Evaluation of Nexxus

Report to Scottish Enterprise

March 2011

SQW

Contents

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SQW

Executive Summary

1. This is the summary of a study by SQW in conjunction with IBP Strategy and Research (IBP) on behalf of Scottish Enterprise (SE) to provide an independent evaluation of the Nexxus project since 2008. The work was conducted during the period November, 2010 to February, 2011.

2. SQW was the lead contractor for this assignment with overall direction and responsibility for the delivery of all outputs. IBP provided support to the study by undertaking the primary research with the direct beneficiaries[1] of Nexxus.

Purpose and scope

3. The main objectives of this evaluation were to assess the following: the rationale for intervention; contribution to the Government Economic Strategy (GES); contributions to SE's objectives for life science sector development; performance of the project against its objectives and targets; efficacy of management information and performance measures; the nature of project benefits including an economic impact assessment; quality of management and delivery including Steering Group structure; and overall the usage, quality and demand associated with Nexxus' services.

4. Nexxus was launched in 2003. However, the time period for this evaluation is set as March 2008 to December 2010.

Methodology

5. This study used the following research methods:

- ***an Inception Meeting*** with representatives from SE and Nexxus – this was held in November 2010
- ***desk research*** – this largely included a review of project documentation and monitoring data supplied by SE and Nexxus
- ***design of research tools*** – three separate questionnaires were prepared for the following categories: business, non-business and stakeholders
- ***briefing session for interviewers*** – prior to the commencement of the telephone interviews with beneficiaries of Nexxus a briefing meeting was held with the IBP interviewers. This was attended by representatives from SQW, IBP, SE and Nexxus

[1] These beneficiaries include users (business and non-business) of Nexxus services.

- ***primary research*** – we received inputs via a telephone survey with direct beneficiaries of Nexxus, including: 123 businesses and 92 non-businesses (total 215 respondents) out of 'valid' population from the Nexxus contacts database of 186 businesses and 121 non-businesses (total 307 contacts)
    - this gives a total response rate for businesses and non-businesses of 70%
    - for businesses, this gives a confidence interval of 5.16% at the 95% confidence level, and for non-businesses a confidence interval of 5.02% at the same confidence level
    - we also received input via face-to-face and telephone consultations from key stakeholders. In total we received input from 14 consultees from the public and private sector (Annex A contains a full list of stakeholder consultees)
- ***interim reporting*** – initial findings from the primary research were presented to the client group including representatives from SE and Nexxus (including Nexxus Steering Group members)
- ***case studies of beneficiaries*** – studies of purposively selected case studies (business and non-business beneficiaries)[2]. We undertook in-depth telephone interviews with these selected beneficiaries. A total of five case studies have been prepared
- ***analysis and interpretation*** – we brought together and analysed all the primary and secondary evaluation evidence and prepared a draft report to SE
- ***final reporting*** – findings from our draft report were presented to the client group including representatives from SE and Nexxus (including Steering Group members). We received feedback on our findings and prepared this final report.

Background

6. Nexxus was first launched in 2003 within the West of Scotland as a networking organisation to: "establish a body to facilitate bioscience networking and profiling activities in the West of Scotland"[3]. The project promotes and supports research excellence, innovation and knowledge transfer within the Life Science (LS) community. This is through the provision of a range of services including: networking events with the aim to facilitate interaction and collaboration; development of communication channels and marketing material to raise the profile of the LS cluster within Scotland and internationally; and business development services.

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[2] The selection of case studies reflected e.g. geography; sector; type and level of Nexxus services used; evidence of benefits and impact (or not) etc.

[3] Nexxus Business Plan (2002).

7. In 2008, the remit of the project was extended to cover the East of Scotland, with three main objectives (for both West and East): community building, profile raising and opening opportunities. The expansion in the East is in "partnership" with the Edinburgh Science Triangle (EST) which represented the main stakeholders in the East.

8. The general structure of Nexxus comprises a Director supported by two Steering Groups (SGs) covering the West and East regions ("hubs"). The SGs are made up of senior individuals from industry, NHS and academia. They along with the Director provide overall leadership and direction for the Nexxus project. The SGs support the development of new ideas, initiatives, activities and monitor progress. Members of the West and East SGs are also part of a joint SG.

9. The two West and East hubs employ a manager, each supported by a team in their region for the operational delivery of activities tailored for their respective area. Although the core focus to date of Nexxus activities has been the Central Belt of Scotland, the project attempts to be 'pan-Scotland'.

10. Nexxus is a 'project' rather than a legal entity. The University of Glasgow acts as the legal entity for the project's funding and ensures compliance with funding obligations.

11. The total funding for the project covering the period 2008 to 2011 is £1.279m. This is from a combination of SE, ERDF, SEEKIT and other partners (see Section 2 for list of funding organisations).

Assessment of rationale and strategic fit

12. The nature and focus of Nexxus' activities continue to 'fit' well with the current SE response to Government policy. Nexxus continues to 'fit' well with and contribute directly to the objectives of key Scottish Government and SE strategies.

13. Nexxus continues to address market failure. There are diverse views among stakeholders on market adjustment over the period of Nexxus' activities, ranging from: "market failure is the same, not changed over time" to "market adjustment has occurred due to the pro-active 'match-making exercise' of Nexxus". The feedback from stakeholders is that whatever market adjustments have taken place since the formation of Nexxus there remain some intrinsic market failure issues that continue to require the support of a networking/facilitating function if they are to be addressed, for instance information asymmetry and imperfect information at the interface between the constituencies that Nexxus seeks to serve viz. industry, the research-base and the NHS.

Performance assessment

14. The overall finding on 'SMARTness' of Nexxus' objectives based on a literal interpretation of each objective statement is that:

- the community building and opening opportunities objectives are specific in part whilst the profile raising objective is less so

- community building is measurable, albeit in limited terms, but profile raising and opening opportunities are less so
- it is difficult to establish if the profile raising and opening opportunities objectives were achievable but the community building objective can be considered achievable, albeit over time
- objectives were relevant; in the context of policy and the LS sector strategy, and
- all three objectives are time-bound.

15. The cash-flow for the project has been managed well, bearing in mind the timescale left till the end of the project.

16. The project is generally a well regarded initiative in terms of outputs and staff/ management capabilities and delivery.

17. There is a transparent monitoring and reporting system which is fit-for-purpose. Most activities and outputs are tracked, recorded, verified and measured against targets. We highlight the web-based Customer Relationship Management (CRM) system which allows Nexxus staff to access, input and review information/ data as a valuable and innovative tool.

18. The project performance against the targets set for the project by ERDF and SEEKIT funders has been mixed. For targets relating to events the performance has been particularly strong. It is notable that the targets set by the funders are a mix of what we would regard as outputs and others that are desirable outcomes that are not directly in the gift of Nexxus.

19. Nexxus has been successful in developing a LS network and that a LS community (a sense of group identity) may indeed be emerging. It is less clear what is feasible for Nexxus to achieve next in building a LS 'community' more widely across Scotland: this will not only take leadership from stakeholders but also time and resource.

Project benefits and impacts

20. More than half of businesses surveyed report that Nexxus had led to improved market awareness (60%) and allowed them to establish new links with companies (58%). This was followed in ranking of benefits by the establishment of new links with the science/research base (41%) and improved technical awareness (41%). A high proportion of non-businesses reported similar benefits.

21. For the **sample** of companies which reported that Nexxus had made a positive difference to their turnover, the net GVA impact to date (2008/09 to 2010/11) including multipliers is estimated at **£2.11 million** (included in this total is one company that reports considerably greater impact than the others, i.e. it is an outlier in the data) **and £0.25 million** (excluding this outlier). The **future net GVA impact** (2011/12 to 2015/16) including multipliers is forecast by the sample of companies to total **£6.84 million**.

22. By extrapolation, across the **population** of 186 companies which have used Nexxus services, it is estimated that the net GVA impact **to date** (2008/09 to 2010/11) including multipliers is **£2.57 million** and the **future net GVA impact (2011/12 to 2015/16) is estimated to be £13.86 million**. This gives a **total net GVA impact of £16.41 million over the period 2008/09 to 2015/16**. It is important to emphasis that the figures are calculated based on a number of assumptions that we specify in the main report. The more robust turnover and GVA impacts remain those based on survey responses.

23. The estimated employment impacts for the **sample is 114 job years across the whole period of the evaluation (2008/09 to 2015/16)** and by extrapolation, across the whole population, the employment impact is estimated to **total 286 job years**. It should be noted that the majority of these employment impacts are anticipated benefits rather than jobs which have actually been created to date.

24. In terms of **cost effectiveness**, we calculate the impact of the project for the **population of 186 companies** as shown below. These economic impact ratios should be treated with caution because of the assumptions included in the extrapolation process. We consider our analysis to err on the conservative side.

Table 1: Economic impact analysis

	Sample		Population	
	Impact to date (08/09 to 10/11)	**Total impact (08/09 to 15/16)**	**Impact to date (08/09 to 10/11)**	**Total impact (08/09 to 15/16)**
Present value of costs	£1.28m	£1.28m	£1.28m	£1.28m
Present value GVA benefits	£2.11m	£8.95m	£2.57m	£16.41m
Net Present Value	**£0.84m**	**£7.67m**	**£1.29m**	**£15.13m**
Net Present Value (SE contribution)	£0.11m	£1.00m	£0.17m	£1.97m
Economic impact ratio (benefit cost ratio)	**1.65**	**7.00**	**2.01**	**12.83**

Source: SQW

Assessment of usage, quality and demand

25. The project's weakness is perceived to be its restricted reach i.e. Central Belt only, but this cannot be a criticism of the conduct of the intervention.

26. The project is regarded as innovative in refreshing its services portfolio over time, however there is some sense of spreading itself too thinly – and needing to re-assess what is the 'core' business.

27. There is good level although far from unanimous support of new candidate services; introduction of a group purchasing scheme will require market development to convince prospective clients.

28. We found good level of positive responses on willingness to pay but the sums involved per unit of purchase are relatively small.

Learning for development

29. We identify the following main lessons that can be considered as 'transferable learning':

- it is important to differentiate an intervention carefully in order to make it "visible" in what can be a 'crowded' landscape especially if looking for public sector support
  - ensuring complementarity of services with other forms of public sector support is relevant in developing the Life Sciences sector but clearly of wider relevance
- networks need to have an international outlook, not just domestic for the benefit of members and any public sector stakeholders
  - this is of importance in the Life Sciences in which knowledge exchange, innovation and sales all occur in an international market but also for other sectors that have a similar international dimension to the markets in which domestic 'actors' must succeed
- the membership, funding and governance of a networking organisation benefits from having a strong emphasis on 'triple helix' (public sector, industry and research base)
  - this is of relevance especially to all sectors that are science/technology-based and research intensive.

Recommendations

30. The recommendations below address the following issues:

- appropriateness of continuation of public sector funding
- developments/modifications for Nexxus' operation in future
- relevant market segments for the future
- positioning with respect to other initiatives in Scotland.

31. The networking function provided by Nexxus to facilitate achieving what one consultee referred to as ‘right people, right content, right time’ remains relevant – both at a policy/strategic level for the sector and for the organisations (businesses and others) that participate in the networking activities. The presence of similar networking bodies, many longstanding, in most areas with a strong Life Science cluster confirms the relevance of this element of ‘soft’ sector infrastructure. Therefore, we recommend that a Nexxus-type networking function be sustained.

32. Notwithstanding pointers to market adjustment and indications of a willingness to pay amongst some businesses, there is in our view continuing market failures to be addressed, failures which are encountered by SMEs in many sectors, including for example in their engagement in innovation, in accessing university expertise and in engaging large, complex organisations (in this context, the NHS). Therefore, we advise that a market failure rationale for continuing public sector support can still be sustained.

33. Importantly however, we recommend that the scale and use of any public sector finance is changed. Whilst we see justification for supporting a ‘core’ of information provision, awareness raising and pro-active community building activities, we caution against the proliferation of initiatives without careful examination of synergies and complementarities with other things already supported by the public sector. When defining the core it is notable, however, that networking bodies serving Life Science clusters elsewhere do tend to operate a diverse range of services.

34. Our recommendations are as follows:

- *define the ‘core’*: Nexxus should define its ‘core’ business around the networking function as indicated above and seek funding from the public sector (an enabling, more modest core grant) for this perhaps under some form of service level agreement. (However, in this context it would be relevant to ensure its stakeholders in industry and the research-base are fully aware of the diversity of roles and activities undertaken by peer networks internationally.)
    - this could include ‘community development’ activities in other parts of Scotland (i.e. expanding the domestic market) thus building on Nexxus’ success in rolling out its activities to the East of Scotland. Nexxus may require seedcorn funding to establish activities in new areas for a short time before any charging is introduced. However, we caution against ‘force fitting’ Nexxus on other areas where effective local networks may be in place: the value of a single national networking organisation needs to be ‘sold’ to those who already value their own networking facilities. (A development of brand hierarchies and the subsidiarity principle may be relevant here)
- *charging for events*: Nexxus should continue to convene a programme of ‘events’ informed by the needs and interests of its members – and it should charge for these at a price tested with its market
    - we have encountered no strong support for a membership subscription for anything like the portfolio of what Nexxus delivers at present

- a pay-per-use approach does receive more favourable feedback albeit the evidence base is small: we suggest that wholesale reliance on pay per use would be a ‘problematic’ business model for Nexxus to adopt with anything like its current mission. It may be made more viable as a business model if it is on top of annual membership subscriptions and/or a core grant from the public sector
- especially in the current economic climate, it is important that if businesses do value Nexxus in its present or an altered form that they demonstrate this by making a financial contribution

• *business support services*: we recommend that Nexxus continues to design its portfolio of services in discussion with SE and Business Gateway, in order to ensure the continuing complementarity of support and cross referral of companies

- arguably, these kinds of activity take Nexxus into the ‘market’ already occupied by business support providers, including providers supported by the public sector
- we consider it unlikely that the public sector would support another provider unless in the context of a more radical rationalisation
- however, we see no reason why Nexxus should not operate in this market if it receives the support (and can win the revenue) from its client base to do so. However, the presence of public sector SME support schemes exist because of market failures which Nexxus would need to overcome to succeed in financial terms. Nexxus’ ability to engage with businesses may make it a valuable partner to existing public sector schemes wishing to enhance their market penetration in the Life Science sector

• *international activities*: we recommend that any proposal for international activities need to take account of what is already in place with funding from the public sector and to ascertain if the Life Science cluster in Scotland is being well served by the existing service providers

- there is a good level of support amongst businesses and others in the survey for Nexxus’ international networking activities and for the provision of support to access contacts and finance, including in Europe. In addition to differentiating itself from other public sector funded organisations that do at least some of this (notably towards the European Union), it is difficult to be certain what *companies* would pay Nexxus for here. We recommend that any proposal for international activities need to take account of what is already in place with funding from the public sector and to ascertain if the Life Science cluster in Scotland is being well served by the existing service providers
- as with its existing relationship with Interface, Nexxus could serve as the key link to the Life Sciences community to make non-sector specific initiatives work more effectively for this key sector – subject to public sector funding being made available to it

• *group purchasing:* the group purchasing scheme along the lines of that operated by One Nucleus received lukewarm support from firms surveyed during this evaluation – we recommend that a firmer financial proposition needs to be tested with potential clients before it can be regarded as a strong revenue stream. As we indicate elsewhere, organisations offering such schemes tend also to offer a service to firms which permit them to calculate the cost savings that each might achieve from participation

- *avoid lobbying*: in agreement with the view of many consultees, we recommend that Nexxus avoid a lobbying role (at least on legislative issues) on behalf of the sector. However, we are not convinced that the presence of Nexxus and a 'conventional' trade association with a strong industry membership cannot co-exist, hopefully performing different but complementary functions. Of course, if public sector support is absent from both, it could be left to the market to decide which one to support, albeit potentially to the detriment of knowledge exchange and innovation in the sector
- *future Steering Group structures*: we recommend that further consideration be given to: consolidating the two Steering Groups into one; ensuring regular refreshing especially of industry members, and considering the participation of someone from outside of Scotland. Of course if Nexxus moves to an incorporated legal entity (see below) then the company board will wish to review additional steering/ advisory functions
- *status:* we recommend that Nexxus' status needs to change from a 'project' to some form of legal entity. A Company Limited by Guarantee would seem an appropriate form if it is to remain 'mission-driven' and not wholly commercial. This is to enable Nexxus to take forward new initiatives, including ones funded by the 'market'
- *connecting with the business base:* we recommend that Nexxus develops partnerships with those leading the major academic and NHS Life Science initiatives in Scotland who have an interest in engaging with the Scottish Life Science business base – the role of Nexxus would be to facilitate appropriate and effective connections with the business base. This is based on the fact that the most valuable asset held by Nexxus in addition to the credentials of its staff is arguably its current relations with businesses
    - we envisage that its networking activities would generate 'leads' of interest to these partners and to businesses (i.e. help in market making) but leave others to following up on specific 'prospects' for collaboration.
- *Nexxus name:* we found no strong support for or against retaining the Nexxus name. We recommend that Nexxus and its supporters maintain some flexibility here to reposition the organisation and how it is known to meet strategic interests.

1: Introduction

1.1 SQW in conjunction with IBP Strategy and Research (IBP) was commissioned by Scottish Enterprise (SE) to undertake an independent evaluation of the Nexxus project since 2008. The work was conducted during the period November, 2010 to February, 2011.

1.2 SQW was the lead contractor for this assignment with responsibility for overall direction and for the delivery of all outputs. IBP provided support to the study by undertaking the primary research with the direct beneficiaries[4] of Nexxus.

Purpose and scope

1.3 The specific stated objectives[5] of this evaluation are to assess the following:

- the rationale for intervention
- contribution to the Government Economic Strategy (GES)
- fit and contribution to SE's objectives and to life science sector development
- performance against project objectives and targets
- project benefits including economic impact assessment (in accordance with HM Treasury and Green Book principles and SE's economic impact guidance)
- the usage and quality of and demand for Nexxus' services
- the management and delivery including Steering Group structures
- management information and performance measures
- project learning points

[4] These beneficiaries include users (business and non-business) of Nexxus services.
[5] As identified in the Consultant's Brief.

- contribution to the equity and equalities agenda.

1.4 Nexxus was launched in 2003. However, the time period for this evaluation is set as March 2008 to December 2010[6].

1.5 The stated objectives for the study also include: dovetailing this study with the Nexxus Business Planning process; and presentation of key findings and recommendations for the future direction and delivery of the project[7].

1.6 At a project Inception Meeting held in November 2010 with representatives from SE and Nexxus the scope of the study was identified to cover the following:

- take account of the "external factors" influencing how Nexxus operates, specifically in relation to the Scottish Life Sciences landscape
- capture a "rounded picture" of Nexxus in terms of the balance between the qualitative and quantitative benefits and impact (i.e. including those which cannot be monetised) associated with the project – the evaluation is to provide robust evidence relating to network benefits and not just focus on estimating GVA impact
- make use of the summative aspects of the evaluation evidence on the performance of Nexxus to inform and shape its future services
- help steer the current Nexxus' Business Planning process which considers the future model, structure and funding of Nexxus
  - this study is to inform and be informed by this planning process and provide recommendations on future delivery and resourcing
- although the time period for evaluation is set for the period 2008 to 2010, the study is required to capture support provided to beneficiaries prior to 2008.

