Company ABCDE

Project Proposal
Executive Summary

- ABCDE has identified major global opportunities in the rapidly growing target area, including:
  - Technology development of ABCDE’s existing market;
  - Expanding parallel markets to xxxxxxx (new markets for ABCDE);
  - Future emerging markets in the xxxxxxxx as well as industry specific develop needs for unique technology for their industry.

- ABCDE aims to capture significant market share in these opportunities that will result in growing its annual revenue to £xxx, a growth of >100% in 3 years

- Addressing the market opportunities open to ABCDE requires a 2 – 3 year expansion plan which has a major new product introduction programme at its heart. The NPI programme will consist of:
  - Xxxxxxx
  - Xxxxxxx
  - Xxxxxxx

- The NPI programme will result in a major expansion of the engineering team by hiring an additional 16 staff plus additional 9 staff within the sales, operations and support groups, bringing the total new employment to 25 within the company.

- The additional cost of the NPI programme will be in the region of £xxx:
  - ABCDE aims to fund the majority of this programme from profit generated from current and future sales
  - A funding gap of around £xxx exists in ABCDE’s plans and this application will be made to SE to help address this.

- ABCDE plans to engage fully with the support programmes available from SE to ensure both the successful execution of our growth plans and the effective scaling of our business operations that will establish the company.
1. Applicant Details

Submitter: Applicant name  
email: Applicant email  
tel: xxxxxxx

Company: ABCDE Solutions Ltd

Project Title: xxxxxxx
2. Strategic Context

2.1 ABCDE’s Business Objectives

ABCDE is uniquely positioned to build a sustainably scalable company to address the needs of the target market. It is already market leader in the market segments it has addressed to date and has a global reputation for innovation, expertise and market leadership in product delivery. The demise of large establishments of competitor companies in central Scotland has been one of the enablers that allowed ABCDE to benefit from the wealth of industry knowledge already present in the local community.

ABCDE now has the established market presence, momentum, vision and opportunity to build on this base to create a company that is truly a global player based in Scotland that delivers sustainable scalability. Building on the strong tradition of sector excellence and utilising the skills and knowledge of local people, it is envisage that ABCDE can significant expand its employment base and grow the value it delivers to Scotland through export of product throughout the world.

This project is the fundamental basis of ABCDE’s growth strategy for the next xxx years and effectively represents the company’s business plan for this period.

The strategic objective is to transition ABCDE from a successful small company to a sustainable successful medium sized company with a global leadership position in providing test solutions in the evolving and expanding target markets.

ABCDE are fully committed to the strategic direction and the project described in this document. Availability of funding will determine the speed of execution and the technical depth that can be implemented over the project’s timescale.

2.2 Introduction to the Project

This project is concerned with the design and implementation of a new generation of relevant technology for testing in the target area. Its primary focus will be the xxxxxxxx (shown in yellow in the diagram below) that are currently evolving to efficiently and effectively developing technology from end customers. This segment is now commonly referred to as the xxxxxxx.

Figure 1: A diagram detailing the expanding target market was included here.

ABCDE has already established itself as a technology leader in this segment for the delivery of xxxxxxx used to emulate real-world situations. The industry has started the technology transition from xxxxxxx to xxxxxxx infrastructure. Early releases of prototypes have proven the viability of the technology. The industry has clearly recognised and accepted the value and need for the move forward to develop the proposed technology. This has triggered many companies to start developing plans to follow this transition to xxxxxxx, thereby reinforcing the need for test equipment. It is vital for ABCDE to sustain and grow its market leadership by following this trend.
and matching its customers’ technology roadmaps.

2.3 Target Markets

The target market is truly global. ABCDE’s core customer bases are spread across North American, Europe and South-East Asia. To date, over 85% of all orders received have been from outside the UK, with the annual percentage export business continuing to grow to >90% of the expected orders this year. Business has been secured in a number of countries across the world including USA, Canada, UK, France, Germany, Portugal, Italy, Israel, Austria, Norway, Sweden, Finland, Denmark, Holland, South Africa, India, Vietnam, China, Australia, Korea and Japan. Of particular note is China. ABCDE has recently expanded its sales team in China to 3 people (whom are supported by the ABCDE operations in the UK) as this country offers significant growth opportunity and the potential to become as big an opportunity as the USA. Other geographic hot-spots include India and the emerging economies in the Asia-Pacific rim.

