.	Acceptance Criteria
Must Have	(B) FR5 - The system shall be maintained on a cloud-based platform	Acceptance Criteria
Must Have	(C) FR2 - The system shall provide the HR officers the ability to track in-progress forms to follow up with the outstanding approver.	Acceptance Criteria
Must Have	(D) FR3 - The system shall provide HR officers the ability to delegate approvers'	Acceptance Criteria
Should Have	(E) FR1 - The system shall display the staff calendar on request for other staff members to view in real-time	Evaluation Criteria

<b>Should Have</b>	<b>(F) FR6</b> - The system shall send reminders to approvers with a list of outstanding approval requests every 3 business days	<b>Evaluation Criteria</b>
--------------------	--	----------------------------

Table 23 - Staff Leave Management Process - Acceptance &amp; Evaluation Criteria

After identifying the criteria evaluation, conducting a forced pair analysis is possible to weigh the criteria against each other effectively. The table below presents the forced pair analysis, with a total score for each criterion.

Scale: 1 = Least important, 9 = Most important

	AES Encryption (A)	Cloud-based System (B)	Track in-progress Leave requests (C)	Delegate Approvers (D)	Display calendars in real-time (E)	Send Reminder to approvers (F)
AES Encryption (A)		4	5	4	3	2
Cloud-based System (B)	5		4	5	2	2
Track in-progress Leave requests (C)	4	5		4	3	4
Delegate Approvers (D)	4	4	5		2	3
Display calendars in real-time (E)	6	7	6	7		5
Send Reminder to approvers (F)	7	7	5	6	4	
Total Score	26	27	25	26	14	16

Table 24 - Staff Leave Management Process - Forced Pair Analysis

Now that each criterion has a weight, another ranking technique will be used. The table below illustrates comparisons between the weighting information and each solution approach to determine each approach's ability to meet the criteria.

	AES Encryption (A)  (W = 26)	Cloud - based System (B)  (W = 27)	Track in- progress Leave requests (C)  (W = 25)	Delegat e Approv ers (D)  (W = 26)	Display calend ars in real- time (E)  (W = 14)	Send Remind er to approv ers (F)  (W = 16)	Total Score
<b>Outsourci ng</b>	P	Y	Y	Y	P	Y	13+27+25+26+7+16 = <b>114</b>
<b>In-House Dev.</b>	Y	Y	Y	Y	Y	Y	26+27+25+26+14+16= <b>134</b>
<b>COTS</b>	Y	Y	Y	Y	Y	Y	26+27+25+26+14+16= <b>134</b>
<b>Do Nothing</b>	-	-	P	-	-	-	25/2 = <b>12.5</b>

Table 25 - Staff Leave Management Process - Approaches Weighting Against Criteria

**Key points:**

- *Weights: A = 26, B = 27, C = 25, D = 26, E = 14 & F = 16*
- *Outsourcing partially meeting A and E – gets half a point*
- *Do nothing, only partially meeting track in-progress requests, while it gets no points for A, B, D or F.*

**2.2.5 Assumptions & Constraints**

To further evaluate the approaches to decide which is the best fit for Little Stars, the tables below illustrate few assumptions and constraints have been identified, based on some research and industry knowledge.

Assumptions			
Solution	Assumptions	Assumed Amount	Comments
<b>General Assumptions</b>	Lifecycle (years)	1	
	Total Staff	300	
<b>Outsourcing</b>	Total Costs	\$180,000	(\$15,000 per month)
	Time estimation (weeks)	12	
<b>In-house</b>	Developer costs (hourly rate)	\$110	
	Development Hours	800	2 developers for 10 weeks
	Maintenance	80	Yearly
	Software packages	\$108,720	Microsoft 365 Business Premium
	Time Estimation (weeks)	10	
<b>COTS</b>	Subscription	\$54,600	(\$3.50 per user per week)
	Training	\$8,000	
	Time estimated (weeks)	8	
<b>Do Nothing</b>	HR Officer Salary	\$80,000	

	Time estimation (weeks)	(Not applicable)	
--	-------------------------	------------------	--

Table 26 - Staff Leave Management Process - Assumptions

Constraints	
<b>Budget</b>	\$150,000
<b>Implementation Timeframe</b>	8 Weeks

Table 27- Staff Leave Management Process - Constraints

### 2.2.6 Weighted Solution Comparison

The results from the above analysis are used to compare each of the approaches against the project constraints, budget & implementation time, as illustrated in the table below:

Solution	Score	Cost	Weeks	Over/Under Budget	Budget	Over/ Under Implementation Time	Total Cost
Outsourcing	114	\$180,000	12	-\$30,000	-2	-2	110
In-House	134	\$205,520	10	-\$55,520	-4	-1	129
<b>COTS</b>	<b>134</b>	<b>\$62,600</b>	<b>8</b>	<b>\$87,400</b>	<b>+6</b>	<b>0</b>	<b>148</b>
Do Nothing	12.5	\$80,000	-	\$70,000	+4	-	16.5

Table 28 - Staff Leave Management Process - Weighted Solution Comparison

-/+ 2 points for each \$30,000 over or under budget

-/+ 1 point for each 2 weeks over or under timeframe

### 2.2.7 Section Summary

Across all quantitative and qualitative analysis, ranking and criteria review, Commercial Off The Shelf (COTS) has been identified as the best solution for Staff Leave Management at Little Stars.

The approach meets the project requirements, as presented in the weighting comparison, it has a wide range of advantages that can benefit the HR department further at Little Stars, meets the acceptance & evaluation criteria of the project and fits the budget and timeframe which makes it ultimately the best fit for Little Stars HR Department.



## 2.3 Inventory Management Process - Dennis Edmunds

### 2.3.1 Solution Approach

In this section, 5 separate solution approaches have been analysed to determine how to meet either one or several of the business needs and goals for the transformation of the Inventory Management Process.

The following solutions identified for Little Stars Group Inventory Management Process are as follows:

1. Outsourcing / Subcontracting
2. COTS (“Commercial Off The Shelf” software applications)
3. Develop custom application in-house
4. Hybrid solution (Mix)
5. Do Nothing

Each of these solutions have been specified and analysed as a potential solution option in the following tables in this section. Following individual consideration factors of each solution (technical, operational and schedule feasibility factors), these solutions then will be ranked within this section 3.3 (See Ranking Solution Approach) of this report to determine the best solution for the Inventory Management Process.

#### Option 1: Outsourcing

Advantages	Disadvantages
Can be cheaper than in-house solution (cost efficient)	Contract variations out of scope may be (are) expensive
Can improve system / business efficiency (24/7 support)	Business IP and data exposed to external parties (security)
Can free up business resources (better core capability focus)	May be tacit knowledge or cultural communications barriers
Solution handled by professionals (offers expertise)	Agreement on contract scope may be lengthy
Latest, best technology focus from experts (no outdated practices)	The businesses support requests may not be high priority to the subcontractor/ Requests outside of scope may take longer to resolve

Table 29- Inventory Management Process, Outsourcing Solution

Outsourcing Inventory Management will be a technically and operationally easy solution for Little Stars Group, as outsourcing requires no in-house expertise in the business, and can be contracted on SLA or subcontract basis if or as required. There may be the potential of schedule feasibility being a negative factor if a long outsourcing timeline is specified by the contractor, which may cause conflicts with shareholder project timelines for completion.

#### Option 2: COTS (Commercial Off-The Shelf) solution

Advantages	Disadvantages
Cheaper / lower development cost than In-House solution	May not meet all scope requirements for project
Good for basic, standardised process	May be higher operating and training costs (annual subscriptions, new starters, new feature training for users)
Regular program and feature updates from vendor	Scalable licenses can be a higher first-cost
May have levels of customisation to suit requirements	Significant customisation may render the solution inappropriate / unable to apply vendor updates
Typically lots of training resources and support available	No dedicated support resource vs In-house solution.

Table 30 - Inventory Management Process, COTS Solution

Similar to outsourcing, little to no experience is needed by the group to utilise a COTS solution from a technical perspective. From an operations perspective, this solution may be managed by use of product support teams for the product selected, minimising the need for specific skills or roles in the organisation. This solution has high value in schedule feasibility as COTS is much faster deployment than other solutions, and has the potential to accelerate the timeline and meet or exceed the project KPIs in this area.

**Option 3: Development of In-House solution**

Advantages	Disadvantages
Custom solution can be developed to achieve exact scope requirements	Existing staff may not have the experience (additional staff or training)
High capability to update and change in line with new req's	High development cost vs. COTS or Outsource
Can be easier to integrate to separate business systems	May not be compatible with any new systems or legislation
Ability to implement high levels of quality control	Potentially higher first cost, operating cost and life cycle cost
Can be matched to suit company culture and needs well	High level of in-house technical skill needed to implement and maintain, which may be unnecessary and expensive

*Table 31- Inventory Management Process, In-House Development Solution*

Within the context of the process of Inventory Management, it seems unlikely that it would be feasible to employ a specialist solely to support the single process from an operational (and financial) perspective. Although strong solution and benefits for specific, direct support from a technical perspective, this may not be feasible for Little Stars to deliver due to higher cost. The schedule feasibility of In-House solution is a big disadvantage due to the potential for extended timelines to meet the project brief.

**Option 4: Hybrid solution (Mix)**

Advantages	Disadvantages
Can utilise a combination of all other options	May be difficult to implement
Provides flexible solution for achieving problem / scope	Updating solution may not be possible between systems
May be easier to implement	Could miss requirements between separate systems
May allow use of existing talent and expertise in organisation to implement and manage / administer	It may be difficult to train staff in administration or use of a Hybrid solution if too diverse
	Training of staff more difficult than with COTS or outsource solution

*Table 32- Inventory Management Process, Hybrid (Mix) Solution*

From a technical and operational perspective, the mix / hybrid solution may require additional training or upskilling of existing employees, which will almost certainly add more operational costs compared to a COTS, or outsourcing solution. By utilising a mix of solutions, a hybrid solution may be a viable solution from a schedule perspective depending on the adequate scoping and timelining of the project and management of iterations of deployment.

**Option 5: Do nothing (Utilise existing capabilities)**

Advantages	Disadvantages
Low / no first cost	No changes will occur if no changes are implemented
Utilises existing skills base in organisation	Business goals may take longer, or risk not being achieved
Processes are already known, little to no training may be required to implement	May not meet organisation needs or legislative requirements
No outsourcing to external vendors to achieve scope	May be detrimental to company culture or morale
	Efficiency loss and high long-term operating cost from not taking advantage of latest technologies

*Table 33- Inventory Management Process, 'Do Nothing' option*

The 'do nothing' scenario requires no additional resources from a technical or operational perspective, but would be a negative to the business for many reasons. This should only be considered as an option if all other alternatives are found to be non-viable. As an option, it is of course easily managed from a timeline or schedule feasibility perspective, but as a solution, the 'do nothing' option does not meet any project KPIs or goals, or provide any tangible advantage, benefit or change to the organisation.