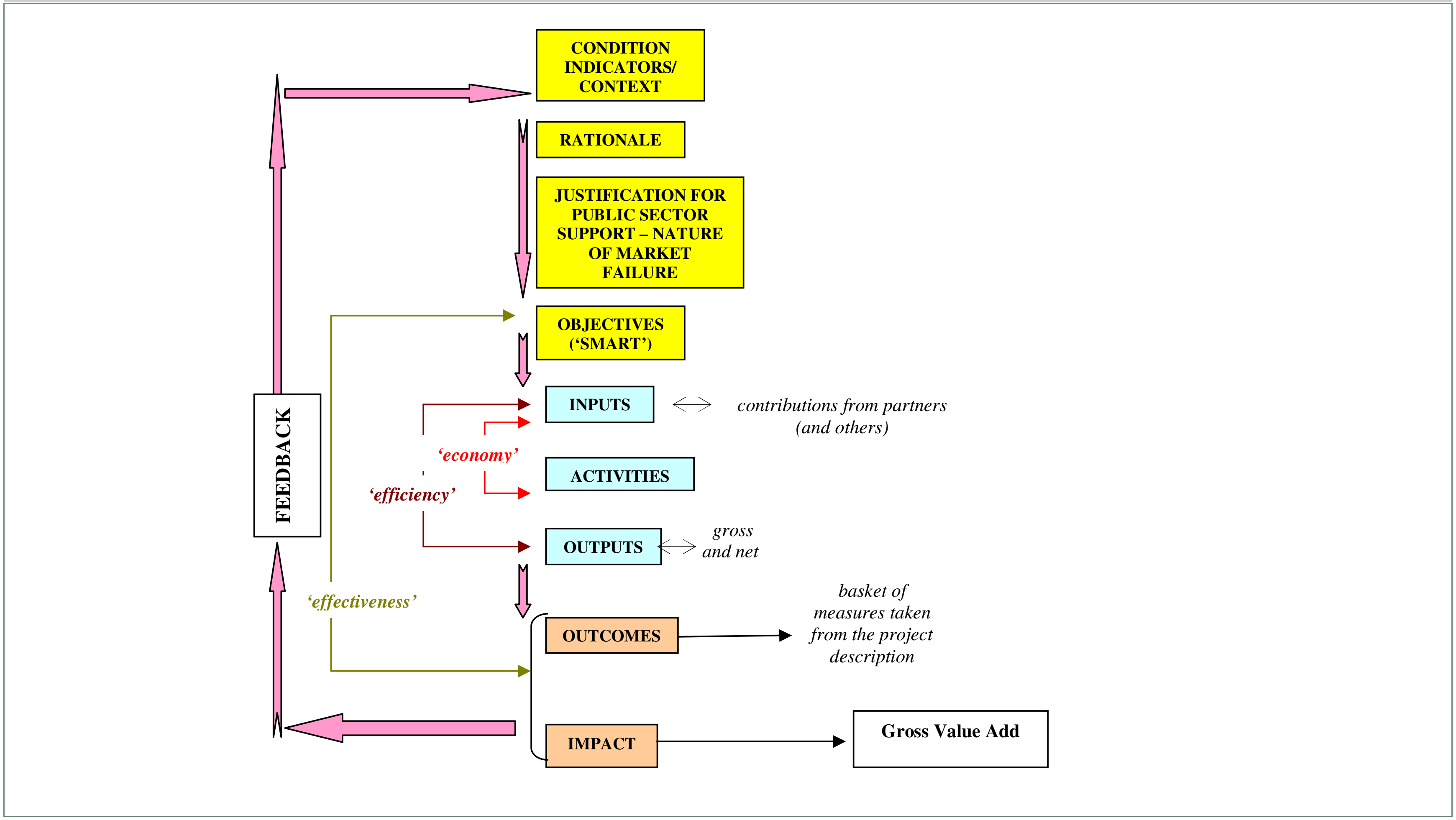
Approach

1.7 The approach to evaluation design and implementation we adopted for this assignment is based on understanding the underpinning *logic* and *theory of change* for an intervention. This provides a framework for the assessment of the rationale for this public sector intervention and its objectives, as well as the relationship between inputs, activities, outputs, outcomes and impacts. It provides a structured approach for the assessment of 'ultimate' impact and the value for money of the intervention i.e. a comparison of intervention costs and benefits (efficiency), the extent to which objectives are subsequently met (effectiveness) and the degree to which activities are delivered at minimum cost (economy).

[6] A previous independent evaluation has been undertaken of Nexxus covering the period 2003 to March 2008.
[7] The Consultant's brief identifies an additional objective: "summary and commentary on the findings of SE Networks research and learning from networking approaches". We are informed by SE that a separate independent study on networks is currently underway and the findings of are now not to be reviewed as part of SQW's evaluation of Nexxus.

1.8 This framework allows us to determine whether the rationale for the intervention is substantiated by evidence and that it has made a difference to the conditions it was designed to address. Figure 1-1 illustrates this generic logic model

Figure 1-1: Generic logic model



Methodology

1.9 This study used the following research methods:

- ***an Inception Meeting*** with representatives from SE and Nexxus – this was held in November 2010
- ***desk research*** – this largely included project documentation and monitoring data supplied by SE and Nexxus. For example: SE Approval Papers; prior Nexxus evaluation report; Government policy/ strategy documents; ERDF application; presentation material on Nexxus; contractual document; research papers on networks; and other relevant documentation
- ***design of research tools*** – two separate detailed survey questionnaires were designed for use with business and non-business beneficiaries of Nexxus. We also designed an interview guide for stakeholders, who included representatives from Scottish Government, SE, Nexxus and the two Steering Groups of Nexxus (West and East of Scotland)
- ***briefing session for interviewers*** – prior to the commencement of the telephone interviews with beneficiaries a briefing meeting was held with the IBP interviewers. This was attended by representatives from SQW, IBP, SE and Nexxus
    - interviewers were fully briefed on the nature of the Nexxus initiative and the objectives of the evaluation
    - the two survey questionnaires for businesses and non-business beneficiaries were also reviewed and refined
- ***primary research*** – we received input via the telephone survey with direct beneficiaries of Nexxus from 123 businesses and 92 non-businesses (total 215 respondents) out of ‘valid’ population from the Nexxus contacts database of 186 businesses and 121 non-businesses (total 307 contacts)
    - this gives a total response rate for businesses and non-businesses of 70%
    - in our view, this represents a very high response for an intervention of this nature. Thus the results reported in this report can be said to have a good degree of statistical robustness (further details of the results from the beneficiary survey are presented in a post-survey report in Annex B)
    - for businesses, this gives a confidence interval of 5.16% at the 95% confidence level, and for non-businesses a confidence interval of 5.02% at the same confidence level. In other words, if 50% of the sample of businesses answered a question in a given way we can be 95% certain that if all the population of businesses had responded the results would have been between 44.84% and 55.16% (i.e. within +/- 5.16% of the 50% response). Similar logic applies to non-businesses

- we also received input via face-to-face and telephone consultations from key stakeholders. In total we received input from 14 consultees from the public and private sector (Annex A contains a full list of stakeholder consultees)

- ***interim reporting*** – initial findings from the primary research were presented to the client group including representatives from SE and Nexxus (including Nexxus' Steering Group members)

- ***case studies of beneficiaries*** – using purposively selected case studies (business and non-business beneficiaries)[8]. We undertook in-depth telephone interviews with these selected beneficiaries. A total of five case studies were undertaken

- ***analysis and interpretation*** – we brought together and analysed all the primary and secondary evaluation evidence and prepared a draft report

- ***final reporting*** – findings from our draft report were presented to the client group including representatives from SE and Nexxus (including Steering Group members). We received feedback on our findings and prepared this final report.

Reporting structure

1.10 The remainder of this report is structured as follows:

- *Section 2*: paints the background to the Nexxus project including its history and main characteristics

- *Section 3*: provides an assessment of the stated rationale for intervention and its strategic 'fit' with government policy, SE strategy and life science (LS) sector developments

- *Section 4:* provides an assessment of project objectives, inputs, activities and gross outputs. It also gives an assessment of:
  - approaches to management information and performance measurement
  - management and delivery matters, including Steering Group structures
  - contribution to the equity and equalities agendas

- *Section 5*: presents the project benefits including: qualitative (non-monetised) benefits; an assessment of quantifiable economic impact; and it considers value for money issues

[8] The selection of case studies reflected e.g. geography; sector; type and level of Nexxus services used; evidence of benefits and impact (or not) etc.

- *Section 6*: provides an assessment of usage, quality and demand associated with Nexxus services
- *Section 7*: sets-out learning for future development. This includes information drawn from the case studies
- *Section 8*: presents our conclusions and recommendations
- *Annex A*: contains a list of consultees interviewed during our primary research

1.11 There are also three annexes supplied as separate documents which contain the following:

- *Annex B*: details the post survey report of beneficiaries (businesses and non-businesses)
- *Annex C*: contains copies of all research tools including the beneficiary survey questionnaires and the interview guide used during the primary research.
- *Annex D*: provides details of all our economic impact calculations based on company performance data. This is confidential and for SE purposes only.

2: Background

2.1 This section paints the background to the Nexxus project including its history and main characteristics. To gain an appreciation of the environment in which Nexxus operates, we briefly set out the wider LS landscape in Scotland.

Summary of the Scottish Life Sciences landscape

2.2 A summary of the main features of the LS sector in Scotland are as follows:

Definition

- it is diverse in nature with a number of sub-sectors covered under the banner of Life Sciences including: biotechnology; pharmaceuticals; contract research organisations (CRO); medical devices; diagnostics; specialist suppliers and support organisations
  - it also covers discovery; research and development; development of platform technologies and manufacture;
- it encompasses a wide variety of activities which cannot readily be classified in terms of Standard Industrial Classification (SIC) codes. However, a 'rough' SIC-based definition includes the following categories:
  - manufacture of pharmaceuticals, medicinal chemicals and botanical products[9]
  - manufacture of medical and surgical equipment and orthopaedic appliances[10]
  - research and experimental development on natural sciences and engineering[11]
- a wider definition of the sector would cover organisations that are not directly classified as belonging to the LS 'cluster', including organisations supplying products and services (including as an example professional business services).

[9] SIC 24.4
[10] SIC 33.1
[11] SIC 73.1

Size and capabilities

- it is reportedly the second largest 'cluster' in the UK and the location for 15% of UK Life Science companies, with in excess of 640 organisations which employ over 32,000 people
  - in 2008, the estimated turnover and GVA generated was £3.1bn and nearly £1.4bn respectively
- there is a strong Scottish Life Sciences academic/ research base
- key capabilities include: stem cells and regenerative medicine; experimental and translational/ clinical medicine; drug development; the CRO capability; medical technologies; diagnostics; bioinformatics and health informatics.

Life Sciences organisations/ initiatives

2.3 There is a plethora of support organisations and related initiatives in the LS landscape. To illustrate, we present below some of the main 'actors':

Table 2-1: Organisations/ initiatives operating within the Scottish LS landscape

Initiative	**Weblink**
Life Sciences Advisory Board (LiSAB)	http://www.lifesciencesscotland.com/lss/lss-about/lss-lisab.htm
BioIndustry Scotland (BIA)	http://www.bioindustry.org/
Scottish Life Sciences Association	http://www.scottishlifesciencesassociation.org.uk/
Scottish Imaging Network (SINAPSE)	http://www.sinapse.ac.uk/
Translational Medicine Research Collaboration (TMRC)	http://www.tmrc.co.uk/
The Scottish Centre for Regenerative Medicine (SCRM)	http://www.crm.ed.ac.uk/
BioDundee	http://www.biodundee.co.uk/
Life Sciences Scotland Aberdeen	http://www.lifesciencesscotland.com/lss/lss-connections/lss-networks/aberdeen.htm
Scottish Health Innovations Limited (SHIL)	http://www.shil.co.uk/
Scottish Universities Life Sciences Alliance (SULSA)	http://www.sulsa.ac.uk/
Scottish Stem Cell Network (SSCN)	http://www.sscn.co.uk/

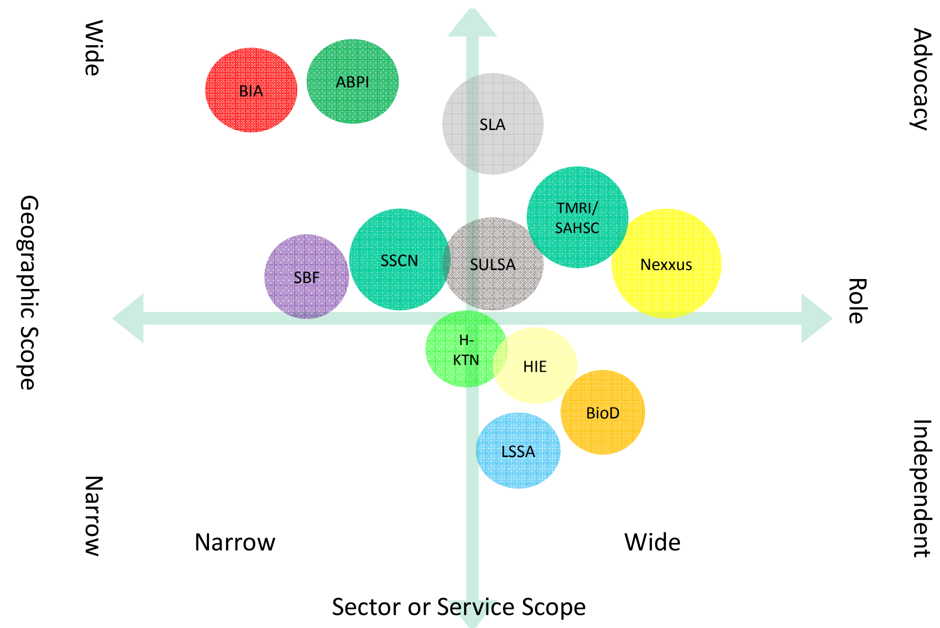
Initiative	Weblink
Scottish Institute for Cell Signalling	http://www.scills.ac.uk/
Scottish Bioinformatics Forum	http://www.sbforum.org/
Generation Scotland	http://www.generationscotland.org/
NHS Research Scotland Coordinating Centre	http://www.nhsgrampian.org/nhsgrampian/nrspcc.jsp?pContentID=7170&p_applic=CCC&p_service=Content.show&
Scottish Academic Health Sciences Collaboration (SAHSC)	http://www.cso.scot.nhs.uk/Publications/SAHSC%20Medical%20Experts%20Directory%2002.03.10.pdf
Edinburgh BioQuarter development	http://www.edinburghbioquarter.com/

Source: see weblinks above

2.4 It is also worth noting the national (and international) support for the LS cluster includes contributions from for example Scottish Development International; Scottish Enterprise; GlobalScot and various trade associations.

2.5 The figure below depicts relevant organisations/ initiatives in the LS landscape including Nexxus. It shows the latter's position relative to others with respect to its role, geographic and sector scope.

Figure 2-1: LS landscape



Source: SE

Profile of Nexxus

2.6 We present below a summary profile of Nexxus covering its history, purpose, structure partners/ funders and other key features.

History

2.7 Nexxus was first launched in 2003 within the West of Scotland as a networking organisation to: "establish a body to facilitate bioscience networking and profiling activities in the West of Scotland"[12]. The project promotes and supports research excellence, innovation and knowledge transfer within the LS community. This is through the provision of a range of services including: networking events with the aim to facilitate interaction and collaboration;

[12] Nexxus Business Plan (2002).

development of communication channels and marketing material to raise the profile of the LS cluster within Scotland and internationally; and provision of business development services.

2.8 In 2008, the remit of the project was extended to cover the East of Scotland with three main objectives (for both West and East): community building, profile raising and opening opportunities. The expansion in the East is in "partnership" with the Edinburgh Science Triangle (EST) which represents the main stakeholders in the East.

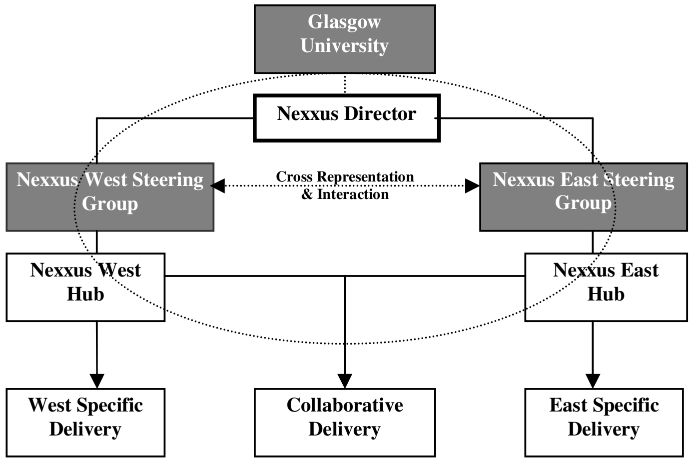
2.9 It is worth pointing out that although the initiation date for the current phase of Nexxus' activities was June 2008, staff recruitment did not start until December 2008 and the current Director was not appointed until September 2009. Nexxus has a no extra cost extension until at least January 2012.

2.10 The general structure of Nexxus comprises a Director supported by two Steering Groups (SGs) covering the West and East regions ("hubs"). The SGs are made up of senior individuals from industry, NHS and academia. They along with the Director provide overall leadership and direction for the Nexxus project. The SGs support the development of new ideas, initiatives, activities and monitor progress. Members of the West and East SGs are part of a joint SG.

2.11 The two West and East hubs employ a manager each supported by a team for the operational delivery of activities tailored for their respective areas. Although the core focus to date of Nexxus activities has been the Central Belt of Scotland, the project attempts to be 'pan-Scotland'.

2.12 Nexxus is a 'project' and not a legal entity. The University of Glasgow acts as the legal entity for the project and ensures compliance with ERDF and SEEKIT funding obligations.

Figure 2-2: Structure of the Nexxus model



Source: SE Approval Paper (2008).

Partners and funding

2.13 The sources of funding and partners for the project covering the period 2008 to 2011 are shown in the tables below.

Table 2-2: Project funding (2008 – 2011)

Source	Amount approved (£k)
Scottish Enterprise	169
ERDF	501
SEEKIT	378
Other partners (see table below)	231
Total funding	**1,279**

Source: Nexxus Evaluation Consultant's Brief (September 2010).

Table 2-3: Other partners

Partner organisations	
Glasgow – Edinburgh Collaboration	Edinburgh BioQuarter
Glasgow City Council	Edinburgh Technopole
East Dunbartonshire Council	Heriot-Watt Research Park
Renfrewshire Council	Pentlands Science Park
North Lanarkshire Council	Roslin BioCentre
NHS	University of Edinburgh
University of West of Scotland	Heriot-Watt University
Glasgow Caledonian University	Roslin Foundation
University of Strathclyde	Moredun Institute
University of Glasgow	City of Edinburgh Council
NHS Greater Glasgow & Clyde Health Board	Midlothian Council
NHS Lothian	West Lothian Council
Alba Innovation Centre	East Lothian Council
BioCampus	

Previous evaluation evidence

2.14 A previous independent evaluation of Nexxus was undertaken for the period 2003 to 2008[13]. This was the first evaluation of the project since its inception. Based on input from 55 interviews with Nexxus participants (including SG members) and five individuals "external" to the Nexxus network, the following findings were reported:

- funding received for the period 2008 to 2010 was c. £793.5k
- estimate of impact directly attributable to Nexxus (including multipliers) was:

[13] BiGGAR Economics (2008) Evaluation of Nexxus – The West of Scotland Bioscience Network. A final report to Scottish Enterprise Glasgow.

- up to £2.3m net additional GVA in the West of Scotland and up to £2.9m across Scotland
- up to 51 net additional FTE jobs supported in the West of Scotland and up to 64 across Scotland

- value for money:
  - £1 of Nexxus funding was reported as generating £3.65 of net additional GVA
  - one net additional FTE job was reported as creating £3.65 of net additional GVA.

2.15 It is not our role to re-visit the impact quoted above but we do note that much of this impact was generated in the research base i.e. not the business base.

3: Assessment of rationale and strategic fit

Strategic 'fit'

3.1 The original SE Approval Paper for Nexxus funding (dated 17th September, 2008) noted under the statement of strategic objectives that: "almost every major Life Science regional location in the UK, Europe and the US has established organisations or associations with the express purpose of facilitating networking and profiling activity". This is a view repeated by many consultees in the course of this evaluation and it is a view with which we concur. Nexxus continues to perform this function, albeit only over part of Scotland.

3.2 As indicated in its Business Plan for 2010/13[14], SE, as a key funder of Nexxus, operates within the policy context set by the Scottish Government's Economic Strategy[15] (GES). The latter sets out the main drivers which will increase sustainable economic growth across Scotland:

- increase productivity and competitiveness
- solidarity: reduce inequalities across all individuals
- cohesion: reduce the disparity between the regions of Scotland
- sustainability: enhance the environment and reduce emissions
- stimulate population growth
- stimulate economic participation.

3.3 In the context of Nexxus, the driver of economic growth most directly relevant is 'increase productivity and competitiveness'. The role of its networking activities to enhance knowledge exchange and collaboration have the potential to improve the performance of those Life Science businesses amongst its membership and also enhance the productive interaction between businesses, the research base and clinicians in support of innovation. The work that Nexxus does can contribute to national targets in a number of areas – in particular around encouraging investment in R&D and innovation but also in encouraging the formation on new enterprises in the Life Science cluster and through its international networking which is relevant to promoting Scotland as an attractive place to invest.