ABCDE has recently performed a strategic review holding one-to-one calls with over 25 industry experts from across the globe and across the industry sectors i.e. relevant manufacturers and suppliers. In addition to identifying that the technological transition is underway, it has enabled ABCDE to identify a clear opportunity where it can build on its success to date and achieve sustainable, scalable growth.

Figure 2: A diagram detailing the company’s current opportunities and a paragraph explaining these was included here.

2.4 Growth Strategy

In order that ABCDE can maximise the market potential it has identified, a three-element strategy has been developed;

1. Strategy 1
2. Strategy 2
3. Strategy 3

The focus and flag-ship functionality of the new technology will be the delivery of xxxxxxx capability. ABCDE will need to deliver an innovative and technically challenging end product if it is to be successful at addressing the relevant technology wave as well as all the other technology waves shown in the chart. The scope of this end product will be unique in a global sense. There are no other UK based companies in this sector, and the few other companies that exist worldwide do not have the combination of skills, knowledge and proven track record in this market space to address the range of opportunities open to ABCDE. Time to market is always a factor and it is critical for ABCDE to sustain its growth trajectory that it;

- Demonstrates to the industry that it is following the relevant trend.
- Flags the arrival of a 3rd generation technology, with the goal of supporting xxxxxx while addressing the other technological opportunities in parallel.

- Continue to support current products to reap the benefits from its leadership position and to demonstrate to current customers that ABCDE is a company that can be trusted to provide investment protection of their equipment purchases.

2.5 History

ABCDE was founded at the start of 2006. Its first product was launched to the market in October 2007, with first shipments in December that year. ABCDE first moved into profit for the six month period ending March 2010. The company has remained in profit since that time. The following table summarises the headcount and turnover figures for the company:

<table>
<thead>
<tr>
<th>FY (Apr-Mar)</th>
<th>Revenue</th>
<th>Total Headcount (based in xxxxxx)</th>
<th>Total R&amp;D Heads</th>
</tr>
</thead>
<tbody>
<tr>
<td>'06</td>
<td>-</td>
<td>1 (1)</td>
<td>1</td>
</tr>
<tr>
<td>'07</td>
<td>£xxx</td>
<td>7 (7)</td>
<td>5</td>
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<tr>
<td>'08</td>
<td>£xxx</td>
<td>11 (11)</td>
<td>8</td>
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<tr>
<td>'09</td>
<td>£xxx</td>
<td>14 (12)</td>
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<tr>
<td>'10</td>
<td>£xxx</td>
<td>22 (19)</td>
<td>15</td>
</tr>
<tr>
<td>'11 est.</td>
<td>£xxx</td>
<td>33 (27)</td>
<td>17</td>
</tr>
</tbody>
</table>

SE has been an essential partner to ABCDE throughout its existence. The Founder was mentored by the High Growth Team base in Glasgow from the very start of the company, providing essential knowledge on guiding him through the critical first three years as the ideas, market and product was developed. ABCDE has continued to benefit from being accounted managed since that time.

ABCDE has benefited from SE’s programmes providing financial support in the development of the company’s engineering core skills base having received SMART, SPUR and R&D grants in the past. SE is also a shareholder following the utilisation of the Co-investment programme when equity based funding was raised in 2007 & 2009.

The programme of mentoring and financial support that ABCDE has received throughout its life from SE has been an essential catalyst to the success achieved to date. This support has enabled ABCDE to realise its potential of developing a
technology company based in Scotland with global impact and achieving profitability within a relatively short period.

2.6 Company impact

Following an organic growth strategy will not support the achievement of the goals set out earlier in the Growth Strategy section in the timeframe expected by the market. A new platform will be a major technical and resource intensive challenge for ABCDE. Coupling the new technology to this will overstretch the financial resources available from forecasted revenue from current product lines.

ABCDE currently has 27 employees in xxxxxxx and 6 sales staff bases in North America and Asia. All engineering, marketing and operations are performed by the xxxxxxx team, 85% of posts requiring graduate level education. The engineering team consists of 17 people. Manufacturing is also done locally (using xxxxxxx), and numerous other people around the local community are employed as contractors to perform various specialist based tasks. The management team are all based in xxxxxxx where all the strategic and tactical decisions are made. There are no plans to change this high-level organisation structure as a result of this growth plan with the core of the company remaining in xxxxxxx.