To assist in understanding the strengths and weaknesses of the different solution approaches, we have made a comparison chart across the options makes it an easy process to review the offerings side-by-side.

### 2.3.2 Solution Approach summary

Upon individual analysis of each solution approach to review each based on technical, operational and schedule feasibility factors, we can now draw comparison between the solution approaches to assess their overall feasibility, or ability to suit the application (the Inventory Management Process).

The following table has been developed to provide a brief side-by-side review of the different solution approaches. This is a simplified table to provide a clear, but brief review of the different factors for each approach side by side. The table has been created utilising a 'traffic light' format similar to many business reports for ease of explanation for the client. The rankings for the table are as below:

**Rankings:**

- Good** Well suited to satisfying functional requirements
- Fair** Partially meets requirements or may present difficulties
- Poor** Solution adds no value, or does not meet requirements

	Outsource	In-House Dev.	COTS	Hybrid	Do Nothing
<b>Technical</b>	Good	Good	Good	Fair	Poor
<b>Operational</b>	Good	Fair	Good	Poor	Poor
<b>Schedule</b>	Fair	Poor	Good	Good	Poor

Table 34- Solution approach review (traffic light format)

From initial review of the different solution approaches chosen for analysis, the most suitable appears to be the COTS (Commercial Off The Shelf) solution due to its ability to provide outsourced technical support, the minimal requirements for current operational staff to hold a high level of competency and training, and also the short time frame in which many COTS solutions may be deployed and tested ready for use.

This does not serve as the sole point of feasibility analysis, but the insights provided do indicate that simply because the COTS approach is a widely available solution does not discount its value to Little Stars Group for meeting functional requirements and KPIs for the project.

In the following section, these solution approaches will be formally ranked using robust analysis methods to determine the most appropriate solution as part of the overall solution in the report.

### 2.3.3 Ranked Solution Approach - Solution Assessment and Feasibility Analysis

Following the analysis of the solutions presented for the Inventory Management Process, the next step shall be to determine the means by which a solution may be delivered. We will assess whether the organisation is capable of effectively implementing and utilising each solution. This information is used to determine solution ranking based on its feasibility, which will be evaluated overall in this section for the Inventory Management process.

To assist in clarification of selection criteria, the following requirement traceability matrix has been added from report one (below). This matrix details the assessment criteria used to identify the use case required for the ideal solution, and details the alignment of this criteria with Business, Stakeholder and Functional requirements.

In demonstrating the alignment of these requirements from previous analysis, we can determine whether this component of the project has a higher chance of success.

Requirement Traceability Matrix (From Little Stars Business Analysis report)							
Business Requirements		Stakeholder Requirements		Functional Requirements		Priority	Non-Functional Requirements
BR ID	Business Requirement	SR ID	Use Case	FR ID	Functional Requirement/Use Case	P	NFR Description
BR1	Increase employee morale by decreasing 45% of their workload within the next 18 months	SR1	Track all Inventory requests from request to delivery	FR1	The system shall communicate information of all inventory requests for stakeholders to view in real-time	5	
		SR4	Perform a search on group inventory in real-time	FR5	The new system must have the capability to produce a real-time report on Little Stars group Inventory (stock)	4	
BR3	Increase process efficiency within Little Stars by digitising the system by end Q4, 2023	SR2	Create a digital inventory request in real-time	FR2	The system shall provide the ability to create inventory requests for staff to request supplies or equipment	1	
		SR3	Approve an inventory request in real-time	FR3	The system must include functionality for the Branch (or authorising) manager to approve requests in real-time	2	The system shall produce notifications for the authorising manager when new requests are entered for approval.
		SR6	Create Supplier Purchase Order from system	FR4	The system must include the ability for the Purchasing Officer to create a new Purchase Order for approved suppliers	3	The system shall provide the ability to directly email purchase orders to approved suppliers
		SR5	Update/Manage approved suppliers list in system				The system shall produce a printable list of approved suppliers for the Staff when creating a new inventory request
BR2	Increase Parent Satisfaction by 90%, within the next 18 months						

Table 35- Inventory Management Process Requirement Traceability Matrix (from Little Stars Business Analysis Report)

From the project goals and objectives, needs assessment, elicitation activity, root cause and stakeholder analysis previously conducted, we can begin the process of prioritising functionality sets from the above.

This is detailed in the following table to highlight the process acceptance and evaluation criteria. In the following table, each criteria are assigned an ID from the above Table. E.g. FR2 = 1 = A, FR3 = 2 = B etc.

#### 2.3.4 Inventory Management Process – Acceptance and Evaluation Criteria

Priority	Criteria	Criteria Evaluation
<b>MUST</b>	<b>A (FR2)</b> - The system shall provide the ability to create inventory requests for staff to request supplies or equipment	<b>Acceptance Criteria</b>
<b>MUST</b>	<b>B (FR3)</b> - The system must include functionality for the Branch (or authorising) manager to approve requests in real-time	<b>Acceptance Criteria</b>
<b>MUST</b>	<b>C (FR4)</b> - The system must include the ability for the Purchasing Officer to create a new Purchase Order for approved suppliers	<b>Acceptance Criteria</b>
<b>SHOULD</b>	<b>D (FR5)</b> - The new system must have the capability to produce a real-time report on Little Stars group Inventory (stock)	Evaluation Criteria
<b>SHOULD</b>	<b>E (FR1)</b> - The system shall communicate information of all inventory requests for stakeholders to view in real-time	Evaluation Criteria

Table 36- Inventory Management Process Functionality Sets

Following the identification of the above criteria, a forced pair analysis is able to be conducted to ascertain the importance of one set of system functionality weighted against another.

In the following table, the analysis will provide a total score or 'weighting' for each criteria.

**Scale: 1 = Least Important, 9 = Most Important**

	Inventory Request (A)	Approve Requests (B)	Create Purchase Order (C)	Run Inventory Reports (D)	Track Inventory Requests (E)
Inventory Request (A)		3	4	3	2
Approve Requests (B)	6		5	3	2
Create Purchase Order (C)	5	4		4	2
Run Inventory Reports (D)	6	6	5		4
Track Inventory Requests (E)	7	7	7	5	
Total Score	24	20	21	15	10

Table 37- Inventory Management Process Weighted Average

Following a completion of the above forced pair analysis, we can determine the weighting of criteria (in terms of absolute need) of each deliverable for the Inventory Management System.

The weighting information is able to be utilised in further ranking techniques to draw comparisons against the different solutions identified, and by means of comparison these can be compared to determine their ability to meet the acceptance and evaluation criteria.

	Inventory Request (A) (W = 24)	Approve Requests (B) (W = 20)	Create Purchase Order (C) (W = 21)	Run Inventory Reports (D) (W = 15)	Track Inventory Requests (E) (W = 10)	TOTAL SCORE
Outsourcing	Y	Y	Y	Y	Y	24+20+21+15+10 = 90
COTS	Y	Y	Y	Y	P	24+20+21+15+5 = 85
In-House Dev.	Y	Y	Y	Y	Y	24+20+21+15+10 = 90
Hybrid	Y	Y	Y	P	P	24+20+21+15+10 = 80
Do Nothing	Y	Y	Y			24+20+21 = 65

Table 38- Inventory Management Process Weighted Comparison, Solution Requirements

Key points from above table:

- Weights – A: 24, B: 20, C: 21, D: 15, E: 10
- COTS: Partially (P) meeting E gets half points
- Hybrid: Partially meeting D and E gets half points
- Do Nothing: only existing processes meet brief, and as such get no points for D and E.

### 2.3.5 Inventory Management Process – Assumptions and Constraints

In evaluating the proposed solutions for the ‘best fit’ within Little Stars operating environment and culture, the following assumptions and constraints have been identified. These values have been developed using industry knowledge and experience, research (including the results of the Inventory Systems Questionnaire completed by Little Stars staff as part of the preceding Business Analysis).

Assumptions			
Solution	Assumption description	Assumed amount	Comments
In-house	Developer cost per hr	\$ 100	
	No. of hrs of development	960	2 devs for 3 mths (40hr/wk, 4 wk/mth)
	Maintenance	192	10% of dev hrs for each year after imp
	<b>Time Estimation (weeks)</b>	12	
COTS	Monthly cost	\$ 110	Xero
	Administration officer / Purchasing officer	\$ 60,000	
	Training	\$ 5,000	1 consultant \$1000/day for 5 days
	<b>Time Estimation (weeks)</b>	4	
Outsource	Save 20% off performing in-house	\$92,160.00	
	<b>Time Estimation (weeks)</b>	8	
Hybrid	Mix of In House, COTS and Outsourcing:		
	- In House - 33.3%	\$ 38,400	
	- COTS - 33.3%	\$ 22,987	
	- Outsourcing - 33.3%	\$ 30,720	
	<b>Time Estimation (weeks)</b>	14	
Do Nothing	Purchasing Officer salary	\$ 60,000	
	Avg Inventory Request completion time (hrs) <sup>1</sup>	0.5	
	Average orders over 12months <sup>1</sup>	38	
	Avg Inventory Request completion time (yearly) <sup>1</sup>	19	
	Staff cost per hr	\$ 29	
	<b>Time Estimation (months)</b>	-	
General assumptions	Lifecycle (months)	36	
	Lifecycle (years)	3	
	Total staff	300	
	Concurrent users	10	

**Notes:**

1 - Information taken from Inventory Systems Questionnaire (Refer Business Analysis, section 7.3)

Table 39 - Assumptions for Inventory Management Process

Constraints	
Budget	\$120,000
Implementation time	8 weeks

Table 40 - Constraints for Inventory Management Process

### 2.3.6 Inventory Management Process – Weighted Solution Comparison

The identified solutions were ranked using the Weighted Solution Comparison method. Together with the results from the weighted comparison table, this method gives qualitative data to support the ranking of the solutions on the areas against the known constraints of budget and time. Points were awarded or deducted depending on the solutions ability to meet these constraints. The results of the analysis are displayed in the Table below.

z

Solution	Score	Cost	Weeks	Over/Under Budget (\$120,000)	Budget	Over/Under Implementation Time (8 weeks)	Total Cost (Cost+Budget+Imp Time)
In House Dev.	90	\$ 115,200	12	\$ 4,800	-	-2	88
<b>COTS</b>	85	<b>\$ 68,960</b>	<b>4</b>	\$ 51,040	9	2	<b>96</b>
Outsource	90	\$ 92,160	8	\$ 27,840	3	0	93
Hybrid	80	\$ 92,107	14	\$ 27,893	3	-3	80
Do Nothing	65	\$ 181,653	-	-\$ 61,653	- 9	4	60

+/-3 points for each \$20,000 under or over budget

+/-1 point for each 2 weeks under or over time constraint

Table 41 - Weighted Solution Comparison for Inventory Management Process

### 2.3.7 Inventory Management Process – Summary of ranked solution

COTS (Commercial Off The Shelf) has been identified as the optimal solution for the enhancement of the Inventory Management Process.

