

SCAF Costing Workshop

Team QinetiQ

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Background

- ❖ **Re-location** – QinetiQ, Farnborough, UK to QinetiQ, Melbourne, AUS.
- ❖ **Home location** – Hampshire, GU14
- ❖ **Family** – a wife (34) and two children; son (16) and daughter (12).
- ❖ **Age** - 34 years old.
- ❖ **Job title** –Consultant, 4 years of experience
- ❖ **Salary** - £30K
- ❖ **Work start date** – 01/10/14 (Giving a 6 month project timeline from 01/04/14.)



Cost Considerations

- Visa (2 adults, 2 children)
- 1 adult (16 years old) and 1 child passport
- Phone bill
- Flights for 4 adults
- Disposal of household items
- Air freight for small heirlooms
- Taxi to airport
- Temporary accommodation [15/09/14 - 15/11/14]
- Food and drink allowance prior starting work [15/09/14 - 30/09/14]
- Permanent accommodation deposit
- Essential Furniture – a double bed, 2x single bed, 4x wardrobe, sofa, dining table and chairs



Scheduling Considerations

Prior moving to Australia–

Visa options, transporting items, financial, flights, insurance, schooling, book hotels.

Post moving to Australia –

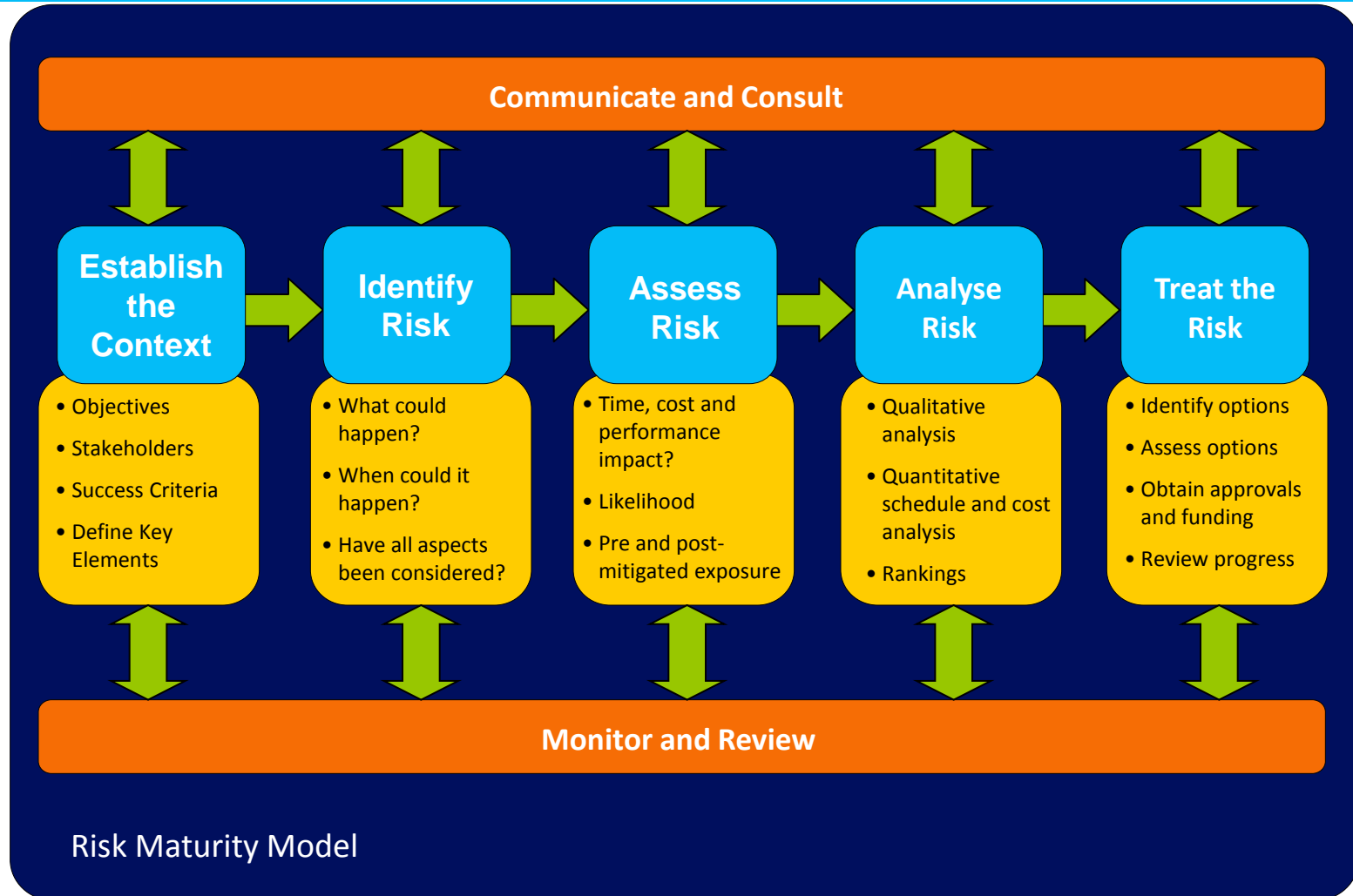
Apply for Australian Tax File Number (TFN), Register with Medicare, Apply for Australian driving licence, search for housing, enrol children into school, purchase new furniture.