If ABCDE is to develop all the market opportunities listed earlier, it is estimated it will need to double the size of the engineering team over the next 18 months along with the expansion of organisational infrastructure required to support this growth. This is a major challenge and one that is not stated lightly. However, the team that has already been assembled has a wealth of experience and knowledge in this market space and is uniquely position, not just in UK terms but in global terms, to achieve the stated goals if resourced appropriately. The successful execution of this programme is estimated as moving the turnover from £xxx for this financial year to an estimated £xxx in FY15.

3. Nature of R&D to be Undertaken.

3.1 Project overview

The development of a new platform aligned to the long-term technology roadmap of ABCDE’s customers is critical to realise ABCDE’s growth potential. The headline technology is clearly xxxxxxx which will become the used in the target industry. It is vital ABCDE follows this trend to grow and protect its business. Customer feedback has clearly indicated this migration to the proposed technology as a clear market trend is recognised, (refer to Appendix X for a list of customer engagements). Experience in this market space shows that once the new technology is accepted, it is vital for test equipment to be able to demonstrate a roadmap to deliver the end product.

While the new technology must be able to support xxxxxxx, it must also support xxxxxxx.
ABCDE has a successful business today addressing previous technology, the current technology is predominantly deployed for xxxxxxx. The roadmap delivering the new technology will also need to address a wide range of capability and functionality. This capability will need to operate on xxxxxxx. The most effective method to deliver this capability, both from market impact and engineering risk management, is to adopt a multi-strand structure of the project plan. The benefits of this approach are:

a) Development of the new features for the new technology in a staged approach, implementing the capability at the lower rates early in the plan to prove and verify this functionality in readiness for the integration into the new technology. This will be essential to achieve a fast release of the broad range of features that will be required to be successful in the end product.

b) Migrate the engineering from the current technology into the new technology. This will require xxxxxxx. Re-use is vital to avoid all the current engineering having to be recreated which would see a huge increase in the project costs.

c) The early release of xxxxxxx will be critical to complete the market assessment, providing the opportunity to engage with customers with representative features that will be needed for the end product. This marketing approach has been very successfully used in the past to develop relationships with key customers and also allow early feedback into the engineering team to modulate/adjust/enhance the specific features to ensure the final product delivered has a strong value proposition and hence ensure it can achieve a strong market share.

The complexity of this development means that there will be one lead project development, setting the backbone timeline and objectives, with a number of activities developing functionality early, releasing prototypes using the current technology in order to engage and optimise the product specification.

3.2 Project objectives

The objective is to produce a new platform that consists of the following elements and core capabilities:

- Objective 1
- Objective 2
- Objective 3
- Objective 4

The new technology will have to cover a range of capabilities and features as well as xxxxxxxx. Each of the following features will be considered as a chargeable option delivered on the new technology. Feature sets to be supported include;
A wide range of engineering skills will be required to deliver this technology. These include:

- Xxxxxxx
- Xxxxxxx
- Xxxxxxx
- Xxxxxxx
- Xxxxxxx
- Xxxxxxx
- Xxxxxxx
- Xxxxxxx
- Xxxxxxx
- Xxxxxxx

There are considerable technical challenges in all these areas that need to be overcome to deliver the proposed technology.

3.3 Project timetable

A project plan and Gantt chart for this technology development is shown in an accompanying document.

4. Significant Innovation for ABCDE

4.1 Innovation Challenge

The successful execution of this programme will require significant innovation in both the software and hardware aspects of the next generation of technology to be developed. An examples of the level of challenge and hence innovation required to
successfully execute this project is associated with performing xxxxxxx. It is not a simple matter of implementing the same hardware that exists in xxxxxxx to be tested. The test solution needs to be able to analyse in great detail the proposed technology.

xxxxxxx- A paragraph outlining the required testion was included here-xxxxxxx

ABCDE has team members with relevant experience but will have to hire other skilled engineers to assembly the teams necessary to deliver the programme in the target timeframe.