Across all reviewed criteria, this solution presents the best option to meet the project functional requirements, providing a balanced mix of positive outcomes within not only the stated budget, but the COTS solution approach also works well within time schedule constraints, making the solution the most cost effective among the solution approaches, and the shortest timeline of implementation among the solution approaches.

The COTS solution also meets Acceptance and Evaluation criteria strongly, making it a robust solution on all critical factors for the application.



## 2.4 Staff Record Management Process - Chanwoo Kim

In this section, four different solution approaches can be analysed to find out which one is the most suitable for business requirements and goals.

The solutions identified for the organisation are as follows.

1. COTS (Commercial Off-The-Shelf)
2. Outsourcing
3. In-house development
4. Do nothing

Each of these are going to be discussed as potential solution for Little Stars. Those solutions will be considered based on three factors (technical, operational, and schedule feasibility factors) and will be ranked which one is the best option to meet organisation's requirements.

### 1. COTS (Commercial Off-The-Shelf)

Advantages	Disadvantages
Development, maintenance fee can be saved	Difficult to find solution that meets all requirements
Easy to educate staffs in the company when functionality is common and well defined	Difficult to merge with existing company's systems
Regular updates are available	May cost a lot for user training
Customisable solution can be provided for organisation's needs	May be forced to upgrade over time

Table 42 -Staff Record Management Process - COTS Advantages VS Disadvantages

The Commercial Off-The-Shelf (COTS) solution is a well-made and commercially available packaged hardware or software. This can be one of the solutions for Little Stars. In terms of technical feasibility, there is no need to have required technology and skills within the organisation as it can be purchased commercially. However, there might not be able to meet all requirements and merge with existing system as it was not customised for the organisation. According to the report analysing company's business requirements, it can be guessed that there might no one to install this COTS for the organisation. Furthermore, it can be known that this solution cannot be met for all analysed requirements especially non-functional requirements as it was not developed based on those needs. In contrast, a positive factor in terms of operational feasibility as the software can be regularly updated and not difficult to educate users. Lastly, the COTS solution can be delivered within the time constraints as it is already existing solution for common organisations in real world. It can be expected that the solution can be installed within the organisation without time waste.

### 2. Outsourcing

Advantages	Disadvantages
High-cost efficiency	Communication would be more difficult
Available for delivering expertise and resources that the company cannot have	Contract negotiation can be delayed



Development can be conducted regardless of time zone	Time zone differences can affect service availability
Focusing on core capabilities	Security issues may be occurred

Table 43 -Staff Record Management Process - Outsourcing Advantages VS Disadvantages

Outsourcing solution also requires less technology and skills and easy to feasibly acquire. It is expected to approach to the business problem without in-house expertise as external professionals can deliver this methodology. This solution can be compatible with current system within the organisation in contrast to COTS as it can be developed based on the Little Stars' business requirements. For operational feasibility of outsourcing is going to be easy as it can consider current skills that the organisation has. However, there can be an issue regarding to the security issue as the company should provide their inner resources to external developers. This might make more difficult to meet business needs. Also, once the solution is installed, might be difficult to get a regular update. Lastly, it is good to develop this solution regardless of time zone but at the same time, it would be difficult to sustain service availability as there are communication difficulties. Because of this problem, contract negotiation might be delayed. These issues might lead to struggle with completeness.

### 3. Develop in-house

Advantages	Disadvantages
Available to provide solution that suits for company culture	Labour fee can be higher
Communication can be easier	Lack of skills comparing to external development solution
Easier to integrate with other existing system within the company	Difficult to focus on core capabilities
High control over product functionality, technology, development and maintenance	Difficult to follow current trends of development

Table 44 -Staff Record Management Process - In-House Advantages VS Disadvantages

The solution can be delivered via internal development process. The in-house solution requires technology and skills within the organisation, but it seems to be difficult to find those factors as the company conduct their business process with paper-based, not IT technology. For this reason, it might be difficult to feasibly acquire this solution and installation and operation can be difficult for the Little Stars. Nevertheless, it can be expected to be compatible with existing infrastructure and interfaces as the solution is going to be delivered only for the Little Stars. At the same time, it cannot be guaranteed that the in-house solution can be delivered within fixed schedule, but timelines might be extended. Since there is no skilful stakeholder for development, the organisation might struggle with scheduling. However, it will be good for operational aspect as the solution will be delivered based on the business needs from the first stage. Still, it is needed to be aware of sustainability with this solution as there is no promise for updates and maintenance.

### 4. Do Nothing

Advantages	Disadvantages
No cost for development	Business requirements cannot be fulfilled

Utilise existing data and resources in the company	Company should spend budget for inefficient business process in aspect of long-term period
No need to communicate externally	Difficulties for risk management
No need to train staffs with new solutions	Work satisfaction toward work environment cannot be improved

Table 45 -Staff Record Management Process - Do Nothing Advantages VS Disadvantages

Do nothing solution may cause nothing for the current business requirements. This approach does not require any technical and operational techniques. As it does not have to be compatible with current infrastructure and interfaces because there will be no changes and for this reason, there no need to meet technology and skills requirements. Also, it does not have to fulfill time scheduling at the same time. However, it is expected to have a lot of negative effects. First, the business requirements cannot be fulfilled, and the Little Stars should spend their resources as much as they have done, and this will affect to the business in aspect of long-term period. Also, there may be difficulties for risk management and employees should struggle with current inefficient work process as there will no improvements and changes.

#### 2.4.1 Sum Up

The table below shows the result of evaluation for each approach in terms of technical, operational, and schedule feasibility factors by providing ranking (High, Mid, Low) so that it can be easily readable.

	COTS	Outsourcing	In-house	Do Nothing
<b>Technical</b>	High	High	Low	Low
<b>Operational</b>	Mid	Mid	High	Low
<b>Schedule</b>	High	Mid	Mid	Low

Table 46 -Staff Record Management Process - Approaches Ranking Against Feasibility Factors

#### 2.4.2 Ranked Solution Approach - Solution Assessment and Feasibility Analysis

In this section, it can be discussed about ranking each solution approach using advanced methods with sound criteria. It will be measured which solution can meet business needs based on the figured requirements that was driven by Little Stars Business Analysis Report. The approaches can be analysed with various methods and its feasibility so that the solution can be decided what to be chosen.

The table below is to assist readers to understand selection criteria. Based on this resource, it can be found acceptance criteria and evaluation criteria that will be used to help prioritisation and apply different solution ranking methods. It is expected that determining whether which solution for the Little Stars has the highest chance of success at the end.

Business Requirement Document (BRD)		Stakeholder Requirement		Functional Requirement Document (FRD)		
BR ID	Business Requirement	SR ID	Use Case	FR ID	Functional Requirement/Use Case	Priority
BR1	Currently, the staff record management systems is paper based. Usually, HR department spends a lot of time to find information or manage every sheet of paper	SR1	As a HR department administrator, I want staff record management process to be easier than current one so that I do not have to spend a lot of time to manage all staff information	FR2	The new system must alert date to staff to complete professional development programme and maintain their skills.	3

	which decreases work efficient.					
				FR3	The new system should manage quitted staff record as well. Once the record is classified as quitted staff, then it needs to be deleted once a particular period passed.	6
				FR4	The new system should store and maintain safely within a database. The database needs to backup data to prevent staff information loss.	4
BR2	Currently, sometimes staff records are incorrect, so we have to request staff to submit another information form, and this makes staff record management process is delayed.	SR3	As an employee of Little Stars, I want paper-based staff record process to be converted to digital-based one so that I do not repeat submitting personal information form and focus on my job properly.	FR6	The new system should have edit personal information function for every staff. Once a staff wants to change or update his record, then he can do it on the system right away.	5
BR3	We have difficulties to do the future staff planning due to outdated or incorrect staff information. It takes too much time, and we need to spend more money for conducting task.	SR2	As an executive manager, I want paper-based report to be digitalised so that I can do future staff planning properly with precise information.	FR1	Currently, staff monthly report is produced by HR department in paper based. The digitalised staff record management system should produce regularly based on the information in a database.	1
				FR5	Currently, future staff planning is conducted based on paper-based monthly report and it makes difficult to do it due to outdated and wrong information. The digitalised staff record management system should provide recommendation function which assists executive management team to do future staff planning properly.	2

### 2.4.3 Assumptions and Constraints

Priority	Criteria	Criteria / Evaluation
<b>MUST</b>	A (FR1) - Currently, staff monthly report is produced by HR department in paper based. The digitalised staff record management system should produce regularly based on the information in a database.	Acceptance Criteria
<b>MUST</b>	B (FR5) - Currently, staff monthly report is produced by HR department in paper based. The digitalised staff record management system should produce regularly based on the information in a database.	Acceptance Criteria
<b>MUST</b>	C (FR2) - The new system must alert date to staff to complete professional development programme and maintain their skills.	Acceptance Criteria
<b>MUST</b>	D (FR4) - The new system should store and maintain safely within a database. The database needs to backup data to prevent staff information loss.	Acceptance Criteria
<b>SHOULD</b>	E (FR3) - The new system should manage quitted staff record as well. Once the record is classified as quitted staff, then it needs to be deleted once a particular period passed.	Evaluation Criteria

<b>SHOULD</b>	F (FR6) - The new system should have edit personal information function for every staff. Once a staff wants to change or update his record, then he can do it on the system right away.	Evaluation Criteria
---------------	---	---------------------

Table 47 -Staff Record Management Process - Business Requirements

Based on the criteria above, a forced pair solution ranking solution will be discussed to analyse the importance of system functionality weighted against the other components.

In the table below, the analysis can be found with a total score and weighting for each criterion. The scale can be provided between 1 to 9 that the higher digit stands for its importance.

	Monthly Report (A)	Staff Future Planning (B)	Professional Skill management (C)	Data Storage & maintenance (D)	Staff Detail Update (E)	Quitted Staff Record Management (F)
Monthly Report (A)		1	4	2	3	3
Staff Future Planning (B)	8		2	3	4	4
Professional Skill management (C)	5	7		3	5	4
Data Storage & maintenance (D)	7	6	6		4	3
Staff Detail Update (E)	6	5	4	5		5
Quitted Staff Record Management (F)	6	5	5	6	4	
Total Score	32	24	21	19	20	19

Table 48 -Staff Record Management Process - Forced Pair Analysis

In the following table shows weighting of criteria based on the forced pair analysis result. Each solution approach can be compared with each requirement and get a total score so that the stakeholders can know which one can be a proper solution for the Little Stars.

‘Y’ can be calculated as a whole weight rather ‘P’ stands for half of each weight. Then whole weights will be summed up and all solutions will be compared and ranked which one is weighted most.