Definitions

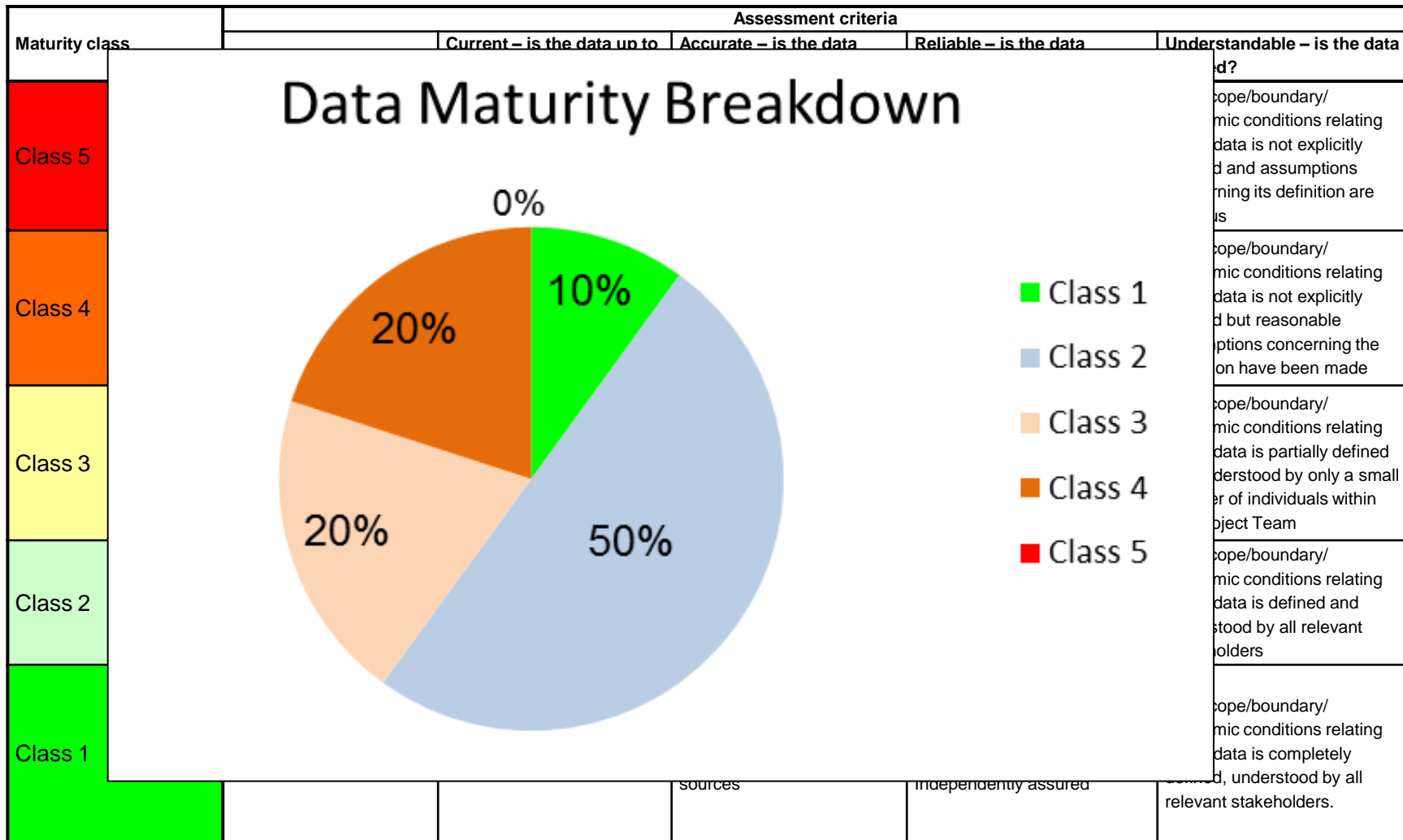
Title	Definition	Probability of Occurrence	Cost and Duration
Baseline (Deterministic)	The cost and duration of the activities that you intend to complete.	100%	Single point Estimate
Uncertainty	The possible variation in the cost and duration of the activities in a baseline estimate and schedule.	100%	3 point estimate (Min, Most likely, Max)
Risk	Risks are specific events that will lead to deviation from the baseline causing a possible cost and/or schedule impact.	Less than 100%	3 point estimate (Min, Most likely, Max)
ADORE	A method of approaching risk management. A ssumptions, D ependencies, O pportunities, R isks, E xclusions	-	-