[14] See: http://www.scottish-enterprise.com/about-us/se-whatwedo/~/media/publications/About%20Us/business%20plans/businessplan20102013.ashx
[15] See: http://scotland.gov.uk/Resource/Doc/202993/0054092.pdf

3.4 SE specifies its own priorities within the context of the GES and of the Government's more recent Economic Recovery Plan. In summary, these are:

- support internationalisation, by assisting companies to expand into new international markets with significant growth potential
- assist companies with opportunities to commercialise by improving links between businesses and Scotland's research base, and to innovate to take advantage of opportunities in domestic and international markets
- improve access to finance for businesses
- encourage businesses to invest in management and leadership skills, and in their workforce
- position Scotland as a highly competitive location for inward investment
- work with Scotland's Industry Advisory Groups to develop and deliver industry-led strategies, alongside other public sector partners.

3.5 The activities of Nexxus are relevant to a number of these SE priorities:

- *on workforce development* – we understand that Nexxus has worked with organisations such as 'Close the Gap' on encouraging gender equality and investment in staff development
- *on commercialisation* – Nexxus' events contribute to knowledge of this subject e.g. the event on commercialisation profiled below planned for March this year
- *on partnership development* – Nexxus is a member of the LiSAB workstream on collaboration
- *on internationalisation* – Nexxus has recently begun to create links with peer networks in Life Science hubs in other parts of the world. These links have the potential to assist its Scottish members form new international business contacts. Nexxus works with SDI especially in West Coast USA to support inward/outward investment. It also helps co-ordinate the presence of Scottish firms at international events such as BayBio[16].

3.6 In terms of internationalisation, we understand that Nexxus does not have a formal remit to undertake international marketing etc. as this is the role of SDI. However, it works with SDI where it is generally felt that Nexxus can add value.

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[16] For example see: http://www.nexxusscotland.com/events/show/1037

> ***"Commercialisation Strategies for Molecular Diagnostics"***
>
> Diagnostics industry is a large and stable industry worth approximately $40 Billion and growing at 3-5% per annum. The continuous discovery of new gene targets and the increase in the number of validated biomarkers provides continuous innovation and opportunity in the disease diagnostic market. In addition molecular diagnostics are becoming increasingly important to the pharma industry in the move from mass market therapies to specialist therapies and the stratification of disease. The key question for many new technology companies is how to enter and compete in this industry.
>
> Nexxus invites you to come and hear from experienced leaders in this field who have been - and continue to be - adept at developing and putting into play successful commercial strategies which address this question. "
>
> Extract from: http://www.nexxusscotland.com/events/show/1067

- *on access to finance* – as well as listing sources of finance on its web site and listing related events run by other organisations, Nexxus through its own events and publications provides information on access to finance directly e.g. through the 'informing business' section of its web site[17] and through co-ordinating (forthcoming) visits by Scottish firms to the United States to pitch to venture capitalists for investment. Nexxus is working with SDI and SE to assess the demand among Scottish firms for a visit to the Unites States in April this year:

> ***US offers cash injections to life sciences start-ups***
>
> American venture capitalists are seeking out the next generation of life science companies in what is expected to be a multi-million pound wave of investment in the sector.
>
> Graeme Boyle, director of life sciences networking body Nexxus, said investors in northern California want Scottish firms to pitch to them for funding.
>
> Boyle is now working with Scottish Development International (SDI), the overseas investment agency.
>
> He wants to target an event in April organised by Bay Bio, a San Francisco-based networking and lobbying organisation, where

[17] See: http://www.nexxusscotland.com/news/informing_business

its venture capitalist members will hear pitches from early-stage companies.

The potential visit stemmed from talks between Boyle and Gail Maderis, chief executive of Bay Bio, at the massive Bio convention in Chicago in May and at the Genesis conference in London before Christmas. Boyle said: "We're looking at what the demand is like from Scottish firms, but those I've spoken to have shown a lot of interest.

"SDI has already committed its funding for other trips this year but they are keen to help with organising if not funding a trip.

"So it looks like companies would have to fund the trip themselves but if investors are keen to look at pitches then it will be worth it."

Venture capitalists tend to only take part in funding rounds of more than £1 million, whereas individual business angels will invest tens or hundreds of thousands of pounds

Nexxus is working with Scottish Enterprise to offer coaching to early-stage life sciences companies so that their staff are better prepared to pitch to investors…

…Scottish Enterprise was also involved in the initial discussions at Bio in Chicago last year and is now working with Nexxus on ideas for a trip.

A spokesman for the economic development agency said: "The Bay Bio event is a great opportunity for young life sciences companies to get in front of some influential investors. Attracting new investment will be crucial in helping to grow the wider sector."

Extract from: Scotland on Sunday Newspaper, January 9, 2011. http://scotlandonsunday.scotsman.com/business/US-offers-cash-injections-to.6684167.jp

3.7 In summary, the nature and focus of existing Nexxus' activities continue to 'fit' well with the current SE response to Government policy.

Life Sciences context

3.8 Life Science is a sector identified as being of importance to Scotland in the GES. The Life Science Strategy for Scotland (‘2020 Vision: Achieving Critical Mass’), a refresh of the 2005 strategy (of the same name), places emphasis on the following issues:

- achievement of critical mass
- global orientation
- “fully connected” Life Sciences sector
- collaborative action
- exploitation of scientific strengths plus “financial services and innovative business models”.

3.9 The ‘core’ of the Nexxus mission relates to enhancing ‘connectedness’ within the Life Science cluster (or community) in Scotland, albeit the geographic scope of its activities in Scotland is largely limited to date to the Central Belt. We understand that Nexxus is forming links with the Life Science community in the Aberdeen and Highlands & Islands areas, as well as with other technology-based networks such as the Scottish Stem Cell Network and the Scottish Bioinformatics Forum. Consultees for this evaluation have pointed to the willingness of Nexxus’ management to engage with others nationally. As a pan-Life Science organisation, one consultee referred to Nexxus as the ‘glue’ in Scotland’s Life Science sector.

3.10 The international networking referred to above is another dimension of the organisation’s contribution to ‘connectedness’. The activities and outputs of Nexxus ‘fit’ well with the strategic emphasis on ‘global orientation’ and ‘collaborative action’.

3.11 In the Life Science industry strategy and the SE Industry Demand Statement, ‘collaboration’ is one of five priorities identified for achieving critical mass in the sector. It has been recognised that routes to achieving this includes optimising networks and knowledge exchange. In the specific context of SE’s own support for the implementation of the industry-led strategy, the principal contribution made by Nexxus is that associated with seeking to enhance collaborative working between parties in the Life Science community in Scotland and between them and international peers. Furthermore, consultees within SE point to the strategic value of the insights provided by the members of the Nexxus Steering Groups and the pro-active approach of its management towards SE in providing advice and ideas for sector relevant initiatives.

Summary

3.12 In our view Nexxus continues to ‘fit’ well with and contribute directly to the objectives of key Scottish Government and SE strategies.

Review of the rationale for intervention

3.13 According to the SE Approval Paper (dated 17th March, 2008), Nexxus was established to facilitate connections and address the failure of companies to exploit the opportunities available within Scotland's Life Science research base. A prior evaluation of Nexxus pointed to continued risk aversion, information asymmetry and spillovers as persisting market failures. It pointed to the persistence of what was termed an underlying problem with the transfer of knowledge between academia, the NHS and industry. The rationale for continuing support for Nexxus since this earlier evaluation appears to have been associated with infornation asymmetry, with risk aversion seen as a consequence of this.

3.14 The present evaluation permits a re-assessment of this rationale. What follows provides a summary of feedback from stakeholder consultations on both the nature of any market failure now and signs of any market adjustment over time. Firstly, we offer some of the narratives provided on the issue of market failure:

- "people tend not to be pro-active. They do not have the vision to network"
  - however, the same consultee argued that businesses really should be doing this for themselves as it is in their best interest to do so
  - another consultee cautioned against simply supporting an industry that in part is "lazy"
- key failures still perceived to be in the areas of informing and connecting, notably across the academia/NHS to business interface
  - whilst arguing for continuing market failure, one consultee queried where the resource and actions to address this should come from: "should the universities and the NHS deploy the resource/ take on the task for doing the connecting and informing?"
- one consultee argued that small companies still need support to innovate and grow, and that young companies need support to "avoid re-inventing wheels and to access customers who are large healthcare providers". They also need access to 'brains'
- people are failing because individuals (in companies, the research base and the NHS) tend to be "closed and do not get together"
- "there is an 'alphabet soup' of Life Science initiatives in Scotland. Nexxus is trying to streamline the access to these organisations/initiatives"
- a number of consultees articulated, albeit in various ways, the difficulties faced by smaller/young companies in gaining access to the NHS to support their innovation
  - we were alerted to actions being taken by the NHS in Scotland to address at least some of these concerns
- one consultee spoke of universities as 'frightening' places (!)

- another consultee argued that even large companies may find it hard to form contacts and collaborations, and struggle to find good route into the NHS and universities. Whilst collaborations, including international ones, may come about through serendipity, Nexxus has sought to promote why collaboration in Scotland would be beneficial and to make the most of what is available in Scotland
  - ➢ companies find it difficult to connect with the research base – they are not able to exploit the opportunities available within Scotland's Life Science research base: "still problems with transfer of knowledge between academia, the NHS and industry"
- although a lot of the SMEs are outward facing, in general, "they don't feel the need to collaborate with SMEs 'down the road' – there is some ignorance among companies" of capabilities within Scotland
- market failure is around the lack of business-to-business activity and of connections with the research base
  - ➢ in our view, this could be taken to imply that the problem is around a 'thin market' i.e. not enough productive collaborations occur yet to convince the wider business base of their worth.

Summary

3.15 It seems clear from this feedback that whatever market adjustments have taken place since the formation of Nexxus (see below) there remain some intrinsic market failure issues that continue to require the support of a networking/facilitating function if they are to be addressed. The recognition of information asymmetry in the prior evaluation of Nexxus as a prevailing market failure is likely still to exist. There remains imperfect information at the interface between the constituencies that Nexxus seeks to serve viz. industry, the research-base and the NHS. Nexxus' role in co-coordinating and facilitating knowledge exchange is relevant here. However, it is also possible that some organisations in Nexxus' 'market' perceive what it does as a 'public good', with some still happy to take what Nexxus supplies for free ('free-riding') or perhaps concerned that anything of value delivered by Nexxus is available to others, including competitors, in the market (i.e. there are non-rival public goods involved).

On evidence of market adjustment

3.16 The views on market adjustment vary from: "market failure is the same, not changed over time" to "market adjustment has occurred due to the pro-active 'match-making exercise' of Nexxus". Other views include:

- the report in the prior evaluation of Nexxus which indicated that some company respondents in the West of Scotland were willing to pay for Nexxus services is regarded as significant in this context: at that time it was felt that Nexxus (a) could not be rolled out in the East starting with a pay for services model, and (b) could not operate a different model in the West from the East

- the business survey conducted for the present evaluation also indicates a willingness to pay amongst many survey respondents across Central Scotland (see Annex B) – this may confirm that a further market adjustment has occurred

- one consultee argued that the success of Nexxus had over time improved the network of contacts available to his institution to the extent that the services of a networking organisation may no longer be a priority requirement
- by contrast, another consultee argued that whilst there may have been a market adjustment, it is likely that the market failures may need to be 'treated' on an ongoing basis, in order to engage different groups of people over time, especially in academia and the NHS.
  - this individual argued that without Nexxus this communication process would be lost
- one consultee who has been involved with Nexxus since its inception noted that in its early years participation in Nexxus events was c. 30% industry and 70% researchers (HEIs and NHS) but now the proportions have reversed
- there has been improvement in companies' level of understanding and awareness of networking opportunities and linkages available in the sector; and in understanding the benefits of collaboration
  - however, the same consultee is uncertain about any change in companies' perception of risk, including the de-risking investment opportunities
- market adjustment is "evident in the willingness of individuals from the private sector to give their own time to Nexxus voluntarily"
- finally, one consultee suggested that the annual Nexxus Awards event is evidence of companies benefiting from collaborations: however "it is difficult to say whether there have been changes in: 1) companies' levels of understanding and awareness of networking opportunities; 2) companies' perceptions of risk including de-risking investment opportunities."

What survey respondents say

3.17 The responses to the business survey offer some relevant insights. Of the 123 businesses interviewed, the following responses were obtained (see Annex B for fuller details):

- 71 firms formed new links with other companies; 51 formed new links with the science/research base and 10 new links with the NHS as a result of using Nexxus' services
- 74 firms reported improvements in market awareness

- 51 firms reported improvements in their technical awareness
- 28 firms report developing links with other networks or collaborations.

3.18 From the 92 non-business representatives in the survey, we received the following responses (see Annex B for fuller details):

- 48 formed new links with companies; 40 formed new links with the science/research base and 8 formed new links with the NHS
- 22 report forming links with other networks or collaborations
- 47 reported enhanced market awareness
- 35 reported improved technical awareness.

3.19 In both groups, a large majority score the importance of their new links within the company base and with the science/research base as important. Although scoring the importance of market and technical awareness is generally lower than the scoring for new links, the majority still clearly regard this increase in awareness as important to them.

3.20 All these reported changes at least offer the prospect of a market adjustment being achieved but the evidence is less positive in terms of the outcomes realised so far. There are a number of indications in the responses to the business survey that are relevant to assessing factors such as investment in R&D and innovation, and to engagement in collaborative ventures as a result of using Nexxus' services.

3.21 Of the 123 firms interviewed, only 8 have undertaken new innovation or R&D projects as a result of using Nexxus' services, although (perhaps oddly) 28 firms report attracting investment in innovation/R&D and only 8 report developing new products or processes. Similarly, only 11 have undertaken a collaborative project as a direct result of using Nexxus' services.

3.22 So based on this sample, only a small minority attribute investment and collaborations to Nexxus. Despite the value placed by most firms on the new contacts they have made through Nexxus, these have not yet translated into a large number of new collaborative ventures attributable to Nexxus. Despite the generally high importance accorded to the enhanced market awareness attributed to Nexxus, this has not yet translated to the same degree into new innovation-related activity attributed to the use of Nexxus' services. [18]

[18] It is appropriate here to note that the current phase of the Nexxus project reportedly suffered a delay in its launch and that rather than be completed in June 2011, as originally planned, it will now run at least up to January, 2012.

3.23 It is notable that 20 firms report new links with support providers such as lawyers, accountants, consultants etc. It is reasonable to expect that improved links with expert professional service providers will assist Nexxus' members make better informed decisions when assessing business opportunities and their potential risks/reward in future.

4: Performance assessment

4.1 This section provides an assessment of project objectives, inputs, activities and gross outputs: it continues to follows the steps in the logic model illustrated in Figure 1.1. It also gives an assessment of Nexxus' information management and performance measurement; management and delivery processes, including Steering Group structures; and contributions to equity and equalities agendas.

Objectives

4.2 Guidance by HM Treasury (2003)[19] specifies that the objectives of an intervention need to be 'SMART'[20]. We are required to assess the objectives of Nexxus as articulated in SE's Approval Paper (2008)[21]. We interpret the objectives to be categorised under the following broad headings:

- **"Main objectives" and the associated "SMART objectives"** – these are set by SE. There is no explicit statement in the SE Approval Paper of the difference between the "main" and "SMART" objectives (of which there are three and four respectively) but our interpretation is that some of the SMART objectives attempt to turn the main objectives into SMART ones. We therefore treat these as one set of objectives for present purposes. In doing this, we make a judgment on which of the SMART objectives relate to the main objectives (see Table 4-3 below).
- **ERDF objectives** – our interpretation of the seven ERDF objectives in the SE Approval Paper (Table 4-1) is that they are in actual fact target 'outputs' and 'results'. This is confirmed by the ERDF application to the East of Scotland European partnership (ESEP[22] : see Appendix III of Approval Paper). We do not consider these ERDF objectives further separately.
    - ➢ we also note that the ESF application[23] under the section on 'Project Description' identifies Nexxus' objectives as similar to the ones under the banner of "main objectives" as stated in SE's Approval Paper.

[19] HM Treasury (2003) Green Book Appraisal and Evaluation in Central Government.
[20] Definition of SMART: **S**pecific, **M**easurable, **A**chievable, **R**elevant and **T**ime-Bound.
[21] The Consultant's Brief specifically requires to assessment of objectives as defined in SE's Approval Paper (2008).
[22] It is also worth noting that the SE Approval Paper (2008) in Appendix III also identifies the ERDF, SEEKIT and the "SMART objectives" as "Activity & Anticipated Outputs".
[23] Application for European Structural Funds. EUROSYS Application LUPS/ ERDF/ 2008/1/1/0495.

Table 4-1: ERDF “objectives” as defined in SE Approval Paper (2008)	
Enterprises supported	Increase in turnover by supported enterprises
Research networks and collaborations supported	New products and services developed by supported research networks
Renewable energy research projects supported	Gross jobs created
New products and services developed by supported enterprises and research centres	

Source: SE Approval Paper (2008)

- **SEEKIT objectives** – as above for ERDF objectives, the 11 SEEKIT objectives identified in the SE Approval Paper (Table 4-2), in our view are actually ‘outputs’ arising from the Nexxus project
  - ➢ we therefore do not assess the 11 SEEKIT objectives in terms of their ‘SMARTness’.

Table 4-2: SEEKIT “objectives” as defined in SE Approval Paper (2008)	
Events held	New patents issued/ IPR registrations made
SMEs attending events	New licensing deals between SMEs/ science base
Individual/ SMEs helped with advice/ information (<1 day)	New links between SMEs and science base
SMEs assisted (1-5 days)	SMEs receiving support for energy savings and resource efficiency
SMEs assisted with high level support (> 5 days)	Renewable energy projects supported
SMEs undertaking Innovation/ RTD projects	

Source: SE Approval Paper (2008)

- **“Strategic objectives”** – these relate to objectives of key Scottish Government and SE strategies. The contribution to these objectives has been assessed in the previous Section of this report.

Main objectives

4.3 As mentioned above, we have undertaken a detailed assessment of each of the “main” and “SMART” objectives as articulated in the SE Approval Paper. This is based on a literal interpretation of each objective statement. We assess each one to determine the degree to which it meets SMART criteria.

Table 4-3: 'SMARTness' of objectives for Nexxus with SQW comments *(in italics)*

Objective	Specific	Measurable	Achievable	Relevant	Time-bound
MAIN OBJECTIVES (as defined in SE Approval Paper):					
1. **Community Building** – to facilitate communication, knowledge sharing and collaboration between life science organisations within and beyond the region	*This statement is specific in that three methods for community building are identified: communication, knowledge sharing and collaboration.* *However, each of these could be defined further i.e. what type of communication, knowledge sharing and collaboration?* *This statement is also specific in the sense that it identifies the broad type of organisations that are to be facilitated i.e. Life Sciences.* *However, this could be interpreted as organisations just within the business community and not between e.g. businesses and NHS or businesses and academia - the converse is also true* *The "region" needs to be specified further.* ***ASSESSMENT: PARTIALLY SPECIFIC***	*We assume that the SMART objective in (4) below relates to this community building objective.* *It is clear how this is to be counted so that progress against objective can be tracked – i.e. by supporting 15 organisations via 44 events.* ***ASSESSMENT: MEASURABLE*** NB. The measures referred to above relate to outputs for the network. There is a strong implication in some specialist literature that a 'community' is something different from/more than a network. There would be merit in looking afresh at how 'community' building specifically should be measured in future.	*For the objective to be achievable, it requires some way of knowing when enough facilitation has been undertaken.* *This can be established and verified by the progress made against the measure associated with the objective.* *The criteria for achieving the stated measure is relatively low which makes it unlikely that it is not achievable.* ***ASSESSMENT: ACHIEVABLE***	*The objective appears to be relevant but the statement could be further articulated to explain this.* ***ASSESSMENT: RELEVANT***	*Timeframe imposed – July 2011* ***ASSESSMENT: TIME-BOUND***
2. **Profile Raising** – promoting the strengths of the region in a positive and dynamic way, ensuring appropriate profile is registered in the media, the Scottish Parliament and in the wider business, public and academic communities in Scotland	*What is classified as "strengths"? Promote the strength in what exactly?* *What is a "dynamic way"?* *What is an "appropriate profile"?* ***ASSESSMENT: NOT SPECIFIC***	*We assume that the SMART objective in (5) below relates to this profile raising statement.* *Promoting strength in a quantified number of publications/ articles does not actually help in counting a particular strength. The criteria for establishing a strength needs to be set and*	*For the objective to be achievable, it requires some way of knowing when enough profile raising/ promotion of strengths has occurred.* *As the statement is not specific and the measurability of the actual strength is not articulated, it is difficult to see how it can*	*The objective appears to be relevant.* ***ASSESSMENT: RELEVANT***	*Timeframe imposed – July 2011* ***ASSESSMENT: TIME-BOUND***

Objective	Specific	Measurable	Achievable	Relevant	Time-bound
		that should be counted as opposed to how many times it is reported in a publication. *What is the minimum threshold for judging the region has a strength?* ***ASSESSMENT: NOT MEASURABLE***	*be achieved.* ***ASSESSMENT: DIFFICULT TO ASSESS IF ACHIEVABLE***		
3. **Opening Opportunities** – develop high quality materials and marketing messages to position Scotland as a centre of life science excellence and support SDI's inward investment initiatives in the globally competitive life science market place	*This statement does specify how opportunities are to be opened.* *This statement has two strands: development of materials/ marketing messages; and supporting inward investment.* *Although these two strands can be considered to be inter-linked they would be better articulated separately as it is not clear if the first strand (marketing) is an 'input' for the second strand (inward investment).* *How is development of materials/ marketing different from profile raising objective in (2) above?* *How is "high quality" defined?* *The level and nature of "life science excellence" needs to be defined i.e. what is meant by "excellence"?* ***ASSESSMENT: PARTIALLY SPECIFIC***	*We assume that the SMART objective in (5) below relates to this profile raising statement.* *Promoting opportunities in a quantified number of publications/ articles does not actually help in counting the opportunity itself.* *The criteria for establishing an opportunity needs to be set and that should be counted as opposed to how many times it is reported in a publication* ***ASSESSMENT: NOT MEASURABLE***	*For the objective to be achievable, it requires some way of knowing when enough opportunities have been achieved. How will this be judged?* ***ASSESSMENT: DIFFICULT TO ASSESS IF ACHIEVABLE***	*The objective appears to be relevant.* ***ASSESSMENT: RELEVANT***	*Timeframe imposed – July 2011* ***ASSESSMENT: TIME-BOUND***
SMART OBJECTIVES (as defined in SE Approval Paper):					

Objective	Specific	Measurable	Achievable	Relevant	Time-bound
4. Build the community by supporting 15 organisations via 44 events – July 2011			*SEE OBJECTIVE (1) ABOVE*		
5. Promote strengths/ open opportunities via over 80 publications/ articles etc – July 2011			*SEE OBJECTIVE (2) ABOVE*		
6. Increase turnover in supported businesses by £7.5m – July 2013			*NOT AN OBJECTIVE.* *NOT CLEAR WHICH OF THE OBJECTIVES (1) TO (3) ABOVE (OR INDEED ALL) THIS RELATES TO*		
7. Create 90 jobs across the region – July 2013			*NOT AN OBJECTIVE* *NOT CLEAR WHICH OF THE OBJECTIVES (1) TO (3) ABOVE (OR INDEED ALL) THIS RELATES TO*		

Source: SE Approval Paper (2008); ESF Application; SQW.