	Monthly Report (A) (w = 32)	Staff Future Planning (B) (w = 24)	Professional Skill management (C) (w = 21)	Data Storage & maintenance (D) (w = 19)	Staff Detail Update (E) (w = 20)	Quitted Staff Record Management (F) (w = 19)	Total Score
COTS	Y	P	P	Y	Y	Y	112.5
Outsourcing	Y	P	Y	Y	Y	P	113.5
In-house	Y	Y	Y	Y	Y	Y	135
Do Nothing				Y	Y	Y	58

Table 49 -Staff Record Management Process - Solutions Ranking

To figure out the best solution for the Little Stars operating environment and business, the assumptions and constraints need to be identified. The given values were provided based on the knowledge, experience, and research. It is estimated amount that can be changed while meeting the organisation’s requirements.

Assumptions			
Solution	Assumption Descriptions	Estimated amount	Comments
COTS	- Monthly fee	\$ 150	Average of HR tools
	- Training fee	\$ 1,000	
	- Training period (week/s)	4	For whole IT devices in Little Stars
	- Installation fee	\$ 1,000	
	- <b>Estimated Time (week/s)</b>	<b>5</b>	
Outsourcing	- 20% cheaper price than in-house dev.	\$ 92,400	
	- <b>Estimated Time (week/s)</b>	<b>16</b>	
In-house Dev.	- Developers training fee	\$ 15,000	\$500/dev x 4weeks Training and development period will be overlapped Contract for 24 weeks (3 dev.)
	- Developers training period (week/s)	4	
	- Developers fee	\$	
	- Regular update fee	100,000	
	- <b>Estimated Time (week/s)</b>	<b>\$ 500 32</b>	
Do Nothing	- HR management team salary (mth.)	\$ 5,000	* Existing fee that Little Stars spends for HR management
	- <b>Estimated Time (week/s)</b>	<b>None</b>	
General assumptions	Total Staff	300	
	HR employees	10	
	Management team	5	
	Lifecycle (months)	36	
	Lifecycle (years)	3	

Table 50 -Staff Record Management Process - Assumptions

Constraints	
Budget	\$ 200,000
Implementation Time	24 weeks

Table 51 -Staff Record Management Process - Constraints

#### 2.4.4 Weighted Solution Comparison

The proposed solutions can be ranked using Weighted Solution Comparison method. Via this raking solution method, it is expected to get qualitative results that provide strong evidence for ranking of the solutions with given constraints, budget and time. The values were given based on the instructions below of the table. Each total score is provided in the table below.

Solution	Score	Cost	Weeks	Over/Under Budget (\$500,000)	Budget	Over/Under Implementation Time (13 weeks)	Total (Score+Budget +Imp Time)
COTS	112.5	\$2,750	5	\$197,250	3	19	134.5
Outsourcing	113.5	\$92,400	16	\$107,600	2	6	121.5
In-house	135	\$115,500	32	\$84,500	1	(8)	128
Do Nothing	58	\$30,000 +a	-	\$170,000	3	-	61

Table 52 -Staff Record Management Process - Weighted Solution Comparison

+/-3 points for each \$50,000 under or over budget

+/-1 point for each two weeks under or over time constraint

#### 2.4.5 Summary of ranked solution

According to the result of ranked solution above, it can be known that COTS (Commercial Off-The-Shelf) solution approach can be the best approach for the Little Stars. It is expected to reinforce current system of the Little Stars and meet business requirements. Through this section, the COTS solution can fulfil time schedule and budget constraints, and acceptance criteria and evaluation criteria. Thus, it is recommended to pick the COTS solution approach to improve current system within the Little Stars and fulfill their business needs at the end.

### 3 Solution Assessment

#### 3.1 Final Solution

##### 3.1.1 Analysis

Due to the inefficiency in Little Stars' current processes, in-depth analysis of 4 different processes was conducted in the previous report to gather business and stakeholders' requirements to improve them. The data collected from the previous report have been used to elaborate the analysis to find the best-fit solution approach for each process, which was selected by comparing the solution approaches against feasibility factors (technical, operational & schedule), Acceptance & Evaluation criteria (Business & Stakeholders' requirements), budget and implementation timeframe.

##### 3.1.2 Results

Analysis of Student's Special Arrangement, Staff Leave Management, Inventory Management & Staff Record Management processes have been conducted in section 3 of this report, identified the best solution approach for them. For the final solution, it will be a combination of two COTS solutions.

### 3.1.3 Recommendations

For Staff Leave Management, Staff Records Management & Inventory Management processes, COTS solutions were ultimately the best fit for Little Stars. COTS solutions for these processes as they mainly fit within the budget and implementation timeframe allocated for each process; however, most importantly, they are aligned with the business and stakeholders' needs to improve these processes. COTS solutions for the selected processes will provide a solely focus on the core business requirements, as they all can be addressed with COTS solutions, with no extra costs or implementation time comparing to In-House Development or Outsourcing. Moreover, COTS solutions provide a suitable support level for Little Stars HR & Procurement departments, in addition to available training material, which will allow the project to be delivered within the timeframe.

For Students' Special Arrangements process, the best-fit approach is a cloud solution, as the solution's costs are within the budget, but most importantly, it will achieve the business need of keeping up with the students' current special arrangements, as this solution will not compromise that. As Little Stars expands as a business, a cloud solution will accommodate to the business growth, and any changes may occur.

Due to the fact that COTS solutions need Business Management Services, for example Microsoft, which includes Microsoft Forms, it will cover the Cloud Solution needed for Students' Special Arrangements processes, and the business only needs to implement two COTS solutions:

1. HR Services Software: which covers Staff Leave Management & Staff Records Management processes in one place.
2. Accounting Software: To cover the Inventory Management process.

## 3.2 Solution Scope

After determining the best-fit approach for Little Stars, the solution scope is prepared to assist in a better understanding of the recommended approach in sufficient details to the business and its stakeholders, and to address the new business capabilities the selected approach will deliver. The solution scope includes the business needs, the components and its functionalities, assumptions & constraints, and the initial plan to deliver the solution.

### 3.2.1 Assumptions & Constraints

While assumptions & constraints have been identified for each process individually, a new set needs to be identified, to ensure the final solution is relevant to the business goals.

Assumptions	Constraints
Little Stars will accept the implementation of the new solutions	The solutions will be implemented within 24 weeks
The solutions will be implemented within the implementation timeframe	The budget for the project is \$580,000
Little Stars employees are willing to shift from using paper-based forms to the digitalised solutions	Employees lack technology skills



Little Stars Employees are willing to do relevant training

*Table 53 - Final Solutions Assumptions & Constraints*

### 3.2.2 Project Context

The solution scope is determined to be a combination of two COTS software; one to cover HR Services, and the other to cover Inventory management, while the Students' Special Arrangements will be implemented using the profound Microsoft subscription. All Little Stars staff are involved in the solution scope, but the departments that will have a significant change in their processes are procurement & HR departments. Within these areas of the business, several processes will be impacted. For instance, the process of requesting a student's special arrangement will be significantly improved, as it will be up to date with the whole business through Microsoft Dynamics. This will not only benefit Little Stars, but also the parents, as their concerns are addressed.

### 3.2.3 New Business Capabilities

The ultimate business gap is the insufficiency of the processes as they are paper based, which causing frustration to staff and parents, making the main business requirement to digitalise the processes, provide training to the staff and generate online reports (Based on Capability Analysis & Gaps from previous report). The suggested solutions will meet the business needs and will close the gaps the business currently have, as the COTS solutions will allow for digitalised solutions and generate reports based on the available data, which will be possible with an Enterprise Resources Planning System (ERP) that is Microsoft Dynamics.

### 3.2.4 Project Dependencies

Additionally, there are multiple business and technical dependencies which may impose constraints while attempting to implement the proposed solutions. Currently, it is profound that Little Stars employees have the required hardware to implement the solution, such as computers, mobile phones, and network connection, and upgrading the hardware is out of the scope. However, there is a technical dependency if the current hardware between the devices' compatibility with the suggested solutions and the success launch of the solutions. On the other hand, the main business dependency is the complete reliance in Little Stars staff on their willing to use the new solutions and follow the new processes. The solutions can be negatively impacted if the staff fail to follow the new processes and stick to using the old processes, the paper-based processes. Acknowledging and recognising these dependencies is critical, as they have a significant impact on the success of implementing the solutions and achieve the business needs.

### 3.2.5 Implementation Approach

Initially, the implementation approach for the suggested solutions will go through multiple stages of implementation. It is suggested, from a business analyst perspective is to rollout the new software to a pilot branch, to measure the solutions' success before rolling out to the whole business.

Using timeboxing, 6 timeboxes will be in total, each timebox is consistent of four weeks. The first increment will cover implementing the new inventory management system, which is suggested to be implemented within 2 timeboxes, or 8 weeks. The deployment of the inventory management system will take place during week 8 to week 9. The second



increment will cover implementing HR software to handle Staff Leave Management & Staff Records Management processes, which has 3 timeboxes (12 weeks), and the deployment of the software will occur at the end of timebox 4 to test Staff Leave Management functionalities, and during week 20, to assess Staff Record Management functionalities. The final increment is consistent of one timebox, 4 weeks, which should cover implementing Microsoft Form to handle Students' Special Arrangements and it shall be tested during week 24. The timeboxes and implementation timeline are illustrated in the table below.

Please note, the schedule below is just an initial implementation schedule, which shall be altered once Little Stars Management approves the implementation of the solutions.

Little Stars Nursery											
Increment 1: Inventory Management				Increment 2: HR Management						Increment 3: MS Form Implementatio n	
Objective: Implement the new Inventory Management Solution				Objective: Implement HR Management software to handle Staff Leave Management and Staff Records Management						Objective: Implement MS Forms to handle Students' Special Arrangements process	
Timebox 1		Timebox 2		Timebox 3		Timebox 4		Timebox 5		Timebox 6	
Wee ks 1- 2	We ek 3-4	We ek 5-6	We ek 7-8	Wee ks 9- 10	Wee ks 11- 12	Wee ks 13- 14	Weeks 15-16	Weeks 17-18	We ek 19- 20	Wee ks 21- 22	Weeks 23-24
			Deployme nt				Deployment				Final Deploym ent

Table 54 - Implementation Timeline

### 3.3 Business case

To estimate the strengths and weaknesses of the suggested solutions, a cost-benefit analysis needs to be conducted, across the two COTS approaches, and their expenses. In simple terms, the analysis will provide estimate costs, benefits costs, and the risk costs of

implementing the solutions, to measure the solutions' financial feasibility. In addition, Payback Period, Return on Investment (ROI) & Net Rate of Return will also be conducted to cover the limitations that cost-benefit analysis may disregard. While performing the cost-benefit analysis, the project's costs, benefits, and risk are going to be considered, to determine if the solutions are financially feasible.

It is important to note that the project costs are estimated, as the final solution has not been selected, rather they are based on the team's research on the average solutions' prices. Also, as it is difficult to predict the future, it is also difficult to estimate the benefits and risks costs, as they are difficult to be predicted and usually, they are intangible.