Risk Management Process Diagram



Data Collection

A data maturity assessment matrix



Tools and Techniques



Primavera -

This tool is predominantly used for scheduling analysis and is able to run scheduling uncertainty analysis.



@RISK –

Provides additional functions in Excel to enable the user to conduct cost risk analysis and cost uncertainty.

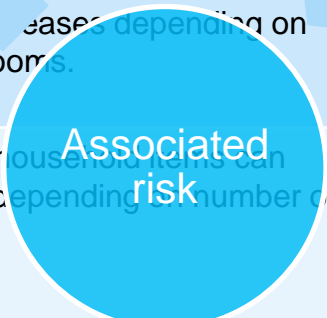
ADORE Analysis: Assumptions and Exclusions

- ☑ Cost estimating
- ☑ Employee
- ☑ Family
- ☑ Health
- ☑ Flight
- ☑ Housing
- ☑ Moving household items
- ☑ Salary
- ☑ Schooling
- ☑ Timing
- ☑ Travel
- ☑ Visa
- ☑ Temporary accommodation
- ☑ Communication
- ☑ Economics
- ☑ Pension scheme
- ☑ Car insurance and home insurance
- ☑ Additional school costs
- ☑ Mail re-direction
- ☑ Personal finance, exchange rate loss
- ☑ Additional travel costs i.e. food



ADORE Analysis: Dependencies

Name	Dependents	Associated risk	Associated Impact
Flight	Visa approval	If the time to approve the visa proves lengthy.	it may change entire schedule and could incur a cost from changing flight times.
Housing	Finding an appropriate housing located near to workplace.	Cannot find appropriate housing	General expenses accumulate whilst searching for a house i.e. hotel, travel etc.
Driving in Australia	Acquiring an Australian driving licence	Cannot drive within Australia	It is possible to drive for the first 3 months under a British licence; however an Australian licence is required after this.
Housing	Furniture being delivered	The furniture not being delivered	Could lead to a longer stay in hotel, increasing costs.
Cost of air freight	Number of heirlooms	Costs increases/decreases depending on the number of heirlooms.	Costs increases due an increase in the number of heirlooms.
Cost of disposal of household items	Number of items needing disposal	Cost of disposal of household items can increase/decrease depending on number of items disposing.	Cost of disposal increases due an increase in the number of heirlooms.



ADORE Analysis: Risks (Opportunities)

Project Risk Register Summary

Project: **SCAF**
 Manager: **Andrew Collings**

Updated 31-Mar-14

Risk score:
 = Probability x Impact score

Risk Ownership				
Risk ID	Risk Title	Owner	Risk Score	Response
1	Exchange Rate Worsens by 3% or more	QinetiQ	5	Acceptable
2	Inflation Increases by more than 1%	QinetiQ	5	Acceptable
3	Visa Application is Rejected	Employee	12	Acceptable
4	Flight is delayed or cancelled	QinetiQ	0.5	Acceptable
5	Flight is missed	Employee	7	Acceptable
6	Items sent by airfreight are lost	Employee	8	Acceptable
7	Company car does not arrive at airport	QinetiQ	3	Acceptable
8	Temporary accomodation is double booked	Employee	6	Acceptable
9	Suitable permanent accomodation cannot be found in	Employee	2	Acceptable
10	Deflation increases by 1%	Employee	2.5	Acceptable