4.4 We also received views on objectives through our primary research with stakeholders. The majority of consultees identified objectives relating to: networking between academics, industry and NHS; awareness raising; promotion of capabilities in Scotland; bringing on board the private sector to enhance the LS sector; sharing of experiences and building relationships; facilitating interactions; and creating a LS community.

4.5 There were mixed views among consultees regarding the degree to which objectives were SMART. There is recognition that it is difficult to measure the objectives around networking. There was also a sense that for some consultees Nexxus had diversified too far in its range of activities and this may link back to those concerned about making the objectives SMARTer.

Summary

4.6 Our overall finding is that:

- the community building and opening opportunities objectives are specific in part whilst the profile raising objective is less so
- community building is measurable, albeit challenging to do so, but profile raising and opening opportunities are less so
- it is difficult to establish if the profile raising and opening opportunities objectives were achievable but the community building objective can be considered achievable, albeit over time
- objectives were relevant; in the context of policy and the LS cluster strategy, and

- all the objectives were time-bound.

Inputs

4.7 Inputs are defined as the resources relating to funds, people/ time that are committed to the implementation and operation of Nexxus. We identify and assess the main inputs. Here we also report on our assessment of the management and delivery of Nexxus services including the Steering Group structure.

Finance

4.8 Table 4-4 identifies the financial input associated with the Nexxus project. The total agreed funding for Nexxus is c. £1.28m over three years for the period July 2008 to July 2011[24]. The total income received up until end of January 2011 represents just over 60% of the total agreed funding.

Table 4-4: Nexxus funding (2008-2011)

Source	Income (till 31/01/11)	Agreed amount (2008-2011)	Claims in progress	Left to claim
ERDF	£233,505.13	£500,814.00	£81,882.98	£185,425.89
SEEKIT	£196,359.91	£378,107.00	£35,158.51	£146,588.58
Scottish Enterprise	£140,625.00	£168,750.00	£28,125.00	£0.00
Edinburgh Science Triangle	£90,000.00	£100,000.00	£0.00	£10,000.00
Glasgow/ Edinburgh Collaboration	£35,000.00	£35,000.00	£0.00	£0.00
Glasgow City Council	£15,000.00	£15,000.00	£0.00	£0.00
East Dunbartonshire Council	£3,000.00	£3,000.00	£0.00	£0.00
Renfrewshire Council	£4,500.00	£4,500.00	£0.00	£0.00
North Lanarkshire Council	£7,875.00	£7,875.00	£0.00	£0.00
NHS	£11,250.00	£11,250.00	£0.00	£0.00
University of the West of Scotland	£5,250.00	£7,875.00	£0.00	£2,625.00

[24] It is worth noting, that although our evaluation is concerned with the period March 2008 to December 2010, we identify and comment on funding till 31.01.11 as this represents the latest figures.

Source	Income (till 31/01/11)	Agreed amount (2008-2011)	Claims in progress	Left to claim
Glasgow Caledonian University	£7,500.00	£7,500.00	£0.00	£0.00
University of Strathclyde	£28,125.00	£28,125.00	£0.00	£0.00
University of Glasgow	£6,334.00	£11,750.00	£0.00	£5,416.00
Other	£2,639.29	£0.00	£0.00	£0.00
Total	**£786,963.33**	**£1,279,546.00**	**£145,166.49**	**£350,055.47**

Source: Nexxus

4.9 Apart from ERDF and SEEKIT funding, we note the main source of funding is from SE, followed by EST, the Glasgow/ Edinburgh Collaboration and University of Strathclyde. More generally, we observe that Nexxus has a range of funding sources including: local authorities, universities, NHS and other public sector support.

4.10 In terms of actual expenditure, Table 4-5 indicates that total spend until end of January 2011 is nearly £840k (or c. £809.5k until end of 2010). We calculate that the total expenditure to end January 2011 represents approximately two-thirds of the total agreed funding for Nexxus. Not surprisingly the greatest expenditure relates to staffing, marketing and events. It is our assessment that the cash-flow for the project has been managed well, bearing in mind the timescale left to the end of the project.

Table 4-5: Nexxus expenditure (2008-2011)

Spend	2008	2009	2010	2011	Total
Staffing	£49,616.28	£235,966.15	£278,079.82	£23,664.18	£587,326.43
Travel	£236.93	£10,132.32	£17,342.11	£609.22	£28,320.58
Office Rent	£0.00	£8,193.37	£12,860.88	£728.49	£21,782.74
Marketing	£14,554.52	£36,620.53	£50,517.04	£4,796.47	£106,488.56
Events	£8,539.06	£31,581.97	£30,768.93	£483.29	£71,373.25
(Depreciation) IT	£0.00	£4,218.40	£2,595.21	£0.00	£6,813.61
Consultancy	£564.40	£7,759.62	£881.24	£0.00	£9,205.26
Other Eligible Costs	£0.00	£3,705.92	£4,776.74	£11.15	£8,493.81

Spend	2008	2009	2010	2011	Total
Total	**£73,511.19**	**£338,178.28**	**£397,821.97**	**£30,292.80**	**£839,804.24**

Source: Nexxus

4.11 Table 4-6 profiles the split of expenditure between the West and East hubs. The West hub represents a greater amount of spend compared to the East (by an extra c. 10%). The relatively low spend in 2008 compared to subsequent years for the East reflects its more recent introduction.

Table 4-6: Nexxus expenditure – West and East hubs (2008-2011)

	2008	2009	2010	2011	Total
Glasgow	£51,274.85	£127,188.86	£137,608.25	£10,822.65	£326,894.61
Edinburgh	£3,932.71	£101,916.36	£129,299.67	£9,073.57	£244,222.31
Collective	£18,303.63	£109,073.06	£130,914.05	£10,396.58	£268,687.32
Total	**£73,511.19**	**£338,178.28**	**£397,821.97**	**£30,292.80**	**£839,804.24**

Source: Nexxus; Note:' collective' refers to expenditure which spans the whole of the central belt.

People/ time

4.12 The core Nexxus Team is comprised of seven staff in the following roles[25]:

- Director
- Manager - Glasgow and West of Scotland hub
- Manager – Edinburgh and East of Scotland hub
- Marketing Communications Manager
- Marketing Communications Assistant
- Marketing Assistant - Glasgow and West of Scotland hub

[25] Based on the following sources: University of Glasgow, Research & Enterprise (2009) Nexxus Contract; Nexxus, Presentation for SE EIA Inception Meeting. 03/11/10; and http://www.nexxusscotland.com/about/our_team

- Marketing Assistant - Edinburgh and East of Scotland hub.

4.13 It is worth mentioning that although the current phase of the project officially started in July 2008, there was a time lag in putting in place all the Nexxus staff (and other processes).

4.14 The Nexxus Team help deliver the portfolio of events, marketing and business development services associated with the project (see list of services in Table 4-9 below).

4.15 We note from the Nexxus' contract document[26] that the role of the Director is to oversee the activities of the West and East hubs to ensure "consistency, tie links across the regions and identify new opportunities". We also note that the "manager and staff will be responsible for the delivery of activities tailored to the specific needs of their region and build on best practice and experience already gained".

4.16 With regards to the role of the Director, based on the feedback from stakeholders (see Table 4-7 below) and our own observation of the work undertaken by the Director, it is our view that this role is being performed extremely well. There is clear leadership in driving the project forward. As for the rest of the Nexxus Team, there is positive feedback from the survey of Nexxus beneficiaries on individual members of the Team both in the West and East hubs (see Annex B).

4.17 In relation to the roles and responsibilities identified in the Nexxus contract document, we are satisfied that these are being met.

Table 4-7: Views of stakeholders on Nexxus management and delivery

Comments made by stakeholders
Nexxus has managed and delivered it services very effectively.
Credit goes to Nexxus Director and the Team for coming up with ideas, events etc.
The management and delivery of Nexxus services is very effective, particularly in terms of communicating with people on what is going on in Life Sciences (e.g. Newsletter, marketing material etc.)
Nexxus had done very well in management and delivery of services.
The management and delivery of services is good. There is commitment and a broad vision. Director has got "oomph", "spark".
The communication from Nexxus is very good.
Strong managerial support; good team.

[26] University of Glasgow, Research & Enterprise (2009) Nexxus Contract.

Comments made by stakeholders
Nexxus quickly became established in the Edinburgh area.
Nexxus is well run…Director of Nexxus is very good: "he drives Nexxus forward".
Good quality management team. Good quality events.
Pleased that Nexxus has expanded successfully into the East of Scotland. Chair is excellent. Director is of a high calibre.
The Nexxus team members' backgrounds are complimentary.

Source: SQW primary research with stakeholders

Review of the monitoring systems and reporting

4.18 To understand and assess the monitoring systems developed by the Nexxus Team, we held a meeting with the Nexxus Project Manager responsible for collating, analysing and reporting Nexxus activities/ outputs[27]. We highlight the following:

- a CRM system was developed in 2009 to record Nexxus' activities (on a continuous basis) including information/ data on: contact details of beneficiaries; sector/ sub-sector of beneficiary; description of activity; time spent (e.g. number of hours); and various other data fields
  - the outputs achieved from the activities are also recorded - this is established by a follow-up survey or direct discussion with the beneficiaries. A review of the CRM system shows that records have been categorised in accordance with the SEEKIT and ERDF output/ results indicators. This helps in pulling together the reporting required for Nexxus' funders (i.e. ERDF, SEEKIT and SE)
  - all the activities and corresponding outputs are extracted on a monthly basis from the CRM system, verified and exported to an Excel spreadsheet. All the outputs are then counted and measured against the performance targets set by the main funders. We understand that this counting is in line with the requirements of ERDF and SEEKIT i.e. the outputs are counted the way they should be counted as defined by the funders. All reporting to ERDF and SEEKIT is done on a quarterly basis and we are satisfied that information can be tracked to activities recorded on the CRM system
  - specifically on Nexxus events, all registration/ attendance (and non-attendance) are recorded on the CRM. Feedback on events is captured through post-event questionnaire using Survey Monkey[28]. The results from the survey questionnaire are summarised in a quarterly report

[27] We acknowledge the input provided by the Nexxus Team in addressing all our requests. This was always prompt and met our requirements for undertaking this study.
[28] http://www.surveymonkey.com/

and circulated to the Steering Groups to review. This serves a two-fold purpose: to obtain a picture of how the events have been received by attendees and also to help inform development of future events.

4.19 To give a 'feel' for how the CRM looks and the type of information/ data captured, we provide as examples two screenshots of the Nexxus Management System in Figure 4-1 and Figure 4-2 below.

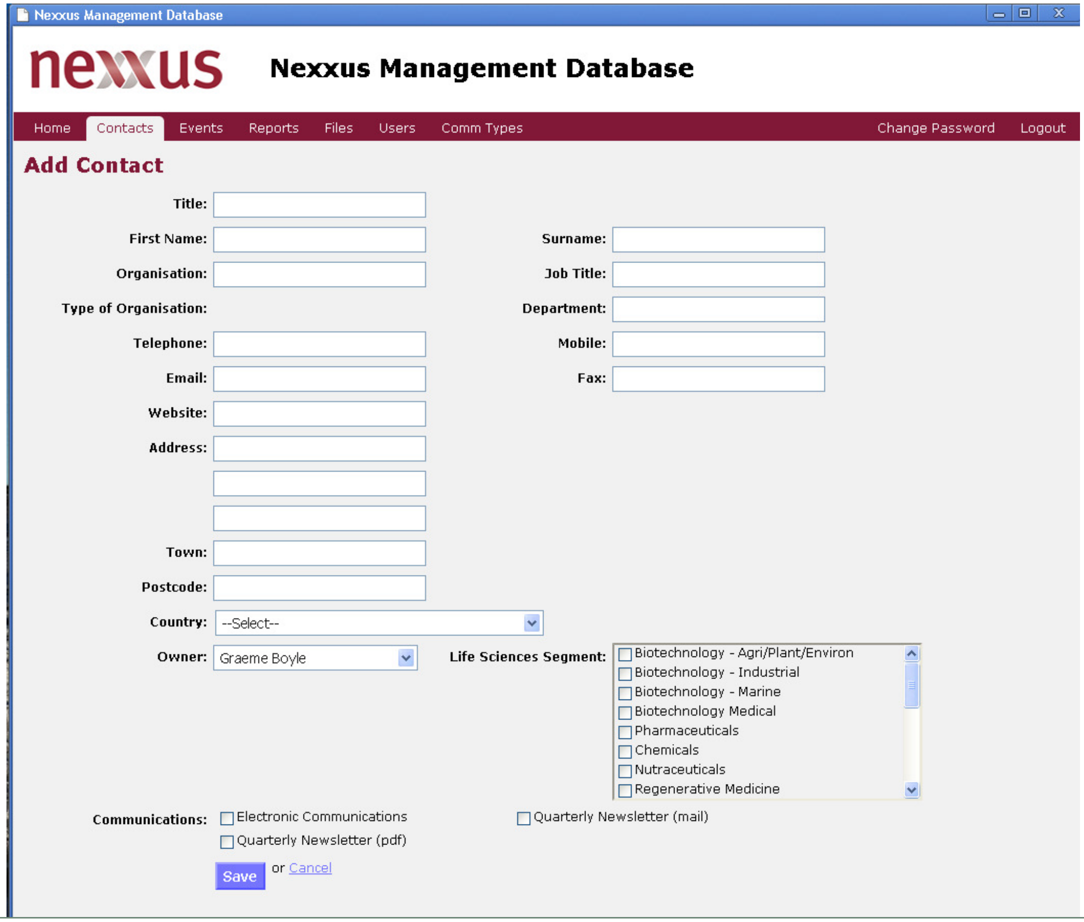
4.20 In our view, the Nexxus Team has put in place a transparent monitoring and reporting system which is fit-for-purpose. All formal activities and outputs are tracked, recorded, verified and measured against targets[29]. We commend the use of this web-based CRM system which allows the user to access, input and review information/ data: it is a valuable and innovative tool. This approach avoids any potential duplication of effort and contributes to an efficient process for recording and analysing information/ data.

4.21 We also recognise the time and effort that has been devoted to developing this robust monitoring and reporting system/ processes.

4.22 With respect to the Excel spreadsheets used to count and assess performance against the targets set by funders, these would benefit from separating out the metrics (target and actual achieved) by funder on different (but linked) worksheets instead of recording on a single worksheet.

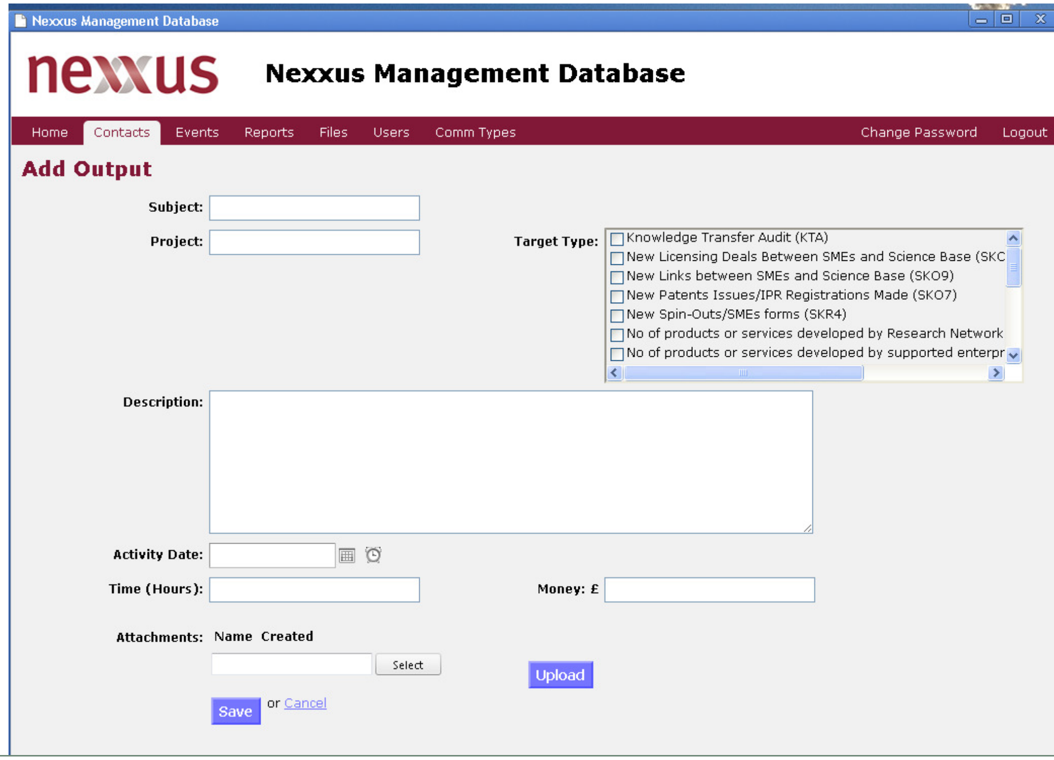
[29] We understand that there are some informal type activities which are not recorded, primarily because it is not possible or difficult to do so.

Figure 4-1: Nexxus Management Database – screenshot of contact information of beneficiaries



Source: Nexxus

Figure 4-2: Nexxus Management Database – screenshot of outputs captured



Source: Nexxus

Review of the current Steering Group structure

4.23 In addition to the core Nexxus Team, there are two Steering Groups (West and East) which meet on a quarterly basis (Table 4-8). There is also a joint Steering Group comprised of members from both West and East groups which meets normally every six months. Members of all these groups support the development of new ideas, initiatives, activities, monitoring of progress, and overall strategic direction. It is also worth noting that input is received from a wider group of stakeholders consisting primarily of the funders.

4.24 We emphasise the voluntary nature of the participation by the private sector representatives on the Steering Groups. The fact that they give up their time and provide input suggests the importance and indeed the value they place on the Nexxus project. For instance, some consultees state that they give up a few days per month. The nature of the involvement includes: attendance at meetings; provision of strategic direction; reviewing progress against performance targets; generating ideas; supporting the business planning process; attending events etc. We also understand that no expenses are paid for the voluntary input provided.