### 3.3.1 Cash Flow

#### Assumptions

- High quality nursery facilities are way less than the kindergarten facilities in terms of capacity. Using 64 as its divisible by 8 which is the maximum capacity for children at birth to 2 years. (HPW, 2021)
- Using the 175 as an average for the kindergarten capacity per branch so a total of 239 children that comes every day at each branch. With an average of 72% occupancy, it is 163 children per day in each branch. (Early Years Research, 2021)
- Average day cost of \$118.95 per child (Care for kids, 2022)
- Parents leaves their child at the day care without fail in a working day. There are 260 working days in 2022, which leaves us with 21.67 days on average per month. (CRM, 2022)

#### 3.3.1.1 Revenue

	Total Children (All branch)	Avg Daily Rate	Days per month	Revenue per month	Revenue Yearly
<b>Childcare</b>	<b>\$1135</b>	<b>\$118.95</b>	<b>21</b>	<b>\$2,035,829.25</b>	<b>\$24,429,951</b>

Table 55 - Business Revenues

#### 3.3.1.2 Wages

Stakeholders	Average Pay Monthly	Average Pay Yearly	#	Total Wages Monthly	Ref
<b>CEO</b>	\$12,163.08	\$145,957	1	\$12,163.08	<a href="#">Link</a>
<b>Executive Officer</b>	\$8,333.92	\$100,007	6	\$50,003.52	<a href="#">Link</a>
<b>HR Officer</b>	\$6,469.84	\$77,638	5	\$32,349.20	<a href="#">Link</a>

					<a href="#">Link</a>
HR Manager	\$10,416.66	\$125,000	5	\$52,083.30	<a href="#">Link</a> <a href="#">Link</a> <a href="#">Link</a>
Operations Manager	\$6,976.75	\$83,721	5	\$34,883.75	<a href="#">Link</a> <a href="#">Link</a>
Branch Manager	\$8,428.084	\$101,137	5	\$42,140.42	<a href="#">Link</a> <a href="#">Link</a>
Administrators	\$5,282.5	\$63,390	4	\$21,130.00	<a href="#">Link</a> <a href="#">Link</a>
Payment Clerks	\$5,372	\$64,464	10	\$53,720.00	<a href="#">Link</a> <a href="#">Link</a>
Receptionist	\$4,546.41	\$54,557	10	\$45,464.10	<a href="#">Link</a> <a href="#">Link</a>
General Staff (Caregivers/Teachers)	\$3,930	\$47,160	24 9	\$978,570.00	<a href="#">Link</a> <a href="#">Link</a>
Total Wages Monthly				<b>\$1,322,507.37</b>	
Total Yearly				<b>\$15,870,088.44</b>	

Table 56 - Wages

### 3.3.1.3 Operating Costs

	Average Monthly	Average Yearly
Rent	\$250,000	\$3,000,000
Supplies	\$10,000	\$120,000
Utilities	\$15,000	\$180,000
Maintenance	\$10,000	\$120,000
<b>Total</b>	<b>\$285,000</b>	<b>\$3,420,000</b>

Table 57 - Operating Costs

### 3.3.1.4 Estimated Net Profit

	Revenue	Expense	Total (Rev – Exp)
Monthly	\$2,035,829.25	\$1,607,507.37	<b>\$428,321.63</b>
Yearly	\$24,429,951	\$19,290,088.44	<b>\$5,139,862.56</b>

Table 58 - Estimated Net Profit

### 3.3.1.5 Project Cost

Direct Cost	Qty	Cost	Note
Employees			
Data Engineer(contract)	1	\$99,000.00	
IT Support	2	\$148,668	Annual

<b>Training Cost</b>		\$375,600	
<b>Total Direct Cost</b>		\$623,268	

Table 59 - Project Costs

<b>Operational Cost</b>	<b>#</b>	
Subscriptions		Cost/Month
<b>Microsoft Dynamics</b>	300	\$21,000
Employees		
<b>IT Support</b>	2	\$6,194.5
<b>Total Cost</b>		\$27,194.5
<b>Total yearly cost</b>		\$326,334

Table 60 - Operational Costs

### COST-BENEFITS Analysis

The project will return many benefits, mainly it will increase business operations, increase efficiency, and minimise conflicts between Little Stars departments. Moreover, it is expected that the solutions may increase customer base and decrease staff turnover! Translating these benefits into tangible values is challenging; however, they can be roughly estimated. It can be expected that implementing the project will return 30%-35%, approximately, of the total costs spent on the project, per annum. Coupled with the revenues, which are expected to be increased continuously, and with minimum costs to be contributed to the solutions (subscriptions & maintenance), the revenues are expected to increase linearly each year.

### Benefits Effectiveness

Year	Cash Flow	Room Occupancy Rate	Reason
<b>1</b>	\$5,838,907.56	73%	<i>Half Effective</i>
<b>2</b>	\$7,211,560.56	75%	<i>Full Benefits</i>
<b>3</b>	\$7,960,945.56	77%	
<b>4</b>	\$7,511,314.56	76%	<i>Normality</i>

Table 61 - Benefit Effectiveness

### 3.3.1.6 Net Present Value

Years	Cash Flow	Rate	PVF = $1/(1+r)^n$	PV = (PVF x CF)
<b>1</b>	\$5,838,907.56	12.00%	0.8929	\$5,213,310.32

2	\$7,211,560.56	12.00%	0.7972	\$5,749,011.93
3	\$7,960,945.56	12.00%	0.7118	\$5,666,443.80
4	\$7,511,314.56	12.00%	0.6355	\$4,773,576.20
			SPV =	\$21,402,342.25
			Initial Cost	\$(580,000.00)
			NPV	<b>\$20,822,342.25</b>

Table 62 - Net Present Value

### 3.3.1.7 Payback Period

Payback Period	Cost	Net Return
Year 1	\$(580,000.00)	\$5,258,907.56
Year 2	\$5,258,907.56	\$12,470,468.12
Year 3	\$12,470,468.12	\$20,431,413.68
Year 4	\$20,431,413.68	\$27,942,728.24

Table 63 - Payback Period

The payback period comes from the first year.

$$\$5,258,907.56 / 12 = \$438,242.30$$

$$\$438,242.30 / 31 = 41$$

It would only take 41 days for the business to get enough cashflow to return the money invested in the project.

### 3.3.1.8 Return on Investment

Return on Investment	
Initial Cost	\$580,000.00
Returns	\$5,838,907.56
	\$7,211,560.56
	\$7,960,945.56
	\$7,511,314.56
Total	\$28,522,728.24
4817.71%	over 4 years
1204.43%	per year

Table 64 - Return On Investment (ROI)

### 3.3.1.9 Internal Rate of Returns

Year	Cash Flow	IRR	PVF = $1/(1+r)^n$	PV = (PVF x CF)
1	\$5,838,907.56	1028.50%	0.0886	\$517,404.30
2	\$7,211,560.56	1028.50%	0.0079	\$56,627.34
3	\$7,960,945.56	1028.50%	0.0007	\$5,539.36
4	\$7,511,314.56	1028.50%	0.0001	\$463.14
			SPV =	\$580,034.14
			Initial Cost	\$(580,000.00)
			NPV	\$34.14

Table 65 - Internal Rate of Returns

The project is financially feasible and wouldn't have any risks financially speaking within the timeframe of its effectiveness. The net present value (NPV), return on investment (ROI), internal rate of returns (IRR) resulted on an exceptionally positive notation. Additionally, the project's payback period will be accumulated by the business within 2-3 months. The concerning part of the project will come down to the implementation and the risks involved.

### 3.3.1.10 Risk

The project has many potential risks after the implementation. Risks may include but not limited to fail in implementation, out-of-control circumstances leading to delay in implementation, or the solutions lose efficiency after implementation. It is vital to anticipate the risks associated with the project, and how they can impact the project costs. Thus, the risk costs should be estimated to minimise the damage that may result of the potential risks. Generally speaking, the risks that have been mentioned are most likely to happen during the first year of implementation, as the project's most costs are spent during the first year. Therefore, the percentage attributed to the potential risks to occur is 60% of the total costs of the first year of implementation, as a safeguard if anything goes wrong during or after implementation.

### 3.4 Allocate Requirements

In this part, it will be discussed about how the suggested solution components suit for business requirements. With comparison between business needs and solution components, it is expected that the solution provided by Group 29 team is proper and enough to solve current business problems within Little Stars Group. As discussed above, the COTS solution approach is going to be assessed with business needs so that stakeholders can see how the solution can fill-in the business gaps.

No.	Business Needs	Solution Components with COTS
1	Paper-based process needs to be converted into digitalised one	Applies to all solution approaches. The software can provide digitalised work process
2	The current process takes time too long and dissatisfaction is arising	COTS solutions and digitised forms will greatly increase efficiency for users and staff in processing time.
3	To keep current system for operating company cost too much budget including time spent	COTS can reduce cost for operating and time spent by staff
4	Paper based reports too slow for parents and for management	Cloud solution and COTS with Analytics reporting functionality to support real-time reports
5	Every data is stored in paper-based and difficult to manage	Cloud based software can store and manage every data related to the organisation without data loss or incorrect

Table 66 - Business Requirements Against Solutions Components

Based on the table above, it can be known the given solution approach can reduce the gaps for business gaps and it is the best suit for current organisation's operational system. All business needs provided above were matched with each solution component from COTS. Thus, the stakeholders might understand the suggested solution is the best approach for their organisation. By aligning business needs and solution components of COTS, now which kind of business requirements can be met after the solution provided and developed for the organisation.

### 3.5 Organisational readiness

By means of examining cultural and operational assessments, Group 29 Consultants will examine the readiness of the organisation to implement the digital transformation solution as highlighted in the previous sections.

For the ease of explanation, Group 29 Consultants have included a Kurt Lewin “Force Field” analysis diagram to illustrate and detail the scenario for the group. The scenario factors are detailed as below:

#### 3.5.1 Current situation

The current situation (*from Problem Statement, Business Analysis Report*) Little Stars Group is suffering from issues with business efficiency across all its operations due to outdated systems, which are causing a large quantity of additional time and resources to be committed into administering these systems and processes across all areas of their business.

These processes typically involve employees across several different levels across the organisation, which result in Slow processing of requests, Confusion, frustration and dissatisfaction from clients and employees, Delays in cashflow occur from paper-based fee payment, Late and often outdated staff reports provided to the CEO and executive management generate little to no value or business insight.

Centre staff may miss critical special arrangements for children’s medication, food or exclusion from activities.

#### 3.5.2 Desired situation

The desired situation for Little Stars Group is to have (and implement) an efficient, seamless and harmonious business operation for their group of centres across Brisbane, allowing employees to focus more time on their duties, and less time completing administrative, redundant tasks.