4.2 Technical Description

The new technology will leverage much of the knowledge built from the experiences with the current technology. However, to deliver the product ABCDE believes is required to win leading market share and that will require significant additional capability. It will require significant innovation to enable the new technology to meet the necessary challenges and incorporate the new capability that will enable the new technology to address a much wider range of applications than those addressed by the current technology available.

The primary engineering challenges that will require innovative solutions are associated with the following objectives;

A) Objective 1

B) Objective 2

C) Objective 3

D) Objective 3

E) Objective 4

F) Objective 5

G) Objective 6

H) Objective 7

Taking each item in turn, the project will approach and address these items as follows;

A) Objective 1

xxxxxx-A page detailing objective 1 was included here-xxxxxx

B) Objective 2

xxxxxx-A page detailing objective 2 was included here-xxxxxx
C) Objective 3

xxxxxx-A page detailing objective 3 was included here-xxxxxx

D) Objective 4

xxxxxx-A page detailing objective 4 was included here-xxxxxx

E) Objective 5

xxxxxx-A page detailing objective 5 was included here-xxxxxx

F) Objective 6

xxxxxx-A page detailing objective 6 was included here-xxxxxx

G) Objective 7

xxxxxx-A page detailing objective 7 was included here-xxxxxx

5. Project Management Arrangements

5.1 ABCDE’s NPI (New Product Introduction) Process

ABCDE have an NPI process based on the principles of xxxxxx project management methodology. The projects have cross-functional Core Teams that are responsible for both the commercial objectives as well as the technical objectives of the project. A core team will have a marketing, R&D and manufacturing member. All projects follow an NPI lifecycle with defined phases and checkpoints. A Project Approval Committee (PAC), made up of the management team, conduct the checkpoints and give guidance and approval to proceed to the next phase. During the implementation phase of a project, the Core Team will issue regular update reports on the progress and key risks associated with the project.

Figure 3- A diagram outlining the NPI process was included here.

Note: for the purposes of this grant application, the R&D phase is from “Initiate” to “First Customer Shipment”, although the project will continue until the technology is fully transferred to manufacturing for mature, steady-state production.

The project will be partitioned into 2 sub-projects teams. Each team have a lead person from R&D, Marketing and Manufacturing who will collectively be responsible for the project management of all the cross-functional aspects necessary
to deliver the project’s objectives. A Programme Manager will be responsible for coordinating the overall project and ensuring the longer term capability of the platform for supporting future products. The engineering resources are assigned to the project teams operating under the direction of their functional team lead.

Figure 4 – A diagram outlining the Project Organisation Structure was included here.

5.2 Project Personnel

The company currently has 27 employees in the xxxxxxx office. A large number of these people have experience from previous employment in the target sector. Most of this experience was gained with xxxxxxx, but there is also experience from employment with other smaller relevant companies. ABCDE has established a team of world-class individuals with proven experience in the target market. This experience will be critical to the company’s ability to deliver an innovative product that meets all the objectives stated earlier in this report. Key individuals that will be involved in the development are:

- Project Management: xxxxxxx and xxxxxxx will split the role of Project Managing such a large project.
  xxxxxxx- Details of each Project manager’s focus was included here-xxxxxxx
- Technical Marketing: xxxxxxx will have responsibility the Technical Marketing input. Xxxxxxx has over 10 years experience doing a Technical Marketing role with a previous company.
- Technical Lead, Hardware development: xxxxxxx will be the hardware technical lead with responsibility for the hardware architecture of the technology. He is an experienced engineer and led the development of ABCDE’s current technology.
- Technical Lead, Software Architecture: xxxxxxx will be responsible for the development of the software architecture for the new technology. He has over 20 years experience developing complex software systems, primarily for a previous relevant company.
- Technical Lead, xxxxxxx Software Architecture: xxxxxxx will be the software technical lead with responsibility for the xxxxxxx software architecture for the technology. He is an experienced engineer and led the development of ABCDE’s current product.
- Xxxxxxxx design: xxxxxxx and xxxxxxx will be contracted to develop xxxxxxxx. Both have worked recently with ABCDE on the current platform and both have experience working on similar technologies when employed by a relevant company.
- Verification Lead: xxxxxxx will be responsible for developing the verification strategy to prove the operation of the functionality of the technology. He currently leads the verification activities on the current technology and has 20
years of relevant experience.