Table 4-8: Steering Group representatives – as of September 2010

Steering Group East representatives	**Steering Group West representatives**
Chair – Division of Pathway Medicine, University of Edinburgh	Chair - R&D Director, NHS
4 SMEs	4 SMEs
2 large companies	2 large companies
1 HEI	5 HEI/ FE
1 RTO	1 SE
2 Infrastructure	
1 SE	
1 NHS	

Source: Nexxus, Presentation for SE EIA Inception Meeting. 03/11/10

4.25 As part of our primary research with stakeholders, we gathered views on the Steering Group arrangements. There was consensus that the Steering Groups generally worked well. In particular the following points were made:

- there exists a good cross-section of members on the Steering Group; good representation of people – good breadth and balance
- no one individual or group dominates meetings
- a small "splinter group" has been formed to help inform the future development of Nexxus
- meetings are very focussed
- the West Steering Group's membership has been very stable and is a more "mature operation" (as compared to the East)
- the joint Steering Group meetings are considered useful and effective

4.26 However, there was a view among a minority of consultees that there are two sets of people comprising the Steering Groups – one set is dedicated/ committed and the other does not turn up or participate at meetings to any like the same degree. In the view of one consultee: in the East, there is a "big team" but only a "core group turns up regularly".

4.27 Several consultees argue that running two Steering Groups (East and West) is not necessary. They served a purpose at the time when Nexxus East was being set up but the separation is not as relevant now. There is a desire for a "consolidated" Steering Group.

4.28 Other suggestions for future development of the Steering Groups included: bringing on board more private sector individuals who can bring "fresh thinking"; changing the structure to move towards more of a board of management, including in the view of one individual, with elections.

4.29 We also tested the idea with some consultees of having individuals on the Steering Groups who were from outside of Scotland to add value and provide critical assessment from an 'outside looking in' perspective. This was generally welcomed by consultees and is worth further consideration.

Recommendations for future Steering Group structures

4.30 For future Steering Groups structures, we recommend that further consideration be given to: consolidating the two Steering Groups into one; ensuring regular refreshing of the membership, and considering the participation of someone from outside of Scotland.

Activities

4.31 Activities in this case are defined as the support and services provided by the Nexxus Team, partners and stakeholders associated directly with the project.

Table 4-9: List of main services associated with Nexxus

Services	Description
EVENTS:	
Networking events (e.g. Horizons, Bioscience Business Club, Nexxus Annual Awards Nights)	• A range of events for businesses, academia and NHS – organising, sponsoring and hosting
LinkedIn Group	• Provides a forum for the LS community in Scotland in order to share ideas, information and thoughts with each other
MARKETING:	
Quarterly newsletter	• Nexxus News is produced every quarter and provides a round-up of central Scotland LS related news, research, product development, company profiles, forthcoming events and informative articles on specific areas

Services	Description
	• 3000+ subscribers (Scotland and rest of the rest of the world)
Monthly e-bulletin	• Provides LS news over the previous month and a round-up of forthcoming LS events at home and abroad • 5000+ circulation
Twitter and Blog feeds	• Following news stories relevant to the LS sector
Case studies, profiles and other information sheets	• Interview case studies profiling the LS players from the private, academic and public sector in Scotland
Nexxus website	• Wealth of information on the area's LS capabilities, expertise and key players, publications, events, news items etc.
Direct bespoke information service (providing ad hoc and tailored responses to specific requests)	• Specific information support tailored to the client's need
BUSINESS DEVELOPMENT:	
Mentoring services	• Nexxus provide an introduction to a Directors of established LS companies or offering own services as a mentor
PR services	• Writing of press releases/ case studies and/ or introductions to journalists
Introductions and connections	• Signposting enquiry to appropriate contacts
Knowledge exchange support: company-research base	• Introduction/ support in making relevant contact in the research base e.g. HEI
Knowledge Transfer Audits	• Formal review of business with aim of identifying business solutions within the research base
Special Interest Groups	• Nexxus sub-groups o specific issues e.g. legal or quality assurance issues
Workshops (on key themes)	• This is across a range of themes e.g. how to sell into the NHS.

Source: Nexxus

4.32 We find there to be an extensive portfolio of activities associated with the Nexxus project. The quality of the activities identified above can be determined from our primary research with beneficiaries. Annex B provides details of views of respondents on the services used, the level of usage and importance to business/ organisation performance. We highlight below the main messages coming from the beneficiary survey.

4.33 For businesses, there is relatively high use/ take-up of the following services (i.e. relative to other Nexxus' services): networking events; marketing related services, LinkedIn Group; quarterly newsletter; monthly e-bulletin; Nexxus website; introductions and connections

- in terms of level of usage, the events and marketing related services have a higher level of usage compared to what can be classed as one-to-one business development services. Likewise, with regards to the importance of services specific to business performance, the events and marketing services are considered more important than the business development services

4.34 For non-businesses, a similar picture emerges with the events and marketing services in greater use as compared to the business development services.

4.35 We also received feedback via our primary research with stakeholders on the services provided by Nexxus. Generally the feeling was that the services were of good quality.

Gross outputs

4.36 Gross outputs are defined as the direct effects of the intervention that can be monitored – factors which tend to be in the direct control of the delivery body.

4.37 We have reviewed the reporting of gross outputs based on information/ data provided by Nexxus and compared the performance against targets set by the three main project funders (SE, ERDF and SEEKIT). We present below the gross outputs and results, and assess the performance against the targets set for the project. It is notable that the targets set by the funders are a mix of what we would regard as outputs and others that are desirable outcomes which are clearly not in the gift of Nexxus (e.g. turnover increased in the beneficiary companies)[30].

Performance against targets – ERDF

Table 4-10: Performance against targets - ERDF

Output/ result	Target	Year target to be achieved by	Actual achieved as reported by Nexxus (January 2011)	SQW comment
Number of enterprises supported	150	2011	396	Target far exceeded
Number of research networks and collaborations supported	20	2011	148	Target far exceeded
Number of renewable energy research	1	2011	0	Target not achieved to date

[30] There is merit in ensuring clear differentiation between outputs and desired outcomes when objectives and targets are framed.

Output/ result	Target	Year target to be achieved by	Actual achieved as reported by Nexxus (January 2011)	SQW comment
projects supported				
Number of new products and services developed by supported enterprises and research centres	12	2013	5	Under half of target achieved – on track to achieve target by 2013
Increase in turnover by supported enterprises	£7.5m	2013	£0.408m	SQW calculate turnover impact (see Section 5) Based on SQW calculations, progress is being made against target
New products and services developed by supported research networks	4	2013	0	Target not achieved
Gross jobs created	90	2013	18	SQW calculate jobs impacts (see Section 5) Progress made against target but likely to fall short of target by 2013

Source: Nexxus Metrics Spreadsheet (2011); Nexxus Consultant's Brief; SQW

Performance against targets – SEEKIT

Table 4-11: Performance against targets - SEEKIT

Output/ results/ impacts	Target	Year target to be achieved by	Actual achieved as reported by Nexxus (January 2011)	SQW comment
OUTPUTS:				
No. of events held	44	2011	53	Target exceeded
No. SMEs attending events	145	2011	1,070	Target far exceeded
No. of SMEs helped with advice/ information (<1 day)	260	2011	396	Target exceeded
No. of SMEs assisted (1-5 days)	77	2011	64	Strong progress target – likely to be achieved
No. of SMEs assisted with high level support (> 5 days)	45	2011	5	Limited progress against target

Output/ results/ impacts	Target	Year target to be achieved by	Actual achieved as reported by Nexxus (January 2011)	SQW comment
No. of SMEs undertaking Innovation/ R&D projects	22	2011	6	Limited progress against target
No. of new patents issued/ IPR registrations made	7	2011	1	Target unlikely to be achieved
No. of new licensing deals between SMEs and Science Base	3	2011	1	Target not achieved to date
No. of new links between SMEs and Science Base	370	2011	939	Target far exceeded
No. of SMEs receiving support for energy savings and resource efficiency	4	2011	1	Target not achieved to date
No. of renewable energy projects supported	1	2011	0	Target not achieved to date
RESULTS:				
Increased investment in external knowledge/ innovation/ RTD by SMEs	£1.56m	Not specified	£0.372m	Limited progress against target, subject to timescale
No. of new products, processes or services significantly improved/ new ones introduced	58	Not specified	42	Good progress against target
No. of SMEs with reduced costs per unit output	27	Not specified	0	No progress against target
No. of new spin-outs/ SMEs formed	0	Not specified	1	Exceeded target
IMPACT:				
Increase in turnover in assisted businesses	£7.5m	SQW assumption 2013	£0.408m	See comment for ERDF metric above. Same applies here
Total number of gross new jobs	90	SQW assumption 2013	18	See comment for ERDF metric above. Same applies here
Total number of gross jobs safeguarded	40	Not specified	4	Limited progress against target

Source: Nexxus Metrics Spreadsheet (2011); Nexxus Consultant's Brief; SQW

Output performance against targets – SE

4.38 We understand that the targets set by SE for Nexxus are those shown in the table below. We have been provided with the 'Metrics for SE Spreadsheet' by Nexxus which records the names of the businesses/ organisations which have attended four or more events in each year from 2008/09 to 2010/11. We have counted these businesses and organisations (excluding Nexxus itself) to populate the table. Overall, the results indicate relative solid performance from 2009/10 onwards.

Table 4-12: Performance against SE targets

	2008/09	2009/10	2010/11
TARGET:			
No. of collaborations	3	4	4
No. of businesses/ stakeholders active in a network (a network is defined as attendance at four or more events)	30	45	60
ACTUAL ACHIEVED:			
No. of collaborations	0	3	9
No. of businesses/ stakeholders active in a network	19	67	42

Source: SE; Nexxus

Networking and community building

4.39 Nexxus has had the objective to "facilitate communication, knowledge sharing and collaboration between life science organisations within and beyond the region" as part of its community building mission. Both the terms 'network' and 'community' are used throughout the documentation made available to us on Nexxus but within the literature on social networking for example there are distinctions made between the two.

4.40 Such a distinction was acknowledged in a working paper we were signposted to written for the Edinburgh Science Triangle initiative, one of the sponsors of Nexxus in the East of Scotland[31]. Building on work published by *IBM developerWorks* and others, this report differentiated between developing an 'audience', building a 'network' and building a 'community', with a progression over time to increasing levels of "focus, formalisation and shared identity" as a community evolves.

[31] Otocos (2009) Performance measurement frameworks for the Edinburgh Science Triangle network events and community-building programme. Report for the Edinburgh Science Triangle.

4.41 From both stakeholder consultations and the survey of Nexxus contacts undertaken during this evaluation, some insights can be reported as to where Nexxus and the sector it serves may be positioned presently on this spectrum.

4.42 Nexxus has been successful in developing an audience, e.g. for its newsletters. Given the policy interest in a cohesive, connected LS cluster spanning the whole of Scotland, this audience could yet be increased in size and scope. Interestingly, in what can be viewed as a quite diverse sector, Nexxus seems to have been able to build and sustain an audience for its pan-LS published output.

4.43 It is notable that survey respondents rank making new contacts as being the most important of all the benefits gained from Nexxus. This coupled with the number of events and sustained scale of attendances they enjoy indicates that Nexxus has been successful in developing networks. We also understand that the business participation in its events has increased over time.

4.44 Whilst achievements in network development seems clear in each of the West and East of Scotland 'hubs', from the data obtained in this evaluation it is not possible to determine whether the change from building an audience to building a network has progressed as far for Central Scotland as a whole as it has in each of the West and East 'hubs'. This would take additional research to determine the extent of East-West cross-overs in terms of new contacts made and subsequent collaborations developed. However, from the stakeholder consultations there are indications that even at the Central Scotland level progress has been achieved (and beyond that indicated just by joint Steering Group meetings): consultees point to Nexxus Awards events bringing the wider LS community together and to Nexxus being the 'glue' for the LS sector across Central Scotland.

4.45 Finally on the issue of community development, although there is substantial positive evidence of participation in knowledge-sharing events and of making new contacts, the reported number of links developed with other networks or collaborations attributable to Nexxus is much lower as is the number of actual collaborative projects undertaken.

4.46 However, as well as the earlier reference to Nexxus as the 'glue', others have referred to a 'collegiate' atmosphere at Nexxus' events. We are also aware of the sustained voluntary contributions made to Nexxus' steering and activities by senior figures from business and the research base (from academia and the NHS). These factors point towards progress in community building.

4.47 We claim no statistical rigour for our assessment of progressive development from 'audience' to 'community' but the indications are that Nexxus has been successful in developing a LS network and that a LS community (a sense of group identity) may indeed be emerging. It is less clear what is feasible for Nexxus to achieve in building a LS 'community' as distinct from a 'network' across Scotland under current circumstances: this will not only take leadership from all stakeholders but also time and resource.

Contribution to the equity and equalities agenda

4.48 According to SE[32], this evaluation should make a specific assessment on the areas relating to equality, rural economic diversification, sustainable development/ lower carbon economy etc. This is based on the three strategic approaches identified in the Government Economic Strategy for promoting sustainable economic growth. We therefore assess the contribution of Nexxus to the equity and equalities agendas based on the feedback provided from our survey with Nexxus beneficiaries as follows (see also Annex B):

- *review of the project's Equality Impact Assessment* – we asked respondents "do you monitor employment under the following categories: gender, race, disability, age, religion/ belief, sexual orientation?" We received 123 business responses, of which only 11 stated they monitored gender and 10 stated they monitored each of the following: race, disability, age, religion/ belief, sexual orientation. It can safely be said that a very small minority of respondents actually monitor the above categories of employees
  - of those respondents who monitor their employees by category, we asked them *"*has using Nexxus services contributed to a positive or negative outcome in any way…" under the specific categories. All but one respondent stated "don't know". The one respondent who stated a "positive outcome" reported that: "we have increased our staff in the last seven months and feel there has been a positive outcome in all categories"
  - with regards to non-businesses, we received 92 responses of which only a very small minority were able to confirm monitoring of the relevant matters and a negligible number stated a positive outcome as result of using Nexxus services
- *contribution of the project to rural economic diversification* – our survey of beneficiaries did not capture Nexxus' contribution to rural economic diversification. However, the distribution of the beneficiaries is predominantly across the Central Belt and therefore not rural. Nexxus was not set-up to target rural organisations specifically
- *contribution of the project to sustainable development and lower carbon economy and minimising adverse environmental effects* – respondents were asked: "has using Nexxus' services contributed to any environmental impacts for your business?" Out of 123 responses to this question, only one business stated *"*Ye*s"*. This respondent considered that Nexxus has had a positive contribution to the company's environmental impact and stated that they were "in discussions about low carbon renewable energies".

4.49 It is fair to say that the vast majority of respondents find it difficult to see how Nexxus contributes to these cross-cutting agendas. This is partly reinforced by the fact that Nexxus has) not yet met its target for SEEKIT relating to the 'number of SMEs receiving support for energy savings and resource

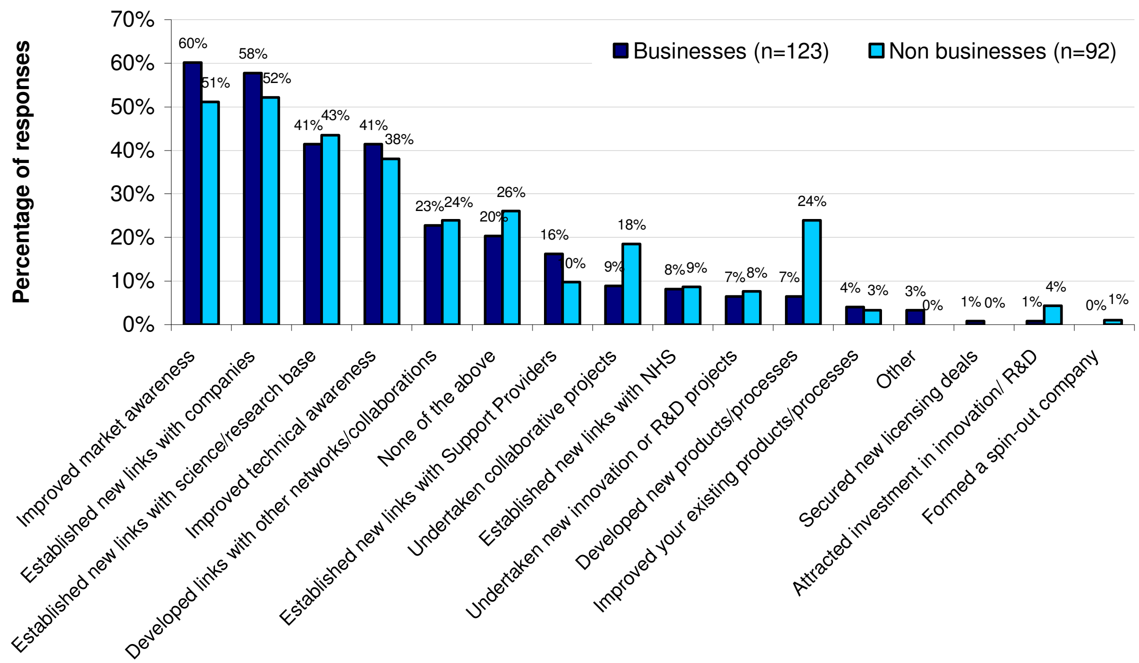
[32] As outlined in Consultant's Brief (Appendix 2).

efficiency' nor its target for ERDF on the 'number of renewable energy research projects supported' (see above). Frankly, given the mission of Nexxus within the LS cluster, we do not find this surprising.

5: Project benefits and impacts

5.1 This section provides details of the benefits which have been attributed to Nexxus by the 123 businesses and 92 non-businesses which were interviewed. Respondents were first asked to report which benefits they experienced as a result of using Nexxus (Figure 5-1). Only 20% and 26% of businesses and non-businesses respectively reported that Nexxus had led to *no* benefits. More than half of businesses reported that Nexxus had led to improved market awareness (60%) and allowed them to establish new links with companies (58%). Other benefits which were widely reported by companies included the establishment of new links with the science/research base (41%) and improved technical awareness (41%). Similarly high proportions of non-businesses reported the same benefits. The average number of different types of benefit reported as a result of Nexxus was three.

Figure 5-1: Percentage of survey respondents reporting that they experienced the following benefits as a direct result of using Nexxus services



SQW

5.2 Respondents were also asked to rate the importance of the benefits which had been gained from using Nexxus[33]. In general, the level of importance attached to these benefits is high. For example, across all benefits, the proportion of businesses which reported that they were ‘important’ or ‘very important’ was never lower than 60%[34]. Particularly important benefits were reported by the five businesses which had improved their existing products or processes as a result of using Nexxus’ services. Among non-businesses, importance rankings attached to the benefits associated with Nexxus services were in some cases even higher than for businesses. Although only three non-businesses reported improved existing products/processes, all three scored these benefits as important or very important. As with business responses, the other most important benefits were around establishing links with companies and the rest of the science/research base and undertaking new innovation or R&D projects.

Table 5-1: For benefits identified, proportion of respondents stating benefits were important or very important

	Businesses	% reporting 4 or 5	Non businesses	% reporting 4 or 5
Improved market awareness	74	70%	47	74%
Established new links with companies	71	85%	48	88%
Established new links with science/research base	51	84%	40	88%
Improved technical awareness	51	67%	35	71%
Developed links with other networks/collaborations	28	79%	22	77%
None of the above	25	n/a	24	n/a
Established new links with Support Providers	20	60%	9	78%
Undertaken collaborative projects	11	64%	17	82%
Established new links with NHS	10	70%	8	63%
Undertaken new innovation or R&D projects	8	88%	7	86%
Developed new products/processes	8	88%	22	67%
Improved existing products/processes	5	100%	3	100%
Secured new licensing deals	1	0%	0	n/a

[33] It is worth noting that we ‘cross-tabulated’ the responses for the Nexxus services used with the benefits reported by respondents. Overall, we found no noteworthy relationship between services used and benefits reported.

[34] The 0% values in Table 5-1 for businesses in relation to ‘Secured new licensing deals’ and ‘Attracted investment in innovation/ R&D’ do not mean that these services were rated poorly. In each case, the company did not provide an answer to how important these benefits were.

	Businesses	% reporting 4 or 5	Non businesses	% reporting 4 or 5
Attracted investment in innovation/ R&D	1	0%	4	75%
Formed a spin-out company	0	n/a	1	100%

Source: SQW/IBP Nexxus Business and Non-business Survey

Economic impact assessment

5.3 The business survey included questions which were designed to allow for the calculation of the economic impact associated with Nexxus' services, both in terms of impact to data and forecast impacts (see Annex B for full details). The assessment of quantitative impact includes the gross and net additional impact of Nexxus on supported businesses and the economy in terms of:

- turnover
- GVA
- employment.

