Modified Enlarged 18 pt

OXFORD CAMBRIDGE AND RSA EXAMINATIONS

Wednesday 7 June 2023 – Afternoon

Level 3 Cambridge Technical in Business

05834/05835/05836/05837/05878

Unit 3: Business decisions

INSERT

INSTRUCTIONS

Do not send this Insert for marking. Keep it in the centre or recycle it.

INFORMATION

This Insert contains the pre-release material that you have already seen.

COMPUTERS FOR DEVELOPMENT

The charity

Computers for Development (CFD) is a charity based in Birmingham in the West Midlands of England. The charity was set up by Charlie Bamford and her friend Jack Morten when they both worked as teachers in the same school. One day in 1999 Charlie, who was also the school's recycling co-ordinator, was walking past the school's rubbish skip and saw the caretaker throwing an old computer into it. She asked why the computer had been put into the skip and was told that there was nowhere else to put it – nobody was interested in old computing equipment. That lunchtime, Charlie talked about this with Jack and they quickly agreed that they ought to do something. Jack, who had worked in a school in Botswana, Africa, mentioned that the school in Botswana could not afford computers of its own. Charlie and Jack realised that there was an opportunity to refurbish computers that were no longer wanted in the UK and send them to schools in Africa. At that moment CFD was born. Charlie and Jack were its founding trustees.

Individual members of the public, and organisations, generously donated money and old computers to the charity. Charlie and Jack refurbished the old computing equipment in their spare time. They made sure that the computers were in working order and free of any personal data or unlicensed software, before being shipped to Africa. The charity made a surplus on its activities in its first year of operation.

Since then Charlie and Jack have become more skilful in updating components such as memory chips and hard drives, ensuring that the devices have the capacity to be used in the African schools for many years. CFD has come to rely heavily on a small team of volunteers. The volunteers assist in refurbishing the computers and transporting them to the couriers who are responsible for shipping the equipment to schools in Africa.

In more recent years the charity has seen many changes:

The number of desktop computers donated to CFD has gradually declined, but the number of laptops has increased.

In 2012 Charlie and Jack were joined by a third trustee, Sundip Dasgupta who works part-time in a furniture shop in Birmingham's city centre.

In 2014 Charlie retired from her teaching job and devoted more of her time to CFD.

In 2016 CFD began refurbishing tablet computers.

In 2017 Jack retired from teaching and devoted more of his time to CFD.

In 2020 Sam Murray, a Business Studies teacher from the school Charlie and Jack used to teach at, became the fourth trustee.

In 2022 Charlie had an accident and Jack's health deteriorated. They are no longer able to help refurbish the donated computers, although both continue to work alongside Sundip and Sam as the charity's four trustees.

The problem

Over the past five years the donations of both money and equipment have been declining. Many other organisations now exist in the UK to recycle and refurbish electrical equipment. Most of these organisations also refurbish smartphones, a service which CFD does not offer, even though these are currently the most popular way for people in many low-income countries, such as those in Africa, to access the internet. Recently, CFD's expenditure has exceeded the donations it has received; consequently the charity has operated at a deficit instead of the surplus it enjoyed from the start. Sam has calculated that the charity may well cease to be viable in two years' time if it cannot increase its income substantially.

Sam and Sundip are aware that, for Charlie and Jack, the charity has been a labour of love for many years, but that Charlie and Jack's involvement may not continue for much longer. For Sam and Sundip their involvement with the charity is relatively recent and they would like the charity to return to surplus quickly so that its work can continue for many years to come. Sam and Sundip are concerned that the two founding trustees, Charlie and Jack, are still very influential in the business decision-making process, and have become much more risk-averse since they have retired from full-time teaching.

Sam and Sundip have met several times to discuss the situation, including one meeting with an external consultant. They have developed three options for CFD to take. Each option has the aim of achieving a surplus for the charity and increasing its activities.

OPTION 1 – SUPPLY LOCAL COUNCILS AND SCHOOLS

Sam has spoken to members of his local council. They told him that the council is interested in working with CFD to supply local schools and other council-funded community groups with refurbished computer equipment. The council operates waste-recycling facilities where households and businesses currently place their unwanted computer equipment. The council would allow CFD to refurbish computers dropped-off at these facilities.

Sam estimates that it would cost the charity £30 000 in capital expenditure to increase the capacity of CFD's refurbishing facilities. The charity would also need to recruit a full-time member of staff to oversee the work of the volunteers. Sam estimates that revenue expenditure would increase by £40 000 a year, including the cost of employing the new employee. The council has offered to fully fund CFD's capital expenditure costs with an interest-free loan over four years. In addition, the council would pay the charity £50 000 a year to help cover its expenditure.

Investment appraisal suggests a payback period for this option of 4 years and 6 months, with an ARR of 12.8% over the first six years.

OPTION 2 – OPEN A COMPUTER STORE

Sundip has been researching on the internet and has seen that there are a number of shops in the UK selling refurbished computer equipment. Sundip believes that there is a gap in the market for such a store in Birmingham. Sundip has identified a property on the edge of the city centre which would be suitable. The property is located in a low-income area with a high crime rate, hence it has an extremely affordable lease.

Sundip estimates that capital expenditure of £40 000 would be needed to pay the deposit on the lease and convert the premises to retail use. This could be partially funded using £10 000 from cash reserves with the remainder being funded by a five-year bank loan at a variable interest rate, initially of 6%. A part-time shop manager would need to be employed to run the shop and oversee the volunteers. Sundip estimates that this option would increase revenue expenditure by £18 000 a year.

Investment appraisal suggests a payback period for this option of 4 years and 5 months, with an ARR of 7.9% over the first six years.