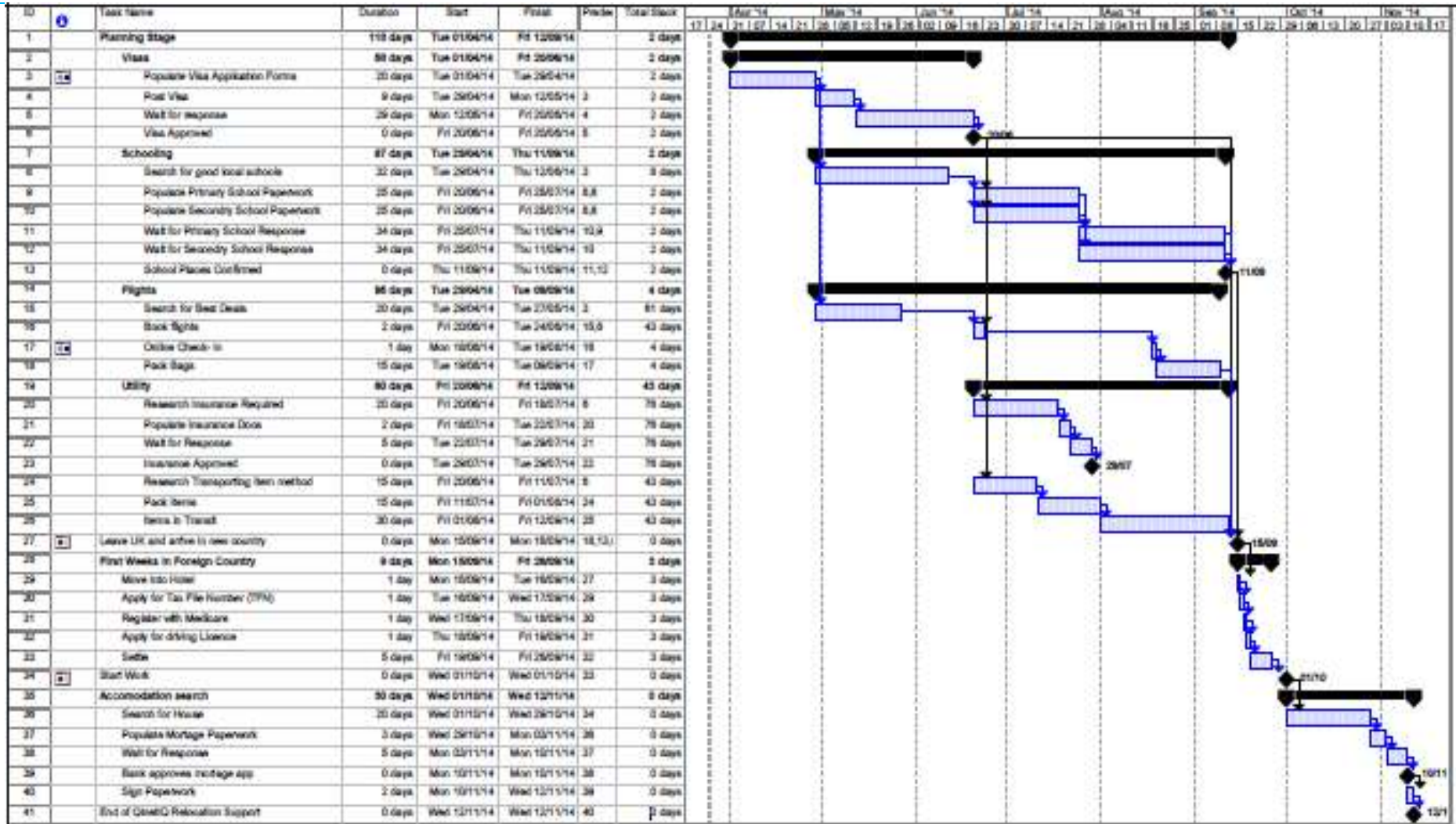
Cost Implications		
Prob	Impact/Effect	Weighted
10%	369	37
20%	138	28
12%	4,380	526
5%	200	10
1%	6,800	68
1%	100	1
1%	65	1
1%	275	3
1%	550	6
10%	138	14
		692