- Mechanical Design Lead: A Product Designer will need to be identified to lead the development of the mechanical aspects of the technology.
- Manufacturing Team Lead: xxxxxxx will be responsible for ensuring the design takes into account manufacturing and production objectives and considerations.

6. Capacity Building

As previously stated, this programme of xxxxxxx development is at the core of ABCDE’s growth strategy for the 3 years. In order to execute this strategy, ABCDE will have to increase their R&D capacity by 16 full-time R&D positions. In addition, both the sales and operational side of the business has to increase to cope with the increase in activity to support the significant growth anticipated. Another 9 full-time positions (5 within Scotland, 2 US Sales, 2 Asia Sales) are expected to be added during the project period.

As well as building R&D capacity, ABCDE are currently recruiting a VP of Engineering role to head up the R&D function. A key part of the VP’s role is growing the capability of the R&D organisation to maximise our NPI delivery performance.

All new hires will be on a permanent basis with a view to building both capacity and capability to further exploit the many future market opportunities that will inevitably be present in the ever growing and developing telecommunications industry.

7. Global Competitiveness

7.1 Market Dynamics

New technology remains a critical element to the successful expansion of the target market. While everyday use of the target market continues to grow exponentially through the use for, for example, xxxxxxx, xxxxxxx, xxxxxxxx, xxxxxxx, etc, the price expected to be paid by the users continues to fall. The technology needs to continue to expand both the xxxxxxx and the range of services they offer. This needs to be achieved while continuing to decrease operation cost, and in particular, the cost per xxxxxxx. New technology that offers a decrease in cost is clearly a critical element for the companies to remain profitable in the fiercely competitive market.

One element of cost of delivery is xxxxxxx. The benchmark the industry looks for in a mature technology is that xxxxxxx. Improving the technology is a technically challenging objective and historically the first introductions of the new technologies never achieve the x3 price increase. The discontinuity in rate of deployment occurs when it is clear that the new technology is achieving costs of better that x5 the cost of the lower rates. This is the trigger for the industry to see the new technology as
viable (i.e. the major technical challenges are understood and solutions identified). History has shown that this is the point that the industry accepts the new technology will become prevalent because the price can now be foreseen as achieving the x3 through further technical innovation and the benefits of volume production.

The target market is on the cusp of crossing this boundary. Over the last few months, over 25 experts from across the industry have been contacted to discuss their views of the emerging technologies. (Appendix X lists the people contacted). The clear message received from these discussions is that the proposed technology will happen. The technological innovations have been proven and the need for the technology is unequivocal.

ABCDE’s primary customers are the R&D team involved in the development of new technology. Experience in the market has shown that when the industry advances in technology, the test solutions also need advance in technology. While customers will continue to test the current technology, their products will support both current and emerging technology. It is therefore necessary for ABCDE to achieve its business potential to aggressively follow this trend and be first to market the new technology supported on a xxxxxxx test solution.

In addition to the proposed technology, the other emerging technology that will be central to the target market is a technology called technology X. Technology X is also xxxxxxx and while not as significant today, it looking like being a key technology of the future. While the new proposed technology will not need to deliver this as part of the first release of the product, it will need to offer the flexibility and adaptability for technology X support to be added to the product at a later date.

The following charts show the market sizes, forecast market shares and estimated revenues that ABCDE is looking to generate by the successful addressing of these opportunities.

- **Looking at the Market Size** chart, the segments labelled W, X, Y& Z can be considered as the current available market segments associated with the currently available technology. The line labelled A is the sum of all these market segments. It can be seen that collectively, these markets are currently growing but expected to level off in FY14. It is envisaged that the combined market will start to decline after this point. The proposed market is shown as a single market, growing fast during the period of interest. It is envisaged the market will continue to grow and will sub-divide into more application focused segments, providing ABCDE with future growth opportunities.

- ABCDE’s **Market Share** is expected to grow in all markets being address except the X market segment. This is because the X market is already mature and ABCDE’s value is these applications are starting to be eroded by other solutions appearing on the market. This effect is as expected i.e. the primary value ABCDE delivers is in testing new technology.
The **ABCDE Revenue** chart shows that towards the end of the period shown, the revenues from the proposed project are already significant, and are expected will continue to be a growth engine in the subsequent years.