#### 3.5.3 Project Impact (if no actions taken)

Little Stars Group is beginning to lose clients due to their difficulty with time consuming and inefficient fee payment systems, which occupy staff and also parents. There are also similar problems across multiple business processes which indicate an overall lack of efficiency. With no action taken, parents will choose to enrol their children in other centres, and staff stress will rise due to time spent with administrative and redundant tasks which is likely to lead to higher turnover of staff, further costing the business with onboarding and offboarding employees, training costs and also costing Little Stars reputation and image problems in the industry.

##### **Forces driving for change:**

- CEO of the organisation, who is a big force behind driving the change behind the Group.
- Parents who spend excessive time in the centre to complete manual fee payment process
- Higher employee productivity instead of completing current manual and paper-based processes
- HR, Operations and senior management who need up to date reports and information
- Growing competition may take customers and potentially staff

##### **Forces resisting this change:**

- Employees opposing change due to ‘fear of new’
- Staff who fear losing jobs as part of digital transformation
- Contractors or suppliers who fear losing work due to changes or new metrics for SLAs, etc



### 3.5.4 Analysis of forces

Analysis of forces to assess their impact (trivial to significant or extremely weak to extremely strong etc.) There are a range of factors and forces for the solution to be considered and assessed. These will be briefly analysed as per the following, and allocated scores between 1-10 accordingly.

- **CEO** – Strong proponent of change, extremely strong (9)
- **Parents** – Frustrated with current systems, very strong (7)
- **Higher Productivity** – All employees frustrated with current systems, strong (6)
- **Head Office** – Requiring up to date information, strong (6)
- **Competition** – Putting upward pressure on group due to their newer or simpler processes, fair (4)
- **Fear of New** – Employees resistant to change or simply familiar with current processes, very strong (8)
- **Fear of Losing Jobs** – Employees with concerns over losing their jobs due to change, very strong (6)
- **Contractors losing contracts** – Contractors concerned with losing work due to change, fair (4)

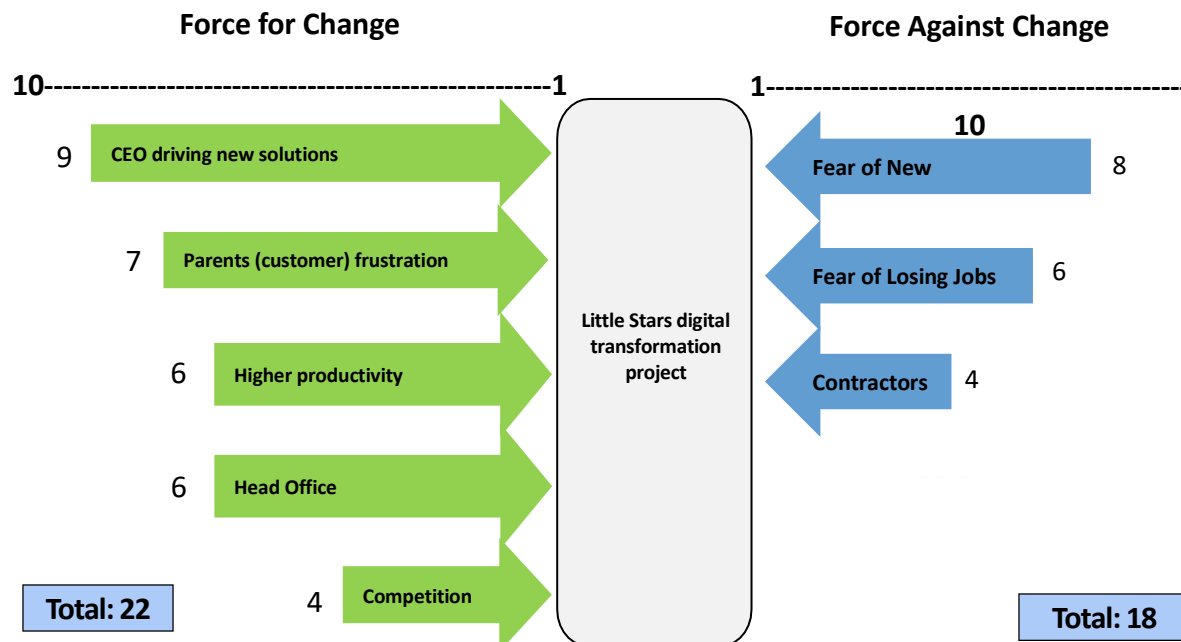


Figure 2 - Force Field Analysis - Digital Transformation

### 3.5.5 Assessment of change viability

From the above Force Field analysis, it is evident that there are not many strong forces against change in the Group, with the exception of staff (as expected) who will be naturally resistant to any organisational change due to familiarity with current processes, fear of change etc, and staff and contractors with anxiety over their roles or agreements, which will be covered further in the following section of this report.

The perceived high level of force 'for' the change is high, and this is aided by direction from the top levels of the organisation driving the initiatives, whether from the CEO in order to meet project goals or from management / hr / operations and other parties needing up to date reporting for better metrics.

The total against is 18, with for change of 22 easily outweighs the initial resistance to the change. The forces against the change can also be reduced or limited with the recommendations in the next section.

### 3.5.6 Options for decreasing the strength of opposing forces

From the analysis of current conditions within the organisation, the Little Stars group has a strong desire for change. There are forces against the change as with any major change to functional business structures, but with some strategies these can be reduced to allay or perhaps mitigate some of the opposing forces to the change.

Group 29 Consultants recommend the following measures to reduce the force against change to provide a more cohesive transition to a digital solution:

- **Involve staff in workshops:** During the initial phases of the project, if workshops are run to encourage employees to attend and discuss their challenges, recommendations and features they would like to see in the solution, this has the chance to increase employee buy-in and may be of immediate benefit in staff morale if it is apparent that a solution to their issues is in hand.
- **Head Office and Centre Management Information sessions:** Meetings both before and during the project timeline to clearly communicate the business direction, any updates and reasons for the change can prove to be a strong positive influence on the process, and help to institute top-down change in the perceptions of the new solution.
- **Information sessions and Subject Matter Experts / Superusers:** Keeping employees well informed of the appropriate positive changes to the business, and how this will provide direct benefits in their roles has a strong chance to instil and maintain a positive perception of the change. It also provides a chance for any employees hesitant about the change to ask questions and seek more info from the project sponsors, and include Subject Matter Experts (SMEs) / Superusers for every centre in the solution, reducing overall hesitance and generating excitement for the changes.
- **Provide new devices to use solution:** Employees in certain roles may benefit from brand new technology given to them to utilise the solution in their roles. This is a chance to increase efficiency further by setting up basic functions on mobile devices or tablets and drive change from supervisor level down.
- **Social Media and posters in centres:** To market the solution to both employees and also to customers (parents), the solution could be advertised via email to the nominated email address to parents, social media for the centre promoting the new changes as a benefit to all and further to try and encourage other dissatisfied parents of other centres to come and try the services provided by Little Stars.

### 3.5.7 Organisational Readiness Summary (Go or No-Go)

Based on the analysis conducted in this section, the overall climate of Little Stars Group is that there is already a strong sentiment or desire for change.

**Based on the factors assessed, it is the believe that the conditions exist for “GO” for a digital transformation project for Little Stars Group.**

With some or even any of the above implementations, the resistance to change for Little Stars is far less likely to be as strong, and with even a small or large reduction of the forces against, this will strengthen the drive for change inside the organisation, and may be a critical factor in ensuring the initial success or adoption of the project and also its ongoing adoption to prevent the group reverting back to earlier systems. The process of how the business will transition to the new systems and those considerations will be covered in the following transition requirements section.

### 3.6 Transition Requirements

Transition requirements describe what an organisation needs to bring change into their business processes. In the previous section, we have determined from analysis of factors at play within the organisation, that change is more than ready, and that the likelihood of project success of the digital solution can be increased further by some additional measures to be discussed with the project sponsors. In this section we will cover how through a careful process of change management,

The following project goals from report 1 are as follows:

- Increase employees' morale by decreasing 45% of their workload within the next 18 months.
- Increase parents' satisfaction by 90% and retain 20% more customers within the next 18 months.
- Reduce processes inefficiency within Little Stars by digitalising the system by the end of 2023.

The highlighted project goals shall be met with the requirements highlighted within the scope of sections 4.2, 4.4 and also within the following sections of transition requirements as detailed.

#### Conceptual Integration Solution Diagram

To assist with understanding of the data migration process, Group 29 Consultants have evaluated the conditions for the integration of the centre's administrative systems, and have interpreted this data into the following data flow model to illustrate how the solution may operate under the new systems:

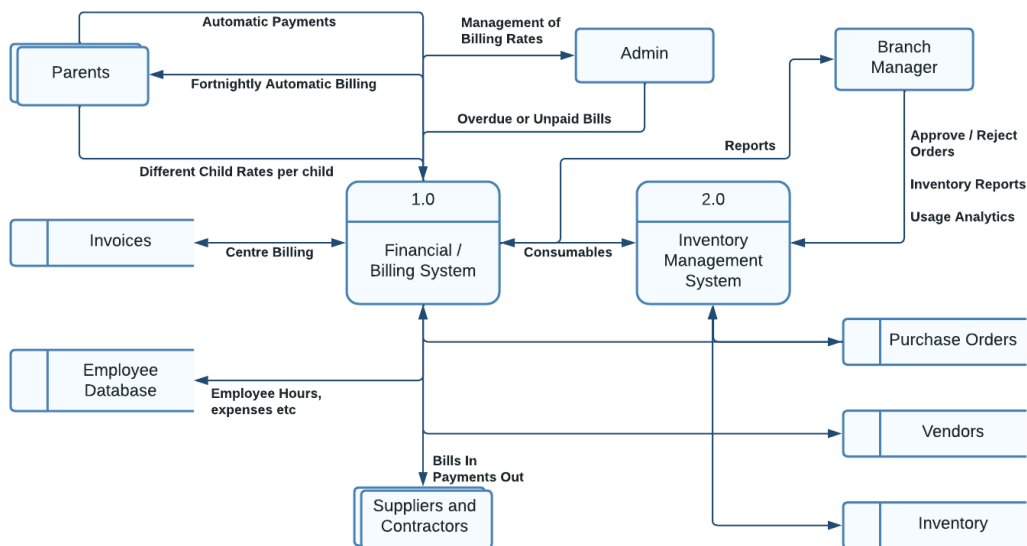


Figure 3- Level 0 Data Flow Diagram (Conceptual)

Each centre will have its own database to administer, which will be maintained and managed by admin and branch managers, with technical support available from the COTS provider.

This solution will be cloud-based and connected to head office, who will have read only access to each centre's information for the purpose of reporting and business analytics.

### **Data Process Migration**

The data captured and stored by Little Stars current manual processes will need to be evaluated to identify whether to archive, cleanse or input into the new solution.

As Little Stars is implementing its first IT-based solution, the 'data migration' process will involve identification of the necessary master data needed to implement the new solution, its sources, quality assurance (cleansing), and the performance of data entry (instead of the typical archiving, cleansing and mapping process from an existing IT system).