‘The Risk Register is a tool to assist Project Managers in identifying likely sources of risk and the impact they may have on achieving objectives for target expenditure.’ - *Government office for the North West, 2003*

ADORE Analysis: Risks Mitigation

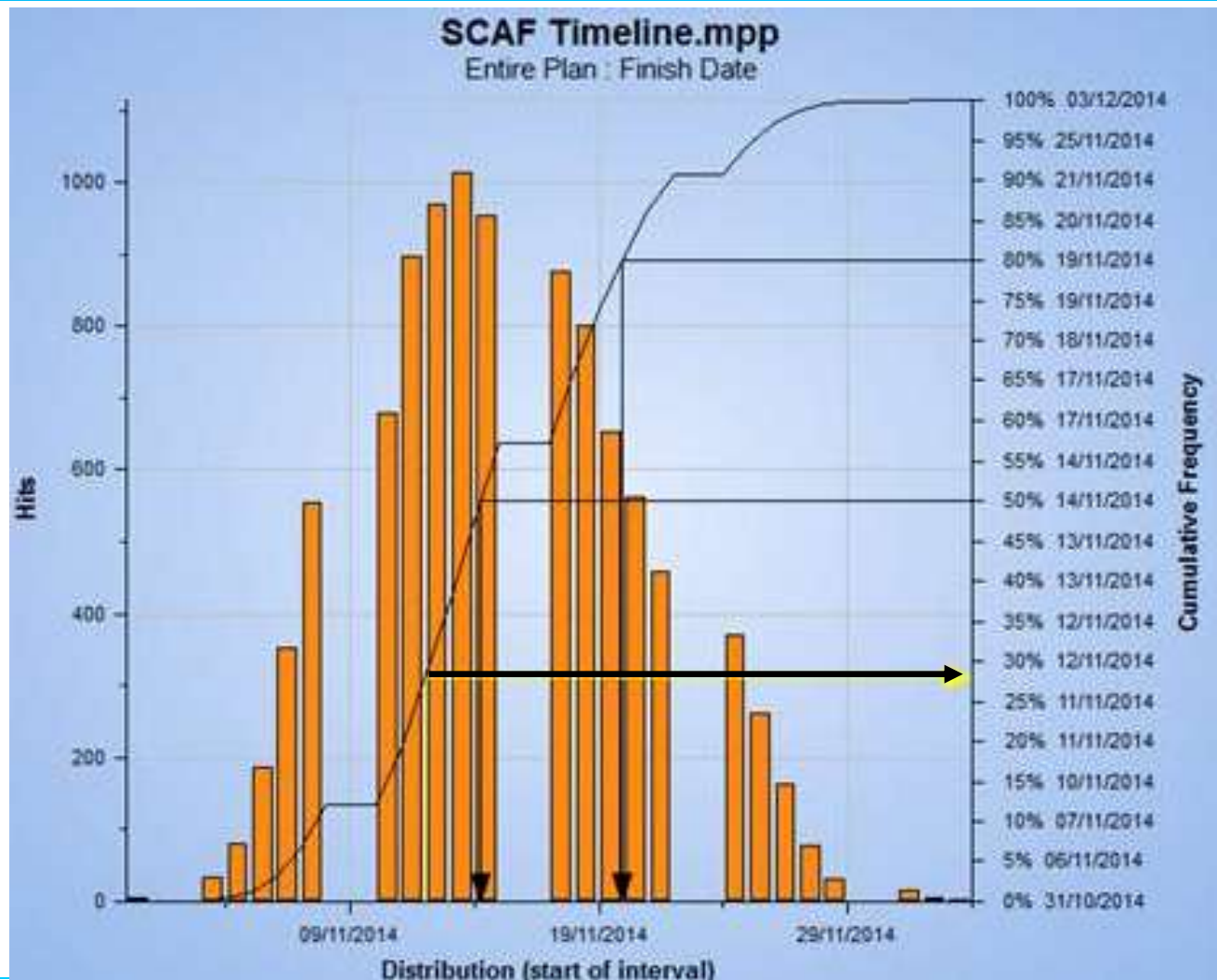


Schedule analysis: Baseline Schedule.