BLANK PAGE

OPTION 3 – REFURBISH SMARTPHONES

There has been a rise in the number of organisations offering to pay people in return for their old smartphones. Sam and Sundip are concerned that, by being unable to refurbish phones, CFD is missing out on what is potentially a lucrative and growing aspect of the recycling industry. This third option would see CFD refurbish phones as well as computer equipment.

Smartphones are very susceptible to damage. Sam and Sundip are aware that many such devices would require extensive refurbishment, including new screens and batteries. CFD could need to recruit additional volunteers to refurbish phones and ensure acceptable levels of productivity. Since most phone recycling businesses operate online, CFD would need to set up and operate a website in order to compete. The website would enable people to donate their unwanted phones to the charity for refurbishment.

Sam estimates capital expenditure of £20 000 would be needed for this option. In addition, revenue expenditure is likely to increase by £15 000 a year. The capital expenditure would be partially funded using £10 000 from cash reserves with the remainder being financed by a bank loan over four years at a variable interest rate, initially of 7%.
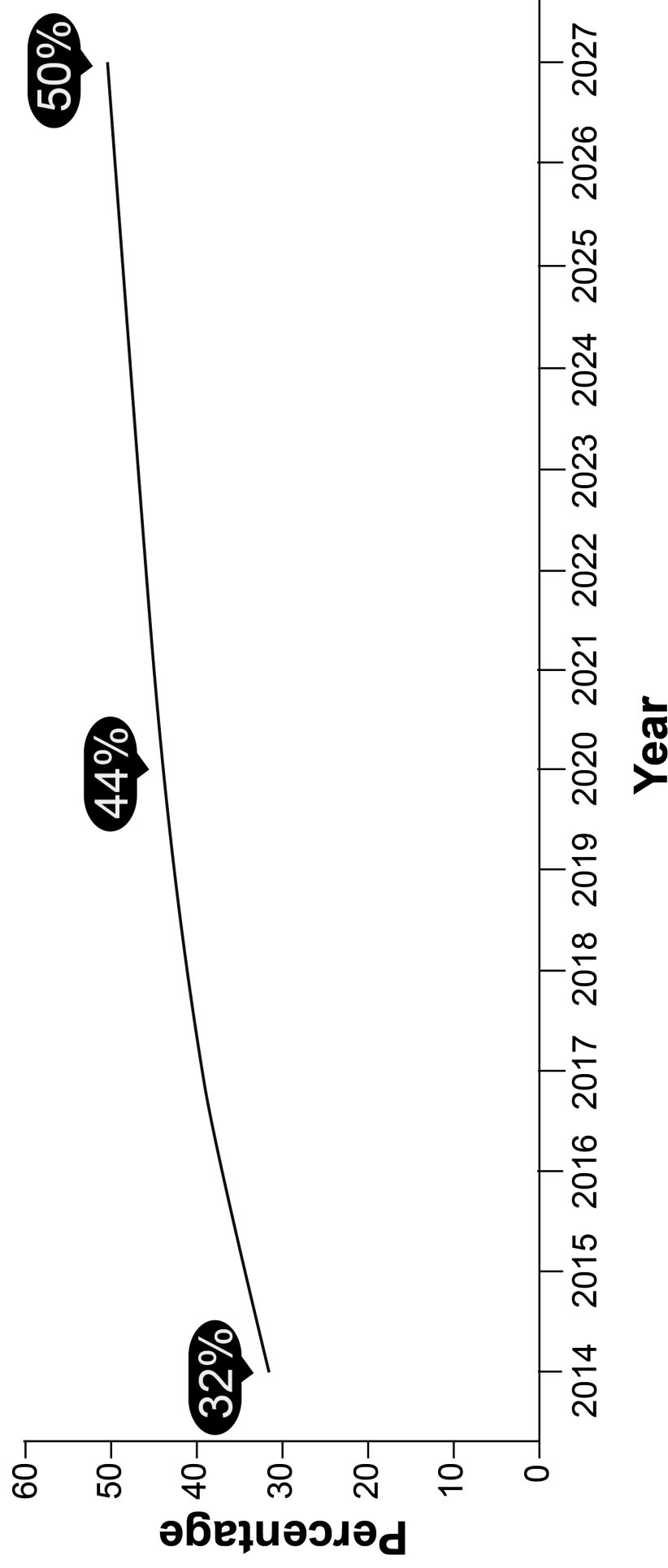
Investment appraisal suggests a payback period for this option of 5 years, with an ARR of 5% over the first six years.

APPENDIX 1

Mobile phone usage in Africa 2014-2027 (2022-2027 projected)

Percentage of population with access to a mobile phone

APPENDIX 2

The world's fastest growing waste problem

Discarded laptops, mobile phones and electronic goods are now the world's fastest growing waste problem and must be tackled urgently, United Nations researchers have warned.

A new report by the United Nations University has found that the amount of electronic waste has risen by eight per cent in two years, with just 20 per cent being recycled.

On average, each Briton throws away between 20 kg and 25 kg of electronic waste each year. Most of this waste simply piles up unused in people's homes, ends up in landfills or is incinerated.

"This report shows that the amounts of electronic waste continue to grow, while too little is recycled", said Jakob Rhyner, Vice-Rector, United Nations University. "Discarded equipment, such as phones, laptops and TVs contain substances that pose considerable environmental and health risks, especially if treated inadequately".

The average smartphone lifecycle in Britain is now under two years. There are more mobile phone subscriptions and handsets (7.7 billion) globally than there are people on Earth (7.4 billion).

BLANK PAGE

Version 3