The current process captures the following data sets that will be relevant within the new system:

- **Children master data:** Child name, Birth date, Allergies
- **Parent master data:** Parent name/s, Child name/s,
- **Staff master data:** Staff name, Education
- **Vendors:** Vendor names, Billing terms, Payment terms
- **Inventory:** Products, Quantities

**Scope:** The scope of data to migrate to the new system will be limited to current records. Records relating to past students and their parents, ex-staff, and old vendors will not be entered into the new system.

**Sources of data:** Sources of data will include all of the current forms in use by the business, including Fee Payment Form; Staff Leave Request Form; Staff Information Form; Student Progress Report; Inventory Request Form; and Special Request Form. In addition to information captured on forms, information will need to be gathered on the current vendors and the current stock levels in each inventory store location.

**Quality assurance:** As part of data process migration, Business rules shall be checked to see that converted data is correctly interpreted. Data validation will be checked and confirmed at the point of data entry.

The new system will have data validation controls in place, for example, BSB validation checks for bank transfer information and other required information as per financial institution requirements and current safeguards.

**Data Entry:** As no data is being converted from electronic sources, there is no need to review business rules to ensure that converted data is correctly interpreted.

## Ongoing Work

To manage interim processes between cutover to the new systems, the following cutovers have been considered. The schedule for the cutover to the new system and process will be as follows:

**Technical cutover:** On week 0, the system will go-live, and all data entry will be performed over that week.

**Business cutover:** A staggered implementation approach will occur for the business cutover to reduce the amount of change sustained by the business in a single week (refer to below Table):

Week 1-2: The business will commence using the new system for fee payment. In addition, all new master data for all modules (e.g. students, parents, staff, suppliers) will commence being entered into the system.

Week 7-8: Inventory management processes cut over.

Week 15-16: Staff leave management processes cut over.

Week 23-24: Special arrangements processes cut over; and Student reporting

The timelines for go-live for the project or as the rollout is released in specific branches, which will be communicated with Little Stars at the time of project commencement.

Little Stars Nursery											
Increment 1: Inventory Management				Increment 2: HR Management						Increment 3: MS Form Implementation	
Objective: Implement the new Inventory Management Solution				Objective: Implement HR Management software to handle Staff Leave Management and Staff Records Management						Objective: Implement MS Forms to handle Students' Special Arrangements process	
Timebox 1		Timebox 2		Timebox 3		Timebox 4		Timebox 5		Timebox 6	
Weeks 1-2	Week 3-4	Week 5-6	Week 7-8	Weeks 9-10	Weeks 11-12	Weeks 13-14	Weeks 15-16	Weeks 17-18	Week 19-20	Weeks 21-22	Weeks 23-24
			Deployment				Deployment				Final Deployment

Figure 4- Little Stars Group Timeline of works as per (proposed)

### Organisational Change (proposed)

Within the Little Stars Business, skills development and communication of change will be an essential part of the success of the digital transformation solution.

Under the “As-Is” Structure, the business currently employs a group purchasing officer, who is responsible for the management of inventory, reporting, and issuing of purchase orders for inventory of the business.

### Organisation (As-Is)

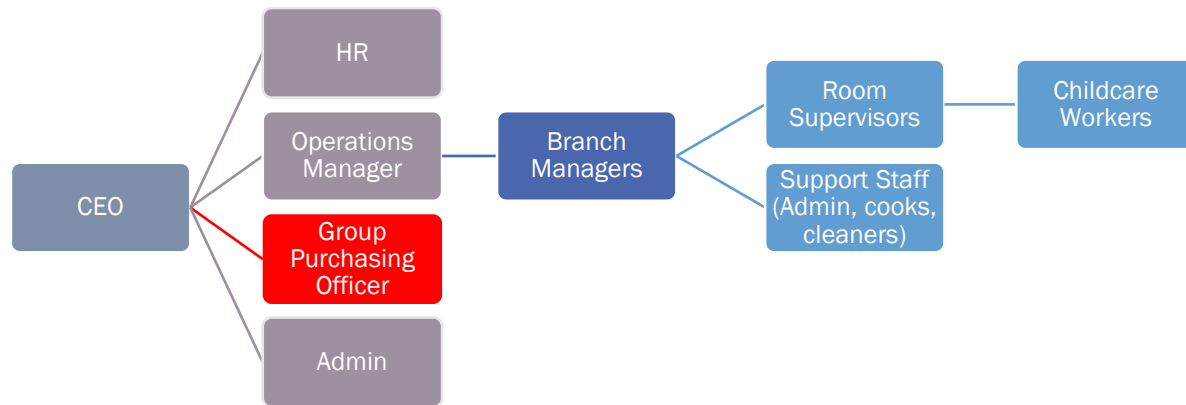


Figure 5 - Little Stars Business Organisational Chart / Hierarchy

### Organisation Proposed change (Group Purchasing Officer now Account Manager)

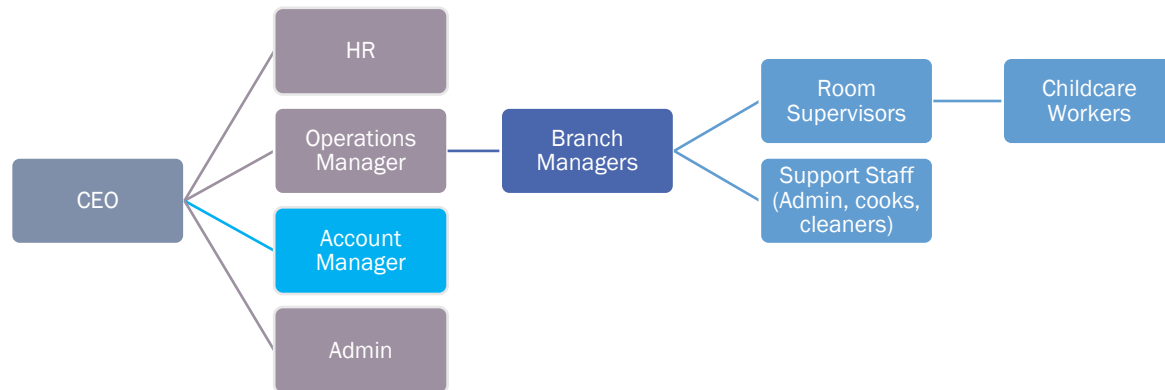


Figure 6- Proposed Org chart

**Group Purchasing Officer to Account Manager:** Within the proposed structure, the Group Purchasing Officer role will be discontinued, with the role transitioning to an “Account Manager” role in the organisation. The business will have a requirement for a full-time or part-time Account Manager, with a knowledge of all business contractors, suppliers and logistics, which will need to be managed and maintained to ensure all Contracts and SLAs (Service Level Agreements) are profitable, ensuring that Little Stars Group maintains the most cost-effective relationships with its suppliers.

Training will not be a large requirement for the role, as it is a main requirement that the Account Manager has a sound working knowledge of the business’ contractors and SLAs, and the major components are able to be learned by on-the-job training.

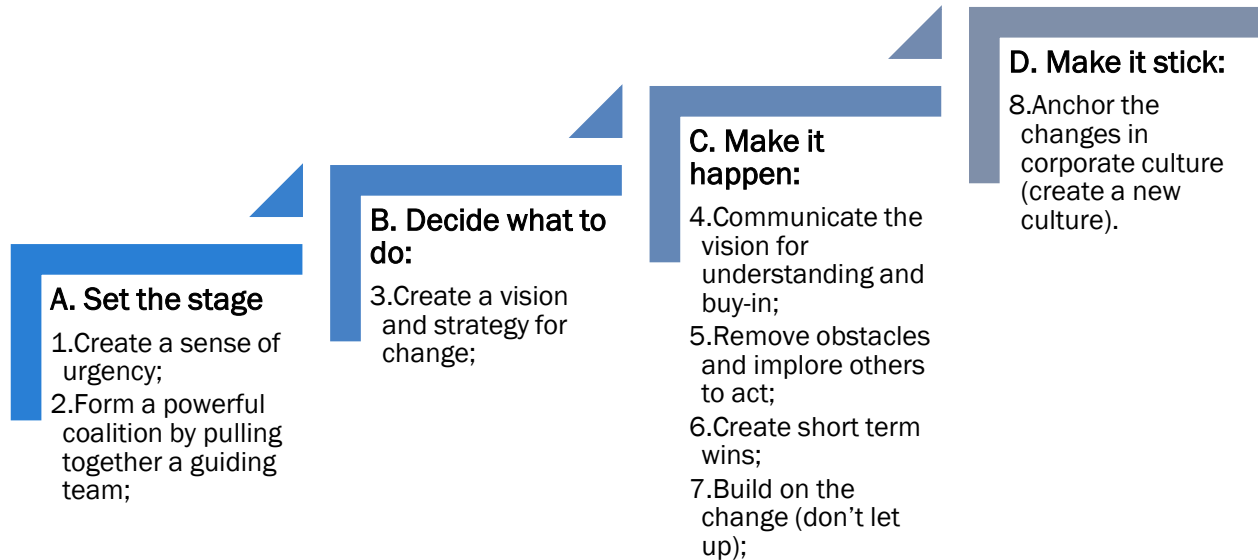


Figure 7- Kotter's Change Model example

Using the above model for examination of the business' transition requirements, we will detail the requirements for organisational change, and the strategies and by which the change can be implemented, the challenges and objectives which need to be both understood and met, and also confirm which requirements are met by which solution objectives. This connects the solution scope, business case and allocation of requirements to ensure the sponsor and key stakeholders have a clear path forward if the solution is proceeded with.

The steps in which this information will be confirmed is as follows:

1. Project urgency.
2. Identify coalition and a project guiding team.
3. Overall project vision and strategy for change.
4. Communicate the vision for understanding and buy-in.
5. Remove obstacles and implore stakeholders / others to act.
6. Identify short term wins.
7. Build upon the change
8. Anchor the changes in the business' culture (create a new culture).

### 3.6.1 Project urgency

To ensure that the project is a success, all stakeholders involved with the solution need to have a wider awareness of the strong need in the organisation for change.

This can be provided by emphasising project urgency during the consultation phase of the project, where key points can be obtained and emphasised to gather positive drive for change from within the business, using a range of factors.

Group 29 Consultants recommend using a range of positive messages to clearly highlight key points for the urgency of the digital transformation. The means to have a high impact on almost all stakeholders and drive support for the project should be simpler in the case of Little Stars Group, as many employees have indicated dissatisfaction and frustration with existing processes.

**Some ways to cover and communicate the urgency of the project are:**

- Cover areas of concern during meetings or town-halls. These concerns can be used to draw attention to the solutions being prepared and be shown as a solution to the problem.
- Discuss challenges with available time with employees. Discuss time spent carrying out administrative tasks and activities which could be getting done with more available time.
- Speak to Executive Management team about reporting and the problems caused by late or outdated financial and operational reports
- Ask group to launch feedback function for parents on processes such as fee payment, and observe responses. Response information to be provided to Executive Management and CEO.