Schedule Analysis: Uncertainty Adjusted

A cumulative distribution plot indicating the likelihood of the project occurring within certain dates.



Cost Analysis: Baseline Cost and Uncertainty

Title	prob	Anti-prob	Cost (£)			Monte Carlo
			Best Case	Most Likely	Worst Case	
Visa	1	0	4380	4380	4380	4380
1 Child, 1 Adult Passport (for both Children)	1	0	136	136	136	136
Postage	1	0	8	13	61	38
Phone Bill	1	0	0	32	32	16
Flights (4 adults)	1	0	6104	6800	20000	11646
Disposal of household items	1	0	193	232	463	312
Air freight for small heirlooms	1	0	100	120	280	120
Taxi to airport 15/09/14	1	0	45	45	65	49
Temporary accomodation 15/09/14 - 15/11/14	1	0	3330	4950	8635	6644
Food and drink allowance before starting work 15/09/14 - 30/09/14	1	0	900	900	900	900
Permanent accomodation deposit	1	0	1200	1600	1749	1359
Essential Furniture - double bed; 2 x Single bed; Wardrobe x 4; Sofa; Dining Table and Chairs.	1	0	1200	1430	2500	1446
			Deterministic =	20638		27045 = Uncertainty

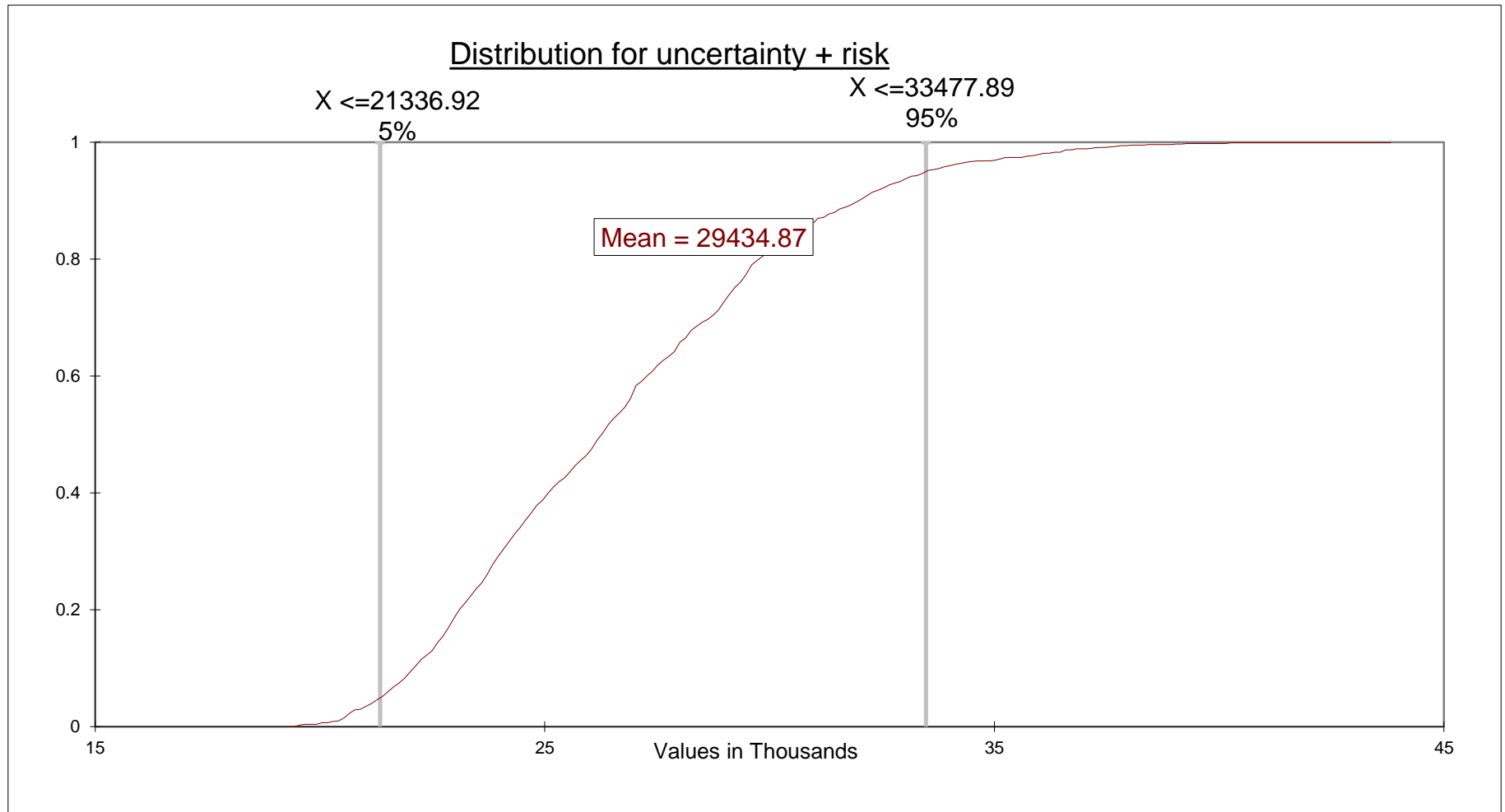


Cost Analysis: Risk Adjustment

Risks	prob	Anti-prob	Risk occurrence	Best Case	Most Likely	Worst Case	Monte Carlo
AUS:GBP exchange rate worsens by more than 3%	0.1	0.9	1	277	369	692	468
Australian Inflation rate increases by more than 1%	0.2	0.8	0	92	138	277	0
Visa Application is Rejected	0.12	0.88	0	4380	4380	4380	0
Flight is Delayed or Cancelled	0.05	0.95	0	50	200	500	0
Flight is missed	0.01	0.99	0	6104	6800	20000	0
Items sent by Air Freight are lost	0.01	0.99	1	50	100	200	121
Hire Car does not arrive at Airport	0.01	0.99	0	45	65	350	0
Temporary accommodation is double booked	0.01	0.99	0	100	275	550	0
Suitable permanent accommodation can't be found in allotted time	0.01	0.99	0	275	550	1100	0
							589 risk
							27634 uncertainty + risk



Cost Analysis: Uncertainty/Risk Adjustment



Interdependencies: Schedule and Cost

Explanation

Interdependencies between scheduling and cost exist in cases where scheduling risk, i.e. delayed flights, causes additional costs to be incurred.

Scenario 1

If a permanent place to live is not found in the allocated time this could increase the total cost; however it will not be reflected in the budget as the company removes liability.

Hotel cost per week: £618.