Figure 5- The current and proposed technology market size

Figure 6- ABCDE’s market share

Figure 7- ABCDE’s revenue

### 7.2 Marketing and Commercial Exploitation

ABCDE has an established global sales channel. This comprises of local Distributors that represent ABCDE in their territory.

In most cases, these Distributors cover the country they are based in. The exception is in the USA and China. As the USA is such a large market, the Distributors cover a region and ABCDE currently uses 5 different partners to cover all the key accounts. In China, it proved difficult to find a Distributor that provided appropriate coverage so ABCDE has 3 employees in China providing sales coverage.

For the proposed technology, the primary market at initial launch will be USA, China & Japan. There will be opportunities in the other regions but the market leading companies are based in these countries hence the focus to these to achieve early sales success.

At the time of launch, it is expected the street price for the new technology will be in the £xxx-£xxx range. The material price target is between £xxx-£xxx. This means that it will deliver around xx% gross margin.

The market for the new technology involves the same companies as that for ABCDE’s current products. In many cases, the design teams working on new technology will be different to those buying ABCDE’s products today. By using the current connections into these companies and asking for referrals to the appropriate design team, coupled to the growing market awareness of ABCDE, ABCDE is confident that it will be able to connect with the new technology design teams in order to realise the market potential of this product.

ABCDE will also instigate a marketing campaign to promote the new product as part of the launch activities. This will include email-shots to the list of all current customers of ABCDE products as well as looking to achieve coverage in the relevant
trade press. In addition, there are 2 high-profile conferences associated with this market space each year. xxxx is held in Europe in November timeframe and xxxxx is held in Colorado, USA around March. Each conference see between 120-140 industry experts attending for 3 days to receive an update on the current state of the technologies. ABCDE has been a lead sponsor in both these events in recent years, and the CEO is on the Steering Group for both events as well. ABCDE will use these events to launch the product with a high-profile launch including live demo during the event to increase market awareness of the new product availability.

8. Intellectual Assets Arrangements

All IP associated with the core technology that will deliver the customer value from the new technology is owned by ABCDE Solutions Ltd. All sub-contractors involved have been and will continue to be constrained contractually to having no rights whatsoever to ABCDE Solutions’ IP.

ABCDE already have a patent from the original platform development, No. xxxxxxx. It is expected that this patent will protect the IP that will be produced in the development of the new technology. If necessary, the patent will be extended to ensure full protection of ABCDE’s technology is maintained.

At this stage there is no known issue with infringement of patents.

9. Need for SE Support

As noted in Section 6, the demand for the new technology and additional functionality of both our current and adjacent markets is clear and requires a swift response. Without SE support in terms of reducing the overall investment requirement and thereby reducing the associated risk with this growth strategy (e.g. increasing the development team by 16 over the program period), the company will not be able to progress the technology development as quickly as planned. Short term consequences of this will be delay in delivery of key enabling projects by up to 12 months, which in turn will have a consequential impact on the ultimate release of the new technology. An initial estimate of the impact on turnover arising from the delay in the technology development could be in the region of £xxx just during the program period; this can be extrapolated to a significant reduction in the resultant company size in future years, however the larger concern regarding delays in the project ultimately surround the potential for loss of market share and market leadership, which are key attributes of ABCDE’s strategy.

The award of a R&D Grant will be critical to the success of this business venture. Without this support, the new platform development will not commence until the base business grows further to support the investment required. This will result in a 6-12 month delay in introduction of the technology which will lead to a loss of market share due to the lack of the full product capability required by the target customers. This will severely reduce growth in employment and may lead to a reduction if the damage to market share is not fully regained after the late release of the new
technology.

Timely execution of this project will be critical in the ability of ABCDE Solutions to hit the market window for this product.

The prospect of failure to launch on time will significantly impact the orders that will be secured. R&D Grant support will make it possible to build on the foothold in the market already achieved and enable the development of a Scottish based global player in the target market.

10. Project Costs

Refer to supporting document for a detailed breakdown of costs associated with this project.

xxxx- Three pages detailing a breakdown of the project costs was included here-xxxx

Appendices

xxxx- Four pages of appendices were included here-xxxx