With these simple actions and others, the ability to highlight the scenario to shareholders at different levels of the organisation internally, and externally from parents of the children attending the centres will be very clear and highlight the requirement to provide a solution to resolve these and other issues.

### 3.6.2 Identify coalition and a project guiding team.

**Essential factors:** An essential factor to the success of the project is to garner strong support for change, which must be driven from a project guiding team.

The team must have power to enact change but also must be diverse, representing as many facets of the organisation as possible which will be affected by the planned changes.

There must be no hierarchy to the group, every member must be on the same level and have same amount of say in any activity. The recommended staff for a project team would ideally include members such as:

- Centre Staff members from each branch
- Room Supervisors
- Branch Managers
- CEO
- Executive Management
- Marketing (social media etc)



**Diversity of project team:** With a diverse coalition of team members, the project team will have a strong understanding of both the needs of the business, but also realise the benefits of the project, which will act as a strong force for driving positive change from within the organisation, by employees of the organisation.

### 3.6.3 Overall project vision and strategy for change.

**Reasons behind the vision:** In the process of creating a strategic vision, it must be emphasised that the future will be different, and how the initiatives in the planned project will help to lead this vision, and contribute to the success and growth of the business.

Group 29 Consultants have committed significant resources to research, investigate latest technologies to find the best solution for a digital transformation project, an instrumental step in assisting Little Stars Group achieving their business vision and goals through greatly increased efficiency.

**The Vision:** (As per their company statement) Little Stars seek to provide nothing less than the best in childcare across their centres. Their centres provide the very best of activities, facilities, nutrition and resources to ensure that every child is accommodated for, cared for and is given the best opportunity to reach their full potentials moving into school and beyond.

Little stars recognise this, and hope to provide the best to change little lives. To support a great Childcare business, great systems are needed to back it and support it also.

**Support for achieving the vision:** This is where Group 29 Consultants can provide the solutions needed, providing those outcomes needed by Little Stars Group to achieve their business objectives, save money and time, and focus on the things the group does best.

This vision drives the project, focussing on what matters the most to the business, and by maintaining a forward focus, making use of the best and latest technologies, ensures Little Stars will remain doing what they do best, and setting the highest standards in the Childcare industry for years to come.

### 3.6.4 Communicate the vision for understanding and buy-in

**High likelihood for buy in:** With a clear vision for the directions, goals and reasons behind the digital transformation solution, and the dedication that the childcare workers, supervisors, staff, managers and support staff have, the opportunity for buy-in across the business for the solution is very high.

**Forces for organisational change strong:** With the findings of the organisational readiness analysis also indicating that the group is ready for this kind of organisational change (See section 4.5 of this report for more), communication of a strong vision will have a high likelihood of employee buy-in across the group.

**Positive language and affirmation** is paramount when any discussion of the solution occurs through media such as email, social media posting, any printed correspondence such as flyers, information booklets, posters (if, or as used by the group).

**Physically communicating the project and vision:** The recommended means for conveying information to parents and also to workers and shareholders in the business is to utilise social media. With repeated positive messages going out to clients and workers from initial

phases of planning through to rollout or go-live, the solution is expected to be regularly and effectively communicated.

**Use the project as a selling point:** Updating of major systems to give customers more, and make work easier for staff has the ability to influence decisions in the marketplace for people or professionals seeking new opportunities. The project can be leveraged to take advantage of this through effective social media and marketing.

### 3.6.5 Remove obstacles and implore stakeholders / others to act.

Changing of process within a business effects change, and there will always be resistance to change from those within the organisation who are comfortable and familiar with the existing processes, even if these processes are inefficient, time consuming and costly across the group.

Every effort must be made to allay fears of change by making clear efforts of communication to convey the changes, what they mean for each level of the business and the benefits and trade-offs that will occur as a result. These can occur by means of short-term wins which are clarified in section 4.6.6.

### 3.6.6 Create short term wins

**Sharing the benefits:** To affirm the buy-in to the project, silence or eliminate obstacles / roadblocks, the early successes of the project should be effectively communicated and shared group-wide.

Benefits/wins are a wide-ranging term and can be used to detail anything project related from:

- **Tangibles:** such as new Laptops, Thin Clients or workstations for each centre to utilise the digital solution, and or mobile solution
- **Non-tangibles:** such as information on project wins (e.g. Immediate reduction in time processing fee payments (through Analytics or other),
- **Rewards:** Following the increased efficiencies across the centres, the possibility of reviewing employee remuneration may exist as the project objectives from the Cost-Benefit Analysis (CBA) and Payback Period (PBP) are announced. With the success of the projects and as a reward for employees embracing the solution, Group 29 Consultants recommend that a remuneration review take place within the first 6 months to determine if conditions exist for pay rises across the board of the group.
- **Awards:** To celebrate those in the project team, superusers in the branches and users who embrace the solution, awards such as gift vouchers, movie tickets and more could be offered to those who are embracing the change and going above and beyond to help others struggling with the solution. This will also help to reinforce the positive culture around the changes and help to minimise obstacles as detailed in section 4.6.5.

With emphasis on short term wins this will further increase confidence and use of the new digital solution, and, in long term, increase employee and client satisfaction.

### 3.6.7 Building upon change

**Accelerate and consolidate:** At routine intervals, the project team will be required to review and track project timelines in addition to external project management and identify what needs to be improved during the project rollout.

This function will ensure that while the timeline of the project proceeds, that the factors around any occurrences are identified and addressed and discussed with the Project Manager.

**Identifying and maintaining timelines** will be a crucial factor in maintaining a positive outlook on the change, and will provide assurances to users, stakeholders and all involved in the project that development of works are proceeding as planned.

Below is a copy of the Little Stars Timeline which has been provided as part of the solution scope to illustrate the timeboxes and stages of the project, and critical deployment dates for each stage of the solution.

**Check solution scope:** With careful planning and management of key objectives and deliverables, the project has a very strong chance to remain on track, and ensure that any considerations missed during the initial planning phase are corrected, limiting chances of timelines being pushed back and overall scope drift occurring due to excessive delays.

### 3.6.8 Anchoring change in the businesses culture (creation of a new culture).

**Embracing the changes:** Throughout the body of this report, Group 29 consultants have detailed numerous techniques, strategies and approaches to ensure that any investment which is made in the structure of the organisation by proceeding with the proposed digital transformation achieves all required goals and KPIs.

Further to this effect, in addition to achieving project and business goals, it is critical that the employees of the business are included as part of the journey as specified in previous sections to ensure buy-in to the solution.

**Meeting of requirements is not enough:** With Section 4.4 of this report detailing the connection of business requirements to stakeholder requirements to solution requirements, analysis of organisational readiness in section 4.5 and a further review of the changes in section 4.6 and the importance of adequate transition requirements, these models of analysis ensure compliance with scope, meeting of requirements should almost ensure the success of the project, however this does not ensure the ongoing success once the scope is fulfilled and the project completed.

Long term change of the groups culture toward embrace of these new solutions must take place to ensure that the project has every chance of success.

Measures to:

- Reduce the forces against change
- Positively, clearly and effectively communicate the project, updates and its goals
- Removal or limiting of obstacles for the solution
- Positive reinforcement of use and support of the solution

Will all help to initially promote the cultural change needed. The need to continue these actions and reinforce the use of the system will build upon themes of continually using the best, most efficient ways of completing tasks in the business, for a minimum of 18 months after the project has completed.

**Promoting a positive culture:** Following up works, adding new features, listening to staff will help the business to embrace the changes and continue to evolve. Over time, these changes may push others out of their comfort zone who do not have buy-in for the solution, and these employees have the option to embrace the change or not, but overall the culture of improvement in the business must be driven to thrive.

**Ongoing work / Embrace the change:** If the organisation is not able to embrace change, employees will go back to the way they have always completed tasks. As per the scope of the report, if planned, predictable, well communicated, supported and rewarded change is applied, the likelihood of a strong, energetic and exciting culture growing within Little Stars Group is high, and the digital transformation solution detailed within this scope shall seek to serve as a catalyst toward positive, efficient, rewarding change across all levels of the business.

## 4 Conclusion

Within the scope of this report, factors have been analysed based on data provided, elicited and researched across the Little Stars business, in addition to its culture and existing business processes, and desktop research of the wider climate in the childcare industry.

These different factors have been researched within Report 1. Using a range of different analysis methods, these have highlighted the need for a digital transformation solution for existing systems. This has been elaborated on within the scope of this report, with Group 29 Consultants identifying requirements in key processes for the project based on a mix of COTS for key administrative and HR processes, and an Outsource solution for Student's special arrangements.

These have been identified overall as a 'Hybrid' solution, as it takes advantage of multiple technologies to achieve an overall scope. These have been discussed with reference to structure, process update and timelines for delivery of the set scope as identified in section 4.1.

With a high confidence of success, Group 29 Consultants present this solution to Little Stars Group with the expectation that not only will the solution meet all key requirements, but also observe a minimum payback period, provide a low first cost, operating cost and life cycle cost to provide peace of mind and value to the organisation.

With the measures implemented within the scope of this report, the new solution shall continue to increase efficiency and staff and customer satisfaction over the long term, and with continued iterations to the processes reviewed, the costs of future updates are also safeguarded against any major change if the latest solutions and technologies are continually applied.

We thank you for your time and consideration in reading this report, and we are here to provide clarifications to any questions with relation to the content in this report, and we wish you the best for the upcoming project to get the most of your business.

Best regards,

Brian, Cham, Dennis and Diether

GROUP 29 CONSULTANTS

## 5 References

Care for kids. (2022). *Child Care Cost Calculator*. Retrieved from Care for kids:  
<https://www.careforkids.com.au/home/childcarecosts>

CRM. (2022, 03 1). *How Many Work Days in a Year?* Retrieved from CRM:  
<https://crm.org/articles/how-many-work-days-in-a-year>

Early Years Research. (2021). *Q1 2021 Performance Indicators*. Retrieved from Early Years Research: [https://www.eyr.org/q1\\_2020\\_performance\\_indicators](https://www.eyr.org/q1_2020_performance_indicators)

HPW. (2021). *Childcare Centre*. Retrieved from HPW:  
[https://www.hpw.qld.gov.au/\\_\\_data/assets/pdf\\_file/0026/3995/sp205.420child20care20centres20-20120november20200420previously20part2022.pdf](https://www.hpw.qld.gov.au/__data/assets/pdf_file/0026/3995/sp205.420child20care20centres20-20120november20200420previously20part2022.pdf)

Indeed. (2022). *Daycare Teacher Salary In Queensland*. Retrieved from Indeed:  
<https://au.indeed.com/career/daycare-teacher/salaries/Queensland>

## 6 Appendices