Turnover and GVA impact

5.4 Interviewees were asked: "how much different do you think turnover would have been without Nexxus in each of the last three years" and were also asked to report anticipated future turnover. They were also asked to answer the question: "how much different do you think future turnover would be without Nexxus?"

5.5 Table 5-2 shows that Nexxus has made a contribution to increased turnover for a limited number of companies that were able to quantify impact over the last three years. Only five companies reported that Nexxus made a positive difference to the level of turnover achieved in 2008/09 and 2009/10, whilst eight stated that without Nexxus their 2010/11 turnover would have been lower. Just under half of all businesses interviewed stated that for each of the last three years, Nexxus had made no difference to the level of turnover achieved. Slightly less than half of the businesses interviewed report that they did not know whether Nexxus had made any difference to the turnover achieved in the last three years.

Table 5-2: How much different do you think turnover would have been without Nexxus?

	2008/09	2009/10	2010/11	Future
Higher	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Lower	5 (4%)	5 (4%)	8 (7%)	32 (26%)
No difference	58 (47%)	60 (49%)	60 (49%)	59 (48%)
Don't know	60 (49%)	58 (47%)	55 (44%)	32 (26%)
Total number of responses	**123**	**123**	**123**	**123**

Source: SQW/IBP Nexxus Business Survey

5.6 Companies were more positive about the anticipated impact that the use of Nexxus services will have on future turnover: 32 companies (26%) reported that without Nexxus, their future turnover would be lower. The values given by these companies are assumed to cover five years of analysis into the future i.e. the deadweight percentage for each company does not change over time for future years.

5.7 In assessing the net turnover and GVA impact, the approach taken only considered those companies which made a definite connection between Nexxus and a difference in turnover. Therefore, for 2008/09 and 2009/10, the analysis was undertaken for five companies, increasing to eight for 2010/11 and 32 for 2011/12, 2013/14 and 2015/16. The methodology used to assess the gross and net turnover, and GVA impact associated with Nexxus is shown in Table 5-3.

Table 5-3: Economic impact methodology

Step	Methodology	Source of data/assumptions
Turnover	(A)	Responses to business survey questions: *What has been your business turnover in each of the following financial years – 2008/09, 2009/10 and 2010/11?* *What do you expect your turnover to be in 2011/12, 2013/14 and 2015/16?* Turnover was converted into 2010/11 prices for each year using HM Treasury GDP Deflators[35]. A discount rate of 3.5% was also applied to future turnover estimates, in line with HM Treasury Green Book guidance[36] Given the uncertainty over the accuracy of the future turnover estimates provided, we have also applied the following optimism bias[37]: 2011/12 – 34% 2013/14 – 44.6% 2015/16 – 58%
Deadweight[38]	(B)	Responses to business survey questions: *Thinking about turnover generated in each year, how much different do you think turnover would have been without Nexxus?* *Thinking about your future turnover estimates, how much different do you think turnover would be without Nexxus?*
Gross turnover impact (C)	= (A) * (1- (B))	
Leakage[39]	(D)	Leakage is calculated as company employees based outside of Scotland divided by total employment. Uses responses to business survey questions: *How many staff were employed in this business?* *Approximately how many of your employees in the latest financial year are based outside of Scotland?*
Substitution[40]	(E)	Responses to business survey question: *Did the Nexxus services you used result in your business substituting one activity for a similar one to take advantage of these services?*

35 Available from http://www.hm-treasury.gov.uk/d/gdp_deflators.xlsx

36 Available from http://www.hm-treasury.gov.uk/d/green_book_complete.pdf

37 Optimism bias values are based on Scottish Enterprise (2010) *R&D Grant and Innovation Support Grant Evaluation.* This report uses an optimism bias of 34% in the first future year, 50% in the fourth future year and 66% in the sixth future year. We have calculated optimism bias based on these figures, calculated for the first, third and fifth year from now.

38 Scottish Enterprise (2008) Economic Impact Assessment Guidance Note defines deadweight as follows *"the reference case is the situation, in terms of benefits, that would occur if the intervention was not implemented…The quantification of outputs, outcomes and impact under the reference case is referred to as deadweight"*.

39 *Ibid.* defines leakage as "*the proportion of outputs that benefit those outside of the intervention target area or group"*.

40 *Ibid.* defines substitution as follows: *"The effect of substitution arises where a firm substitutes one activity for a similar one to take advantage of public sector assistance"*.

Step	Methodology	Source of data/assumptions
Displacement[41]	(F)	Responses to business survey question: *Thinking about competition in your main area of business, which of the following statements best describe your business?*
Net turnover impact (excluding multipliers) (G)	= (C) * (1- (D)) * (1- (E)) * (1- (F))	
GVA to turnover ratio	(H)	Uses the average GVA to turnover ratio for Input Output sectors which best fit to SIC codes 24.1, 33.1 and 73. Uses data from Scottish Government Input Output tables[42]. The calculation of a GVA to turnover ratio for the Life Sciences sector is shown in Table 5-4.
Net GVA impact (excluding multipliers) (I)	= (G) * (H)	
Type II GVA multiplier[43]	(J)	Average Type II GVA multipliers for Input Output sectors which best fit to SIC codes 24.1, 33.1 and 73. Uses data from Scottish Government Input Output tables. The calculation of a Type II GVA multiplier for the Life Sciences sector is shown in Table 5-5.
Net GVA impact (including multipliers) (K)	= (I) * (J)	

Source: SQW

[41] *Ibid.* defines displacement as *" the proportion of intervention benefits accounted for by reduced benefits elsewhere in the target area"*.
[42] Available from http://www.scotland.gov.uk/Resource/Doc/919/0110399.xls
[43] Scottish Enterprise (2008) *op cit.* defines multiplier effects as *"further economic activity (jobs, expenditure or income) associated with additional local income and local supplier purchases"*.

Assumptions

5.8 The following tables provide key assumptions used in the economic impact assessment.

Table 5-4: Calculation of GVA to turnover ratio for the Life Sciences sector[44]

SIC Code	Input Output best fit	Total GVA (£m)	Total turnover (£m)	GVA to turnover ratio
24.4: manufacture of pharmaceuticals, medicinal chemicals and botanical products	43: pharmaceuticals, medicinal chemicals and botanical products	339.9	640.4	1.88
33.1: manufacture of medical and surgical equipment and orthopaedic appliances	76: medical, precision and optical instruments, watches and clocks	917.3	1910.5	2.08
73.1: research and experimental development on natural sciences and engineering.	108: research and development	356.7	650.6	1.82
Estimated GVA to turnover ratio for the Life Sciences sector	**-**	**-**	**-**	**1.9**

Source: http://www.scotland.gov.uk/Resource/Doc/919/0110399.xls

Table 5-5: Calculation of Type II multipliers for the Life Sciences sector

SIC Code 2003	Input Output best fit	GVA multiplier	Employment multiplier
24.4: manufacture of pharmaceuticals, medicinal chemicals and botanical products	43: pharmaceuticals, medicinal chemicals and botanical products	1.47	1.89
33.1: manufacture of medical and surgical equipment and orthopaedic appliances	76: medical, precision and optical instruments, watches and clocks	1.59	1.97
73.1: research and experimental development on natural sciences and engineering.	108: research and development	1.77	1.46
Estimated Type II multiplier for the Life Sciences sector	**-**	**1.61**	**1.77**

Source: http://www.scotland.gov.uk/Resource/Doc/919/0110399.xls

5.9 In adjusting all prices to 2010/11 prices, it is assumed that respondents took inflation into account when providing estimates of future turnover. We have also included a discount rate of 3.5% in line with the HM Treasury (2003) Green Book on the future GVA impacts so that a Net Present Value[45] (NPV) can be calculated.

[44] Data has been used for a single year (2007) because a five year average is not available from Input Output tables. Scottish Annual Business Statistics were not used because the data is not available at the level of three digit SICs.
[45] The term Net Present Value (NPV) is used to describe the difference between the present value of a stream of costs and a stream of benefits.

Table 5-6: Price deflators	
Year	**2010/11 = 100**
2008/09	95.41
2009/10	96.99
2010/11	100.00
2011/12	102.43
2013/14	104.56
2015/16	107.18

Source: SQW calculations based on HM Treasury GDP deflators. Available from http://www.hm-treasury.gov.uk/d/gdp_deflators.xlsx

Summary of turnover and GVA impact

5.10 A complete summary of the estimated economic impact of Nexxus on companies who reported that the use of Nexxus services has made a quantifiable impact on their turnover during the period 2008/09 to 2010/11 is shown in Table 5-7, broken down by year. A set of company-by-company calculations for each year of interest, following the methodology outlined in the table above, is provided in a separate annexe (Annex D).

Table 5-7: Summary of turnover and GVA impact to date (£m, 2010/11 prices)

Year	Number of businesses in analysis	Gross turnover impact (including optimism bias adjustment)	Net turnover impact (excluding multipliers)	Net GVA impact (excluding multipliers)	Net GVA impact (including multipliers and outlier)	Average GVA impact per company (including multipliers and outlier)	Average GVA impact per company (including multipliers and excluding outlier)
2008/09	5	£4.47m	£0.67m	£0.35m	£0.57m	£114,051	£7,740
2009/10	5	£5.04m	£0.77m	£0.41m	£0.66m	£130,905	£11,391
2010/11	8	£6.23m	£1.05m	£0.55m	£0.89m	£111,194	£19,531
Total impact to date	-	£15.73m	£2.50m	£1.31m	£2.11m	-	-

Source: SQW

5.11 The net GVA impact to date (2008/09 to 2010/11) including multipliers across those companies which attributed impact to Nexxus is estimated at: **£2.11 million. However, it is important to note that £1.86 million of this was attributed by a single company. In extrapolating impact to the population,**

we have excluded this company (this statistical outlier) when calculating the average GVA impact per company which is then applied to the rest of the population.

5.12 We also present in Table 5-8 a summary of expected future impacts for the period 2011/12 to 2015/16. The survey only asked businesses about turnover and impact in 2011/12, 2013/14 and 2015/16. The impacts in 2012/13 and 2014/15 have been estimated using the average of the year immediately before plus the subsequent year.

Table 5-8: Summary of turnover and GVA impact in future (£m, 2010/11 prices, present values[46])

Company	Number of businesses in analysis	Gross turnover impact	Net turnover impact (excluding multipliers)	Net GVA impact (excluding multipliers)	Net GVA impact (including multipliers)	Average Net GVA impact per company (including multipliers)
2011/12	32	£2.54m	£1.00m	£0.52m	£0.84m	£26,379
2012/13	32	£3.07m	£1.60m	£0.84m	£1.35m	£42,240
2013/14	32	£3.60m	£2.19m	£1.15m	£1.86m	£58,100
2014/15	32	£3.15m	£1.83m	£0.96m	£1.55m	£77,335
2015/16	32	£2.70m	£1.46m	£0.77m	£1.23m	£61,709
Total future impact	32	£15.06m	£8.07m	£4.25m	£6.84m	-

Source: SQW (The survey only asked businesses about turnover and impact in 2011/12, 2013/14 and 2015/16)

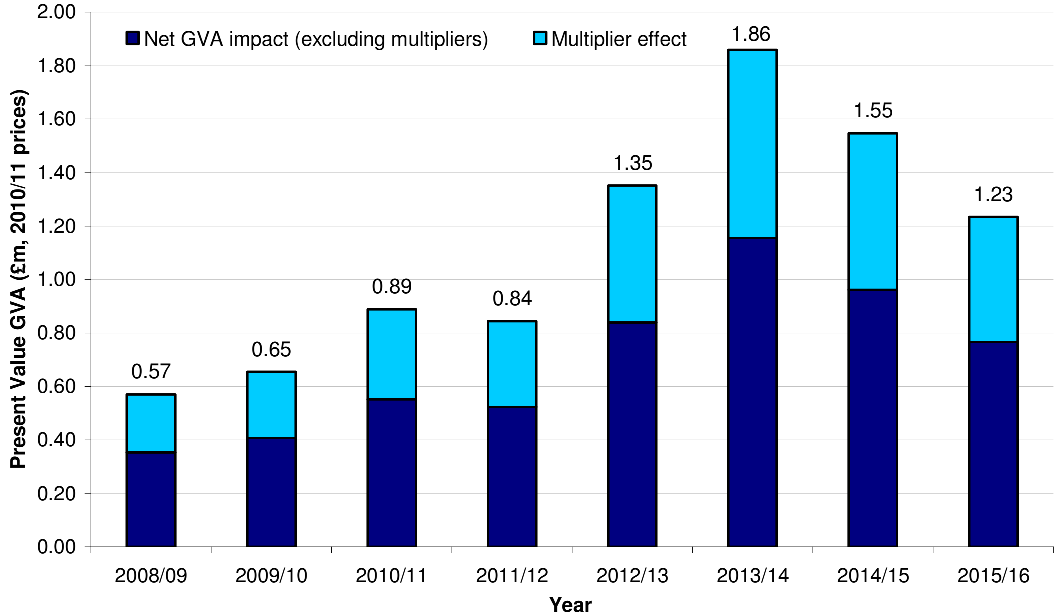
5.13 To summarise the results above, it is estimated that the net GVA impact including multipliers across the sample of companies who report that Nexxus made a positive difference to their turnover is as follows:

- £2.11m to date (2008/09 to 2010/11)
- £6.84m in anticipated future GVA (2011/12 to 2015/16)
- £8.95m in total (2008/09 to 2015/16).

5.14 The increasing economic impact of Nexxus is presented in Figure 5-2. This increasing impact is due to two reasons: a strong expectation of turnover growth among businesses and an increasing number of businesses attributing some of this growth to Nexxus.

[46] Present Value: the future value expressed in present terms by means of discounting.

Figure 5-2: Net GVA impact of Nexxus on sample (£m, 2010/11 prices, present values)



Source: SQW

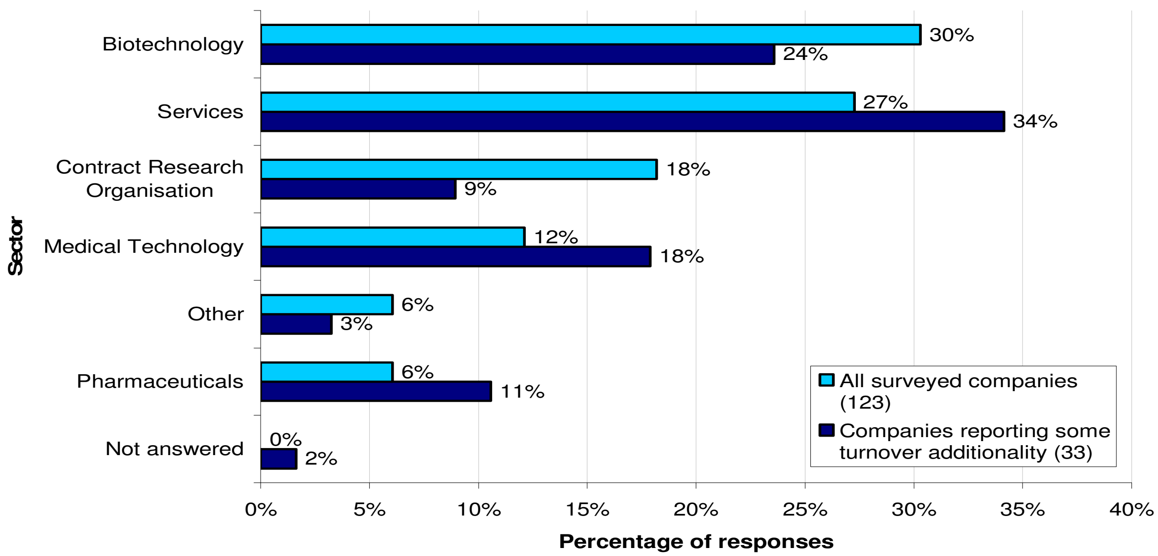
5.15 It is worth noting that there was no attempt to identify the economic impact of Nexxus beyond 2015/16 because feedback given from businesses during a series of pilot interviews found that trying to report turnover in ten years time was impossible for the interviewees.

Extrapolating from sample to population

5.16 Table 5-7 provides a robust estimate of economic impact *for those businesses which attributed some degree of additionality to Nexxus*. However, this group only makes up around 32% of the entire population of companies which have used Nexxus services. In order to provide some sense of the potential overall economic impact that Nexxus has had on the population of its business beneficiaries, an extrapolation was undertaken. While the results of this extrapolation should be seen as an indicative of Nexxus' impact rather than a robust analysis based on empirical data, it nevertheless provides a useful indicator of the scale of what Nexxus' economic contribution overall may be.

5.17 In extrapolating up to the population, it was important to ensure that the key characteristics of the sample were broadly similar to those of the population. While it was not possible to identify the characteristics of the whole population given that not every company was interviewed, a comparison could be made between the characteristics of those companies which attributed impact with the characteristics of the 123 companies which were interviewed. The sub-sectoral structure of the 33 companies which reported some impact is broadly similar to that of all 123 surveyed companies. In particular, the two largest sub-sectors in both groups of companies are biotechnology and services.

Figure 5-3: Sectoral comparison of those companies which reported some turnover additionality associated with Nexxus and all surveyed companies



Source: SQW/IBP Business Survey

5.18 A number of further assumptions were made in undertaking the extrapolation. Firstly, it was assumed that a similar proportion of the population which did not answer this turnover attribution question would, if possible to do so, have attributed additional turnover to Nexxus in the same proportion as those that did provide a response. For example, for 2008/09, eight percent of those who answered the attribution question reported that Nexxus had led to an increase in turnover. Applying this eight percent figure to the remainder of the population (123[47]) means that it is likely that eight companies in the remainder of the population would also attribute some turnover additionality to Nexxus. This assumption was used in each year of interest.

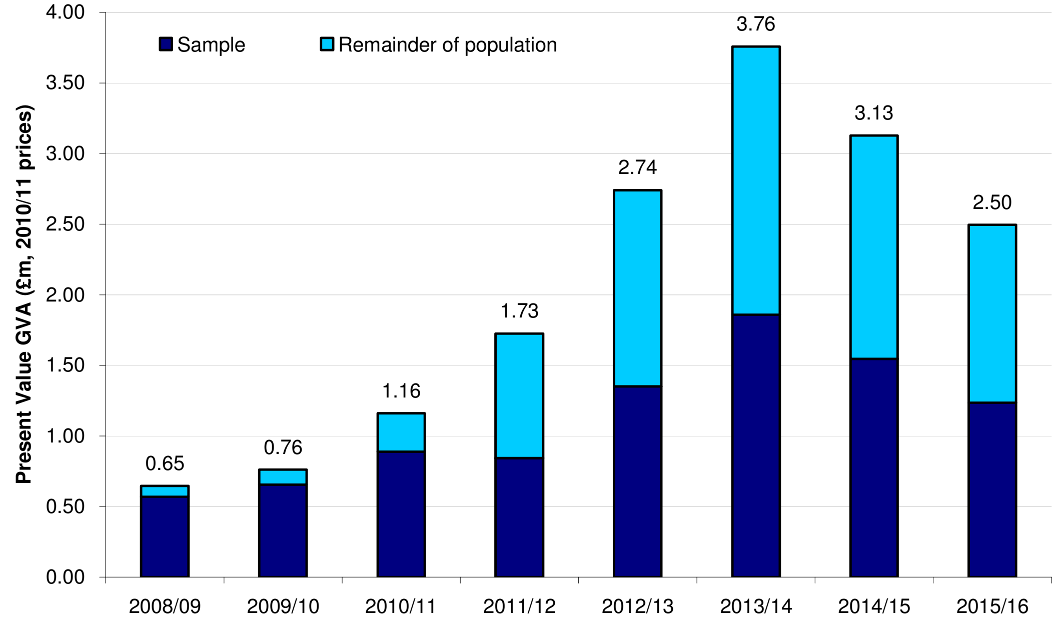
5.19 The second assumption is that for each of the companies for which attribution is unknown, they would have attributed the same average GVA impact to Nexxus[48]. This assumption is made in light of the lack of alternative information relating to turnover, deadweight, leakage, displacement or substitution for these companies.

5.20 Figure 5-4 below shows the estimated net GVA impact across the 186 companies which have used Nexxus services. Based on the extrapolation and associated assumptions outlined above, it is estimated that the net GVA impact including multipliers for the population of 186 companies is as follows:

- £2.57m to date (2008/09 to 2010/11)
- £13.86m in anticipated future GVA (2011/12 to 2015/16)
- £16.41m in total (2008/09 to 2015/16).

[47] Five businesses attributed some of their 2008/09 turnover to Nexxus. A further 58 companies reported that Nexxus made no contribution (positive or negative) to their turnover. This leaves a total of 123 businesses out of the total population of 186 for which attribution is unknown.
[48] This average excludes the outlier identified for 2008/09, 2009/10 and 2010/11.

Figure 5-4: Estimated net GVA impact across the population, including multiplier effects (£m, 2010/11 prices, present values)



Source: SQW

5.21 Table 5-9 below outlines the details of the calculation method used to estimate the total economic impact of Nexxus across the whole population of companies which have used Nexxus.

Table 5-9: Extrapolating economic impact of Nexxus to whole population

	Methodology	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Survey respondents									
Nexxus led to an improvement	(a)	5	5	8	32	32	32	20	20
No difference	(b)	58	60	60	59	60	60	72	72
Total responses (c)	= (a) + (b)	63	65	68	91	92	92	92	92
Nexxus led to an improvement in turnover (%) (d)	= (a) / (c)	8%	8%	12%	35%	35%	35%	22%	22%
No difference (%) (e)	= (b) / (c)	92%	92%	88%	65%	65%	65%	78%	78%
Remainder of population									
Total population of businesses	(f)	186	186	186	186	186	186	186	186
Remainder of population, excluding those who reported on Nexxus' impact on turnover (g)	= (f) – (c)	123	121	118	95	61	94	94	94
Remainder of population - Nexxus led to an improvement (123 * 8%) (h)	= (d) * (g)	10	9	14	33	33	33	20	20
Remainder of population - No difference	= (e) * (g)	113	112	104	62	61	61	74	74
Total economic impact of Nexxus									
Net GVA impact (including multipliers) – *Survey respondents*	(i)	0.57	.56	.89	.84	1.35	1.86	1.55	1.23
Average GVA impact per business (including multipliers, **excluding outliers**)	(j)	£7,740	£11,391	£19,531	£26,379	£42,240	£58,100	£77,335	£61,709
Net GVA impact (including multipliers) - *Remainder of population* (k)	= (h) * (j)	0.08	0.11	0.27	0.88	1.39	1.90	1.58	1.26
Net GVA impact (including multipliers) - *Total population*	= (i) + (k)	0.65	0.76	1.16	1.73	2.74	3.76	3.13	2.50

Source: SQW

Employment impact

5.22 We report on our estimates of the employment impact below. The estimates are based on a number of specified assumptions.

5.23 Very few companies reported that Nexxus had, to date, made any impact on employment levels. One company reported that without Nexxus, its employment would have been lower in 2009/10 and another stated employment would have been lower in 2010/11. The majority reported that Nexxus has made no difference.

5.24 Looking forward, 17 companies (14%) expected Nexxus to lead to an increase in employment in the future. A further 50 (41%) did not know what the impact of Nexxus would be on employment levels whilst 56 (46%) reported that Nexxus will make no impact on future number of employees.

Table 5-10: How much different do you think employment would have been without Nexxus?

	2008/09	2009/10	2010/11	Future
Higher	0 (%)	0 (0%)	0 (0%)	0 (0%)
Lower	0 (%)	1 (1%)	1 (1%)	17 (14%)
No difference	97 (79%)	100 (81%)	103 (84%)	56 (46%)
Don't know	7 (6%)	7 (6%)	10 (8%)	50 (41%)
Did not answer	19 (11%)	15 (12%)	9 (7%)	0 (0%)
Total number of responses	**123**	**123**	**123**	**123**

Source: SQW/IBP Business Survey

5.25 The methodology used to calculate gross and net additional change in employment attributable with Nexxus is shown in Table 5-11.

Table 5-11: Employment impact methodology

Step	Methodology	Source of data/assumptions
Employment	(A)	Responses to business survey questions: *How many staff were employed in this business in each of the following financial years – 2008/09, 2009/10 and 2010/11?* *What do you expect your employment to be in 2011/12, 2013/14 and 2015/16?*
Deadweight	(B)	Responses to business survey question: *Thinking about the number of employees in each year, how much different do you think employment would have been without Nexxus?* *Thinking about your future employment estimates, how much different do you think employment would be without Nexxus?*
Gross employment impact (C)	= (A) * (1-(B))	
Leakage	(D)	Leakage is calculated as company employees based outside of Scotland divided by total employment. Uses responses to business survey questions: *How many staff were employed in this business?* *Approximately how many of your employees in the latest financial year are based outside of Scotland?*
Substitution	(E)	Responses to business survey questions: *Did the Nexxus services you used result in your business substituting one activity for a similar one to take advantage of these services?*
Displacement	(F)	Responses to business survey questions: *Thinking about competition in your main area of business, which of the following statements best describe your business?*
Net employment impact (excluding multipliers) (G)	= (C) * (1-(D)) * (1-(E)) * (1-(F))	
Type II employment multiplier	(H)	Average Type II employment multipliers for Input Output sectors which best fit to SIC codes 24.1, 33.1 and 73.1 Uses data from Scottish Government Input Output tables. The calculation of a Type II employment multiplier for the Life Sciences sector is shown in Table 5-5.
Net employment impact (including multipliers) (I)	= (G) * (H)	

Source: SQW

5.26 As with turnover and GVA, a complete set of company-by-company calculations to assess the employment impact of Nexxus for each year of interest is provided in a separate annex. A summary of the total estimated employment impact of Nexxus on the companies who reported a quantifiable impact on their turnover is shown in Table 5-12. For 2012/13 and 2014/15, the employment impact is based on the average of the year immediately before plus the subsequent year.

Table 5-12: Summary of employment impact for population (FTE job years[49])

Year	Gross employment impact	Net employment impact (excluding multipliers)	Net employment impact (including multipliers)
2008/09	-	-	-
2009/10	2.3	2.3	4.1
2010/11	1.5	1.5	2.7
2011/12	23.4	12.8	22.6
2012/13	23.8	11.7	20.7
2013/14	24.1	10.6	18.8
2014/15	26.9	12.1	21.4
2015/16	29.7	13.5	24.0

Source: SQW

5.27 Table 5-13 shows the employment impact extrapolations from the survey respondents up to the whole population of 186 companies which have used Nexxus' services.

[49] An example of a 'job-year' is as follows: if a project employs 1,500 people over 10 years, the fulltime equivalent job-years equals 15,000 (1,500 people multiplied by 10 years).

Table 5-13: Extrapolating employment impact of Nexxus to whole population

	Methodology	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Survey respondents									
Nexxus led to an improvement in employment	(a)	0	1	1	17	*17*	17	*17*	17
Nexxus made no difference to employment	(b)	97	100	103	56	*56*	56	*56*	56
Total responses (c)	= (a) + (b)	97	101	104	73	*73*	73	*73*	73
Nexxus led to an improvement (%) (d)	= (a) / (c)	0%	1%	1%	23%	*23%*	23%	*23%*	23%
No difference (%) (e)	= (b) / (c)	100%	99%	99%	77%	*77%*	77%	*77%*	77%
Remainder of population									
Total population of businesses	(f)	186	186	186	186	*186*	186	*186*	186
Unknown population (g)	= (f) – (c)	89	85	82	113	*113*	113	*113*	113
Unknown population - Nexxus led to an improvement (h)	= (d) * (g)	0	1	1	26	*26*	26	*26*	26
Unknown population – Nexxus made no difference to employment	= (e) * (g)	89	84	81	87	*87*	87	*87*	87
Total employment impact of Nexxus									
Average net employment impact per business	(i)	0.0	4.1	2.7	1.3	1.2	1.1	1.3	1.4
Net employment impact - Sample	(j)	0	4	3	23	*21*	19	*21*	24
Net employment impact - *Remainder of population (k)*	= (i) * (h)	0	3	2	35	*32*	29	*33*	37
Net employment impact - *Total population*	**= (j) + (k)**	**0**	**7**	**5**	**58**	***53***	**48**	***54***	**61**

Source: SQW

5.28 Based on the extrapolation outlined above, it is estimated that the net employment impact including multipliers across the population of 186 companies is:

- 12 FTE job years to date (2008/09 to 2010/11)
- 274 anticipated future FTE job years (2011/12 to 2015/16)
- 286 FTE job years in total (2008/09 to 2015/16).

Time and quality additionality of using Nexxus

5.29 As well as considering what difference Nexxus made to companies turnover and employment in each year of interest, the survey asked a number of questions relating to time and quality additionality.

5.30 Companies were asked to consider whether if they had not used Nexxus services, the level of turnover and employment which they achieved in 2008/09, 2009/10 and 2010/11 would have been reached earlier, later or at about the same time. No companies stated that the level of turnover and employment achieved in each year would have been achieved any later. A small number of companies did report that Nexxus had 'sped up' the levels of turnover achieved in 2008/09, 2009/10 and 2010/11. Two companies also reported that Nexxus had allowed them to achieve the employment levels in 2009/10 and 2010/11 quicker than they otherwise would have done.

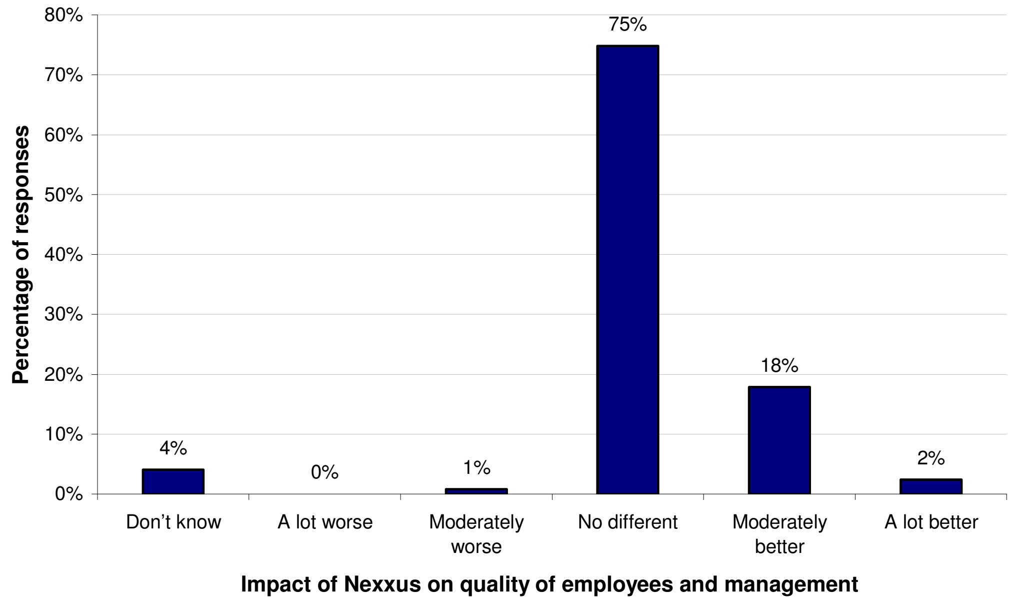
Table 5-14: Without Nexxus would you have reached the level of turnover/employment you achieved in each year earlier, later or at about the same time?

	Turnover			Employment		
	2008/09	**2009/10**	**2010/11**	**2008/09**	**2009/10**	**2010/11**
Earlier	0	0	0	0	0	0
Later	4	5	5	0	2	1
About the same time	20	22	23	39	41	45
Don't know	99	96	95	84	80	77
Total	123	123	123	123	123	123

Source: SQW/IBP Nexxus Business Survey

5.31 Respondents were also asked to consider whether, in addition to supporting additional employment, the use of Nexxus services had led to an improvement in the quality of their employees and management. Although three-quarters of companies reported that Nexxus had made no difference to the quality of their staff, 18% reported Nexxus that services had made the quality of their staff and management moderately better and a further 2% reported it had made the quality of staff and management a lot better.

Figure 5-5: Has Nexxus made the quality of employees and management…



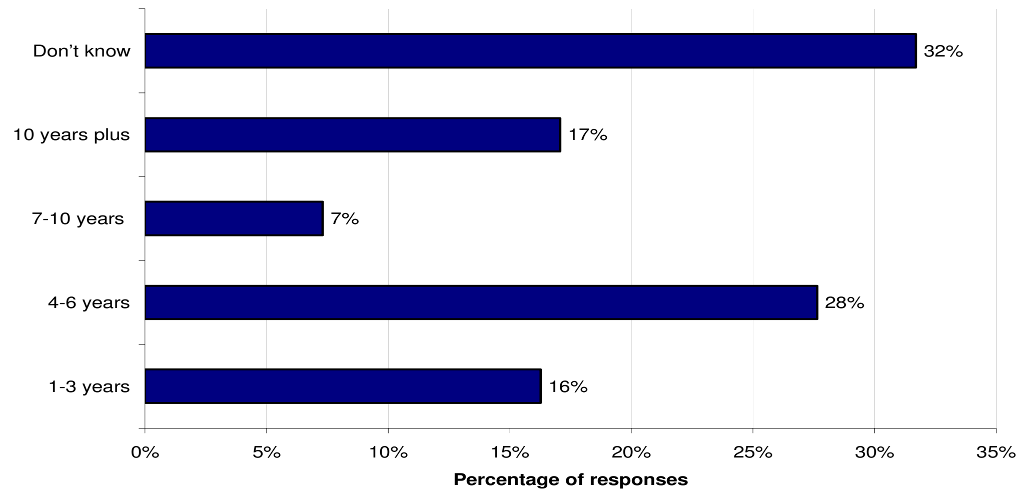
Source: SQW/IBP Nexxus Business Survey (n=123)

5.32 Companies reported that they expect the benefits of the Nexxus services which they have used to date will last a long time. Almost a quarter (24%) of all the companies interviewed expect the benefits of the Nexxus services they have used to date to last for more than seven years. A further 28% expect the benefits to last for between four and six years, and 16% percent expect the benefits to last between one an three years. Around a third of respondents could not provide an estimate of how long the benefits will last.

5.33 We consider the above findings on persistence to be relatively high for an intervention of this nature. BIS research[50] on persistence identifies persistence of benefits for "business development and competitiveness" and "sector/ cluster support" interventions to be c. 3 years. We therefore caution when interpreting the results reported above and in Figure 5-6.

[50] BIS (2009) RDA Evaluation: Practical Guidance on Implementing the Impact Evaluation Framework. See: http://www.bis.gov.uk/assets/biscore/economics-and-statistics/docs/09-1559-rda-evaluation-practical-guidance-main-report

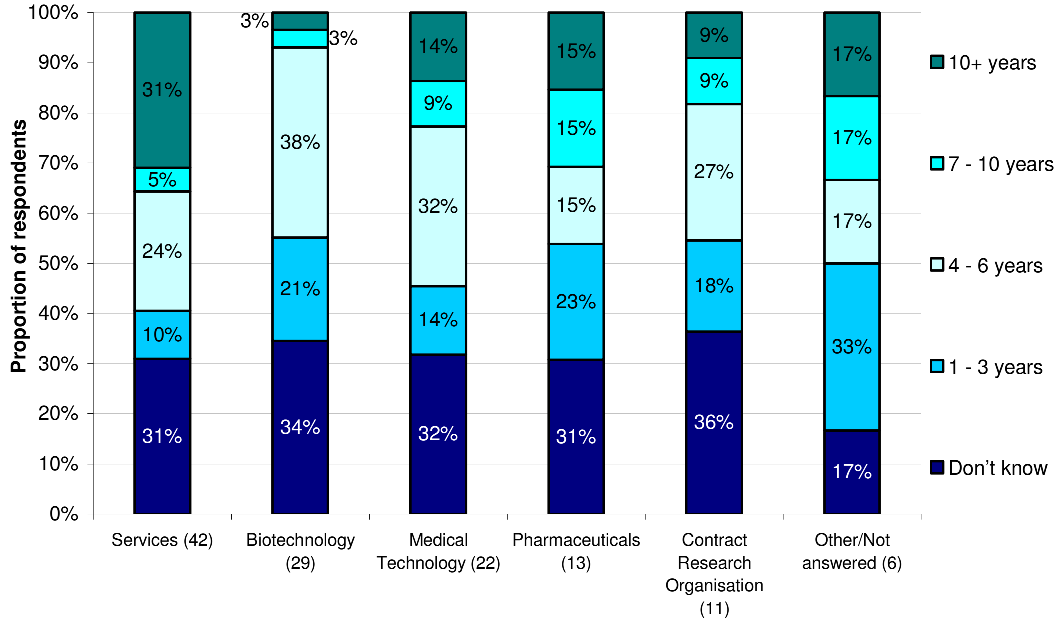
Figure 5-6: How long do you expect the benefits for using Nexxus services (to date) to last?



Source: SQW/IBP Nexxus Business Survey (n=123)

5.34 For each sub-sector, the number of businesses which reported that they did not know how long the benefits would last was generally around one third. However, there were differences between the sectors in terms of how long the benefits of Nexxus were forecast to last. Life sciences service companies were the most positive about the persistence of benefits, with just under a third stating that they expected the benefits to last for ten years or more. Biotechnology companies were also positive about the persistence of benefits, with 44% reporting that benefits would last at least seven years. However, it should be noted that the samples of responses from each subsector is small, especially for pharmaceuticals and contract research organisations. Therefore these results should be treated as indicative.

Figure 5-7: How long do you expect the benefits for using Nexxus services (to date) to last? Analysed by sector



Source: SQW/IBP Nexxus Business Survey

Value for money

5.35 To make an assessment of value for money, we compare the total project funding for the three years which are covered by this evaluation i.e. £1.279 million, against the benefits which have accrued in those three years to the group of companies which were able to identify whether Nexxus had any impact on their turnover to date. We compare the total funding of Nexxus with the net GVA benefits estimated for the sample and the entire population of 186 companies which have used Nexxus services over the period 2008/09 to 2010/11. This gives the economic impact ratios shown in the table below. Again, these ratios should be treated with caution because of the assumption required for extrapolation process. We consider our analysis to err on the conservative side.

5.36 Given SE's contribution to the funding of Nexxus over the last three years was £169,000 or 13% of the total funding, we have also attributed 13% of the NPV to SE.

Table 5-15: Economic impact analysis

	Sample		Population	
	Impact to date (08/09 to 10/11)	**Total impact (08/09 to 15/16)**	**Impact to date (08/09 to 10/11)**	**Total impact (08/09 to 15/16)**
Present value of costs	£1.28m	£1.28m	£1.28m	£1.28m
Present value GVA benefits	£2.11m	£8.95m	£2.57m	£16.41m
Net Present Value	**£0.84m**	**£7.67m**	**£1.29m**	**£15.13m**
Net Present Value (SE contribution)	£0.11m	£1.00m	£0.17m	£1.97m
Economic impact ratio (benefit cost ratio)	**1.65**	**7.00**	**2.01**	**12.83**

Source: SQW

6: Assessment of usage, quality and demand

6.1 This section reports the views obtained through a programme of consultations with individuals who participate in Nexxus, in its funding and/or its steering. (see Annex A for the list of consultees). One of the characteristics of Nexxus is its role in connecting across the interfaces between business, academia and the NHS. In this section, therefore, we summarise views on Nexxus gained from consultations undertaken in each of these three constituencies, as well as summarising the economic development perspective.

6.2 Although the overall feedback on Nexxus, its outputs and its staff is complimentary, there are in detail diverse and in places contrasting views expressed in response to the open questions posed during the consultations. We summarise these views below to provide insights additional to those that have been gained from the survey evidence reported elsewhere. It is important to record that whilst we consider the insights to be very valuable given the status of the consultees, *no statistical significance is claimed for the views that are reported.* In the sub-section on 'demand', we supplement the views of consultees with evidence gained from the telephone survey undertaken as part of this evaluation.

Assessment of usage

6.3 Highlights of the feedback on usage/ take-up of Nexxus services include:

- *positive change:* the introduction and take-up of Nexxus services has resulted in a step-change in the nature of the 'landscape' for the Life Science cluster in Scotland. For one industry consultee the change has been "from nothing of this kind in 2003-4" to substantial progress in creating a community. Over the c. 8 years since its formation, Nexxus is reported as delivering a successful programme of events, attracting high attendances by relevant people
- *balance of participation*: participation in Nexxus' activities over the years is reported as moving progressively towards what is seen as a more appropriate balance between business and the research-base (from originally c. 30% industry and 70% universities/NHS to a reversal of this): however, for one industry consultee the balance of activities and of participation is still too academic in nature
- *community building*: the progress of Nexxus in its mission to help develop a Life Science community is acknowledged by consultees from the university sector and the NHS: it has been successful in building and sustaining usage of its networking activities across Central Scotland. However, building a community is regarded as a long term and ongoing 'project'

- *cross-sector linkages*: there is a widely held view amongst industry consultees that Nexxus' services have been useful in making connections between people across the sector, albeit the business impact of this success is acknowledged as difficult to quantify. In the words of one consultee: "gut feel is that Nexxus has started the process of connecting the research-base with businesses. We see a lot of engagement by Nexxus, but it is difficult to see what the follow-up is"
- *personal contributions and commitment*: one consultee pointed to the substantial *pro bono* contributions of senior industry people in Nexxus as an indicator of the value they place on participation and on Nexxus itself. One industrial member of a Steering Group reported involvement in Nexxus for c. 3 years, attending quarterly steering group meetings and attending an event usually every six months. Similar commitments have been made, sometimes over many years, by senior individuals in the university sector and the NHS. There is, however, a sense that moving to a formal board structure may result in a more even level of commitment by steering group members as some current members are reportedly much more active than others
- *differentiation*: although acknowledging that other membership-based organisations operate in the sector, there appears to be a broad acceptance that Nexxus is 'different' as it: (a) does not lobby on behalf of companies; (b) it is pan-Life Science; and (iii) it is more active in organising events. Nexxus' services are open to and used by a diverse range of organisations. On its events programme, perhaps not surprisingly, there is a variation in views amongst business consultees as to whether there are too many or too few Nexxus events
- *strategic role*: we gained an overall sense from industry consultees of Nexxus having a strategic role in the sector. For one consultee who referred to an "alphabet soup" of Life Science initiatives in Scotland, Nexxus was useful as a way of streamlining access to the various initiatives
- *awareness of activities:* there are contrasting views and different levels of awareness of what Nexxus does. For example, two industry consultees specifically referred to the increasing role of Nexxus in connecting companies to providers of finance for business whereas a third knew nothing of its role here. For the latter, the events and publications remain the main outputs, with little knowledge or evidence of benefit associated with its one-to-one business development support.

6.4 The economic development perspective offered by consultees within SE points up a number of successes achieved by the initiative, some more tangible than others:

- successful replication of its model in the East of Scotland
- successfully building communities in both areas – "community building was the main role for Nexxus"
- "Nexxus has delivered a more cohesive sector"

- maintaining a programme of ‘interesting’, well attended events
  - occasions marked, in the view of one consultee, by a “collegiate spirit”
  - and attracting not just the “usual suspects”
- the new strategic links it is forming with European and US Life Science networks.

6.5 However, it is acknowledged that ‘success’ may be judged in different ways by different people, even differently within SE. None of the consultees who provide positive feedback on Nexxus and its successes go on to forecast significant ‘success’ for the organisation in effecting net additional change in for example GVA within the Scottish economy. One consultee, who described one of the possible pathways from Nexxus’ activities to a measurable business and economic impact (*viz*. by providing the circumstances for parties to meet for the first time who then go on to a successful commercial collaboration) argues that it would be hard in any event for Nexxus to claim more than 10% attribution for any ultimate impact achieved. One SE consultee advised that the evaluation should give due credit to the achievement of intended/desirable outcomes rather than just economic ‘impact’. In this context, anecdotal evidence was of value (see reports on case studies).

6.6 On the issue of pathways to business and economic impact, one the consultees cautioned that in terms of terms of companies making useful connections through the work of Nexxus, a “time lag” between attendance at events and “practical orders” for the business should be expected. This consultee noted that in any event, many of the companies are selling into international markets and by implication unlikely to meet prospective clients at Nexxus events. For those firms selling medical devices into the NHS, the latter’s procurement system is considered to be so standardised that the feasibility of Nexxus’ activities to date being able to assist directly in gaining measurable change and business impact must be regarded as uncertain.

Usage by SE Account Management

6.7 In assessing the usage of Nexxus’ services, we wished to examine the relationship between these and SE Account Management of Life Science companies. It is important to state at the outset that our empirical evidence here is extremely limited. However a number of insights can be provided:

- 37 out of 123 companies responding to our survey report that they are Account Managed by SE
- from our consultations, although Account Managers are reportedly aware of the links between some of their companies and Nexxus, the view was expressed that the level of awareness of what Nexxus does and the value it can add is probably quite varied amongst Account Managers working in the Life Science sector

- but in this context it is also argued that: "It is Nexxus' job to promote itself to the market"[51].

6.8 By implication therefore, whilst there may be instances in which Account Managers do refer companies to Nexxus, it may not be commonplace. In the context of referrals of businesses to Nexxus, one route that does seem to operate, according to information from Nexxus on its mentoring services, is that from 'Interface'.

6.9 For interest, we searched for the term 'Nexxus' on the Business Gateway online directory[52]. The search returned no results. We confirmed that Nexxus is listed in the Scottish Life Science source book.[53]

Quality

6.10 Highlights of the feedback from consultees on 'quality' of Nexxus services include:

- *effective*: a general view amongst industry consultees that Nexxus has been an effective networking organisation – an effective 'enabler' and 'marriage broker'. The ability of Nexxus to make connections between business, academia and the NHS is highly regarded
- *management:* its management and staff are praised for the quality of their contributions and for the quality of the events and communication mechanisms they have established (albeit with one individual arguing that the web site could be better in terms of providing a search facility for Life Science companies in Scotland and their profile)
- *attractor:* to illustrate both take-up and quality, one business consultee described the scene at a recent Nexxus' East of Scotland Annual Awards event: "not just stem cell people or some other sub-sector but an 'infusion' of the Life Science community, attracting quality people"
- *core purpose*: for another business consultee there was a concern that whilst Nexxus does deliver quality services it is still too focused on issues of concern to academia and is trying to do too may different things, diluting its objectives and spreading its resources too thinly. For this consultee, there is a need to re-assess what the prime focus should be
- *geographical scope:* one industry consultee expressed the view that Nexxus is delivering services on a "piecemeal basis": in this context, its key weakness is that it does not operate pan-Scotland. More generally, the majority view amongst consultees is that a pan-Scotland networking organisation based around what Nexxus does in West and East Scotland would be beneficial for the sector.

[51] The Account Manager we consulted had not yet attended a Nexxus event. We cannot say whether our consultee is representative of his peers.
[52] Available from http://www.bgateway.com/bdotg/action/findcontactbyname?site=202
[53] Available from http://apps.scottish-enterprise.com/search/supplierdirectorysearch.aspx?viewtreeid=167406

6.11 There is unanimity in the economic development perspective concerning the high level of overall satisfaction with Nexxus. The responses (paraphrased below) to direct questioning of views on value for money (vfm) for SE's contribution gives a flavour of the views received:

- 'yes vfm, and in any event SE's financial contribution over time has diminished despite an expansion of Nexxus' activities'
- 'yes vfm, and aided by SE being able to have a degree of ongoing influence on steering the initiative
  - and 'the Steering Groups, especially the one in the West, make a significant, wider strategic contribution to SE's pursuit of its objectives for the Life Sciences in Scotland'
- 'yes vfm, although it is hard to quantify the value of work intended to stimulate a change in third party business behaviours'
  - one consultee acknowledged that this intrinsic difficulty probably leads some SE colleagues to be more sceptical of its worth.
- overall Nexxus is a good initiative and is needed in Scotland: "There is value in it, how to define this is another matter".

6.12 However, on economy and efficiency, one consultee suggests that Nexxus may be very 'heavy' in terms of staff complement: "Not sure they are all needed". This perception persists despite the same consultee acknowledging that c. 2 years ago the operating model was changed to extract more benefit from staff working across both the East and West hubs. However, for another SE consultee the emphasis was different: the current Nexxus staffing level is a significant factor limiting what it can do to realise its full potential.

6.13 Whilst there is this overall high level of satisfaction with Nexxus, there is also dissatisfaction with its geographic scope, albeit this should not be taken as an adverse criticism of what Nexxus itself has achieved. There is an aspiration to have a single Nexxus-type function operate more widely across Scotland and not have Nexxus operate only in the Central Belt. This view of a pan-Scotland networking body mirrors feedback from some other consultees.

Strengths and weaknesses

6.14 In the table below, we have collated responses from consultees on perceived strengths and weaknesses: some of the specific weaknesses are probably more properly thought of as 'uncertainties' at this time over the value of some of the more recent Nexxus activities.

Table 6-1: Summary of strengths and weaknesses – informed by consultations

STRENGTHS	WEAKNESSES
• Nexxus is pan-Life Sciences, whilst other organisations are not: capability to provide what one consultee described as the 'glue' in what is a diverse, fragmented sector – it is helping to establish a more cohesive sector • Aligned well with prevailing national strategy for the sector • Runs well attended, successful events • Increasingly capable of achieving the mix of " right people, right content and right time" – good progress in increasing company participation • Capability to bring new people/organisations into the network • Capability to secure contributions in time and commitment from senior people in industry, the NHS and academia • Innovative in designing new activities • Learns from experience and makes sensible changes to its portfolio of activities • Willing and able to provide good ideas and insights to SE in a pro-active way • Quality of its staff • Nexxus management brings a welcomed 'positive intent' towards enhancing the cohesiveness of the sector in Scotland • Capability to network with international networks	• Mentoring work undertaken by Nexxus – uncertainty over nature and value • KE/KT audits undertaken by Nexxus - uncertainty over nature and value ➢ in both the above cases, also concerns about positioning with respect to other existing public sector interventions, including Life Science Business Advisors and Account Managers • Only operates in central Scotland • Uncertainty over impact to date on businesses of the west-to-west networking • Two steering groups – although helped by the fact that there is collaboration to avoid unproductive duplication of activities • Not a legal entity (no formality, no opportunity to contract) • Nexxus has done a good job but needs more focus – objectives could be tighter/SMARTer *Other issues to note:* From what may be a wholly unrepresentative sample: knowledge of the Nexxus' services offer may not be consistently well known to SE Account Managers involved with Life Science businesses: there would be merit in checking on the level of awareness of Nexxus services amongst Account Managers. Uncertainty over the need for both Nexxus and Interface is an implied weakness based on the view of one key consultee. Given the source of this feedback, there would be merit in checking on clarity of roles amongst key stakeholders especially in the public sector.

Contributions to strategic objectives

6.15 This complements the discussion earlier in the report based on a comparative assessment of Nexxus and the thrust of a number of key policy and strategy documents. Again the messages from consultees, paraphrased below, are positive in the main e.g.:

- Nexxus is "totally aligned" and "still fits well" with the national Life Science strategy which regards collaboration as key – domestically and internationally: "promoting collaboration is the role of Nexxus."
- Nexxus' management brings a welcomed 'positive intent' towards enhancing the cohesiveness of the sector in Scotland

- in this regard, Nexxus' work to establish good relations with the Life Science network in Aberdeen is welcomed: "Scotland needs one community and one approach"

- "there is a major issue around connectivity in the Life Sciences in Scotland. Nexxus is one component in addressing this, especially if it can be pan-Scotland".

6.16 The current and importantly the future positioning of Nexxus with respect to contributing to national strategic objectives for the 'connectedness' of the sector is to a large extent out with its control. For some consultees there is a concern about what they perceive as a 'cluttered' Life Science landscape in Scotland and concern over potential competition between different organisations for membership subscriptions from businesses. Nexxus has the potential to continue to contribute to national strategic objectives, but if it is to remain in existence in the absence of public sector funding then it does need to sell its service proposition to businesses and others in what may indeed prove to be a competitive market.

Demand

6.17 What follows initially is a summation of the views of consultees on what Nexxus might look like in future:

- *steering:* there is general support amongst consultees for a rationalisation of the Nexxus' steering structure. One industry consultee argued that whilst both West and East Scotland structures were necessary at the time of their formation, they are no longer needed in their present form. Two industry consultees, albeit in different terms, argued that Nexxus had the capability to work across Scotland – to work for "Team Scotland"

- *international links*: two industry consultees see value in Nexxus facilitating more links with international Life Science networks. This may address the concern of a third industry consultee that "Scotland suffers from being too parochial"

- *persisting requirement*: as network connections/ community interactions improve, there are mixed views over the continuing need for a formal networking organisation - the polar views are in essence: 'the need continues as new entrants arrive' vs. 'added value declines over time as success in building the community means that its members no longer need Nexxus to make connections'. Notwithstanding the progress made, our overall view is that at least for the medium term there does appear to be ongoing value in having a networking/community building process facilitated by an organisation like Nexxus. As some consultees point out, every place with a strong Life Science presence has a networking organisation as part of the local 'infrastructure'. We concur, and many of these are long-lasting

- *something of value*: whilst acknowledging that the business and economic impact of what Nexxus does is difficult to quantify and that the current climate for funding is also difficult, there is a general view amongst business consultees that Nexxus is something of value that should be continued. The inputs received from university and NHS consultees, although more limited in number, also point to the value of Nexxus to date and its continuing relevance. The challenge for Nexxus is to establish a proposition that can attract funding from universities and the NHS as well as the business base, i.e. from all the constituencies that express positive views on the value of the initiative

- in arguing that 'everyone should pay something', one consultee emphasised the importance of this including Scottish Enterprise in its role in supporting the development of the Life Science sector: this consultee argues that a networking body like Nexxus cannot be fully self-sustaining on membership subscriptions alone

- *sustainable business model*: there is clearly a recognition amongst business consultees who are all offering positive, supportive assessments of the Nexxus initiative that the challenge for Nexxus now is to establish a sustainable funding model which is much less reliant on public sector support. However in this context, one industry consultee noted that "businesses are also cutting back" and that Nexxus will need to demonstrate the positive difference it can make to the bottom line - otherwise it becomes vulnerable as only a 'nice to have' organisation for businesses.

  - this consultee indicated that a 'pay by use' membership model may prove more attractive to firms than an annual membership fee. This is clearly an issue that Nexxus will need to consider carefully as, intuitively, the lack of a 'core' income at least in the short-medium term is likely to introduce difficult cash flow issues in transitioning away from a grant-dependent business model.

  - there is a sense from business feedback that in order to obtain funding from membership subscriptions, Nexxus would need to develop a 'more concrete' set of services (examples offered as sources of revenue include training courses; a "multi-buy" scheme; advertising) and charge for attendance at events

- *access route to research and clinical expertise*: arguing for the importance to Scotland of growing or attracting Life Science "companies of scale" (e.g. ones capable of growing from £20m to c. £30m turnover), one consultee emphasised the crucial importance of growth driven by R&D and of providing firms with access to 'brains' within the research-base. There also appears to be an opportunity for Nexxus to add value by assisting Life Science companies find more effective routes into the NHS in support of innovation (to the benefit of firms and to the benefit of innovation for the NHS), as well as routes into universities

- *communication channel for government with the Life Science industry*: as with all key industry sectors in an economy, governments have a requirement for an effective channel of communication with key sectors on policy/regulatory issues. This typically requires an effective 'trade association' that is representative of the sector in question (a body which also lobbies government on behalf of its members). This is a role that Nexxus neither does nor wishes to perform.

6.18 Against a background of needing to generate new sources of (non-public sector) income, the potential revenues stream identified in the course of these consultations are[54]:

- upfront individual and/or organisational membership fees
- replicating the group procurement scheme operated by One Nucleus – which we understand is linked to its service offer in certain categories of membership
- charging for events
- charging on a pay-per-use basis for other services as an alternative to a membership scheme
- advertising in Nexxus' publications.

6.19 No strong consensus was evident.

6.20 The following insights from our consultees are relevant when considering the attractiveness and feasibility of these options:

- there are a number of membership-based organisations active in the Life Sciences active in Scotland: e.g. ABPI, BIA, the newly formed SLA in Scotland
  - ➢ in our view, careful differentiation of Nexxus and the added value from its membership would be required if a feasible business model based on membership fees was to be viable at any time, but especially in tough economic conditions. We do consider, based on stakeholder feedback, that differentiation between Nexxus and these other bodies (essentially 'trade associations') should be feasible, e.g. Nexxus is not involved in 'lobbying' policy makers
  - ➢ on this issue of differentiation, and as indicated earlier, it is notable that one senior level consultee posed the question in interview: "Why does Scotland need both Nexxus and Interface?" - again there is a job to be done in clarifying what is different about Nexxus, especially if public sector support of any kind is to be sustained
- there are a number of business support services in receipt of public sector funding, including ones relevant to the Life Science sector (including support from Business Gateway, from SE and Highlands & Islands Enterprise funded initiatives), not including commercial professional service providers

[54] Note, no-one volunteered corporate sponsorship of activities as a source of revenue.

- the diversification of the Nexxus' service offer recently has taken it into more intensive one-to-one support for firms and arguably on to the ground occupied by others. This is a relevant issue when public sector funding is sought: however, if Nexxus can gain revenue for this kind of activity directly from business clients then there is of course no reason why it should not do so – it is down to Nexxus to develop and sell into the market. Realistically, however, it would require a significant market adjustment to occur if the commercial provision of business support services by Nexxus was to replace what firms can access from the public sector.

6.21 Whilst a number of consultees volunteered favourable comments on the work of Nexxus to link with international networks, there was no real sense of these activities being considered as a revenue generating activity (at least not yet). We gained no sense of potential, viable revenue streams.

6.22 Amongst the feedback from industry representative involved in steering Nexxus, one individual expressed doubts about a membership-based business model, especially in current circumstances, unless Nexxus could demonstrate the likely difference to member businesses' "bottom-line". A "pay as you go" scheme was viewed as more attractive going forward but dependent on Nexxus having a "commercial brain" – "to become more customer-orientated in terms of knowing how to get money out of them and charge for services". It is for Nexxus to canvas opinion on this issue, but in our view, reliance wholly on pay-per-use is likely at the very least to prove a 'problematic' business model to manage successfully for an organisation with anything like the same mission as Nexxus has a present.

6.23 It is perhaps in this context that a number of consultees point to the group purchasing scheme offered by the One Nucleus network in England as a model to follow. We profile One Nucleus later in this section, but we see a number of key issues that would need to be addressed by Nexxus in its business planning:

- what resource would be required to develop and then deliver such a scheme?
- what kind of revenue might it attract from how many clients per annum?
- and on what basis – subscription or pay per use?
  - and crucially, if anything like the present 'mission' and added value associated with Nexxus is to be sustained, will this purchasing scheme generate enough surplus to fund the other things Nexxus wishes to do – or does the purchasing scheme become an end in its self?

What companies say

6.24 We now summarise feedback on demand issues from the business survey. The table below shows what survey respondents say they would be willing to pay Nexxus for in future. More would pay for events, but at a level that would arguably need many and/or large events to offer Nexxus the prospect of sustaining the organisation on this alone.

Table 6-2: Would you be willing to pay for the following in the future?

Service type	Number of respondents stating a willingness to pay	Mean approximate value	Median approximate value
Nexxus events services on a 'pay as you go' basis	66	£79	£55
Nexxus marketing services on a 'pay as you go' basis	22	£60	£50
Nexxus business development services on a 'pay as you go' basis	23	£67	£50

Source: SQW/IBP Nexxus Business Survey

6.25 We sought to determine if there is any sub-sectoral bias in willingness to pay. The results are shown below. Paying for events remains the most supported option across all sub-sectors. Broadly, 50% of those offering a response in each sub-sector would pay something for attending events. Apart from the actual numbers, this spread across the sub-sectors seems to confirm the pan-Life Sciences appeal of Nexxus.

Table 6-3: Would you be willing to pay for the following in the future? (Analysis by sector)

	Biotechnology (n=29)	Medical technology (n=22)	Pharma (n=13)	Contract Research Organisation (n=11)	Services (n=42)	Other (n=4)	Not answered (n=2)
Nexxus events services on a 'pay as you go' basis	15	12	8	6	22	2	1
Nexxus marketing services on a 'pay as you go' basis	5	3	4	2	8	-	-
Nexxus business development services on a 'pay as you go' basis	5	3	4	2	9	-	-
Don't know	13	8	5	5	20	2	1

Source: SQW/IBP Nexxus Business Survey

6.26 We thought it might also be interesting to test willingness to pay against 'familiarity' with Nexxus. Similar proportions are positive regardless of the date of their first involvement. Notably, even companies that have been associated with the network for three or more years still see what is delivered through the events programme as sufficiently valuable to consider paying, i.e. no real sense of 'networking fatigue'. This is an interesting contrast with one non-business stakeholder that suggested that one of the consequences of Nexxus' success was that he and his colleagues now felt well enough networked to do without Nexxus as a network facilitator. The persistence of company interest is also probably a reflection of Nexxus' ability to keep its events programme fresh and relevant.

Table 6-4: Would you be willing to pay for the following in the future? (Analysis by year which beneficiaries first started using Nexxus)

	2010/11 (n=16)	2009/10 (n=32)	2008/09 (n=38)	Before 2008/09 (n=37)
Nexxus events services