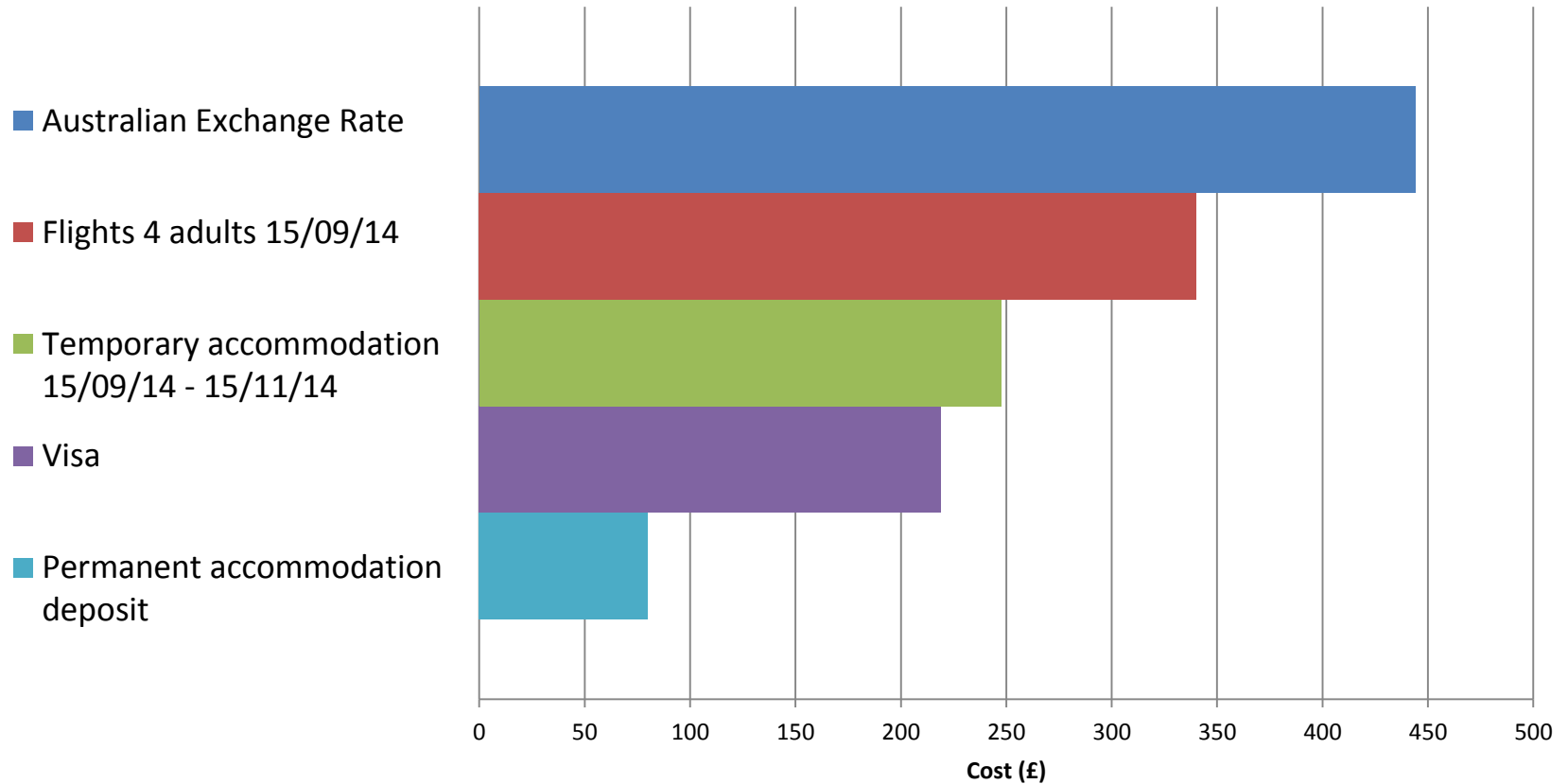
2 week over-run, Total Cost: £1,236

Scenario 2

If the flights are substantially delayed, it could incur an extra cost from food, drinks and entertainment whilst at the airport. In the worst case it may require an overnight stay in a nearby hotel.

Sensitivity Analysis

Sensitivity from 5% fluctuations of significant costs



Budget Request

Our final budget request is for **£33,500** in 2014/£ Economics.

It covers the following:

- Visa (2 adults, 2 children)
- 1 adult (16 yrs) and 1 child passport
- Phone bill
- Flights for four adults
- Disposal of household items
- Air freight for small heirlooms
- Taxi to airport
- Temporary accommodation [15/09/14 - 15/11/14]
- Food and drink allowance prior starting work [15/09/14 - 30/09/14]
- Permanent accommodation deposit
- Essential furniture - double bed, 2 x single bed, 4 x wardrobe, Sofa, Dining Table and Chairs.
- Additional ad-hoc costs that may be incurred.
- Cost contingency to factor in worse possible scenarios.
- Exchange rate and inflation loss.

Lessons Learnt

Lesson 1 – Leave sufficient time to perform preliminary presentations to internal staff.

Lesson 2 – Understanding the importance of risk, uncertainty, and their differences.

Lesson 3 – The size of the group impacts the exercise.

Any Questions?



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Business Analysis



Sources (1)

Name	Source	Maturity class (cost data)
Driving licence laws	http://emigratingtooz.com/pages/motoring/drivinglicense.aspx	N/A
Definition of risk register	http://www.nwua.ac.uk/Projects/Archive/European/Objective2/Docs/ERDF/Project%20Risk%20Register%20Guidance.pdf	N/A
Visas	www.immi.gov.au	1
Child passport	https://www.gov.uk/get-a-child-passport	2
International Postage	www.royalmail.com/price-finder	2
International Phone Calls	www.productsandservices.bt.com	2
Flights	www.skyscanner.net as of 17/03/2014	2

Sources (2)

Name	Source	Maturity class (cost data)
Disposal of household items	www.chambers-group.co.uk	3
Temporary Accommodation	www.Expedia.com	2
Food and Drink Allowance	QinetiQ SME - ROM	4
Deposit on Permanent Accommodation	www.realestate.com.au	3
Essential Furniture	www.ikea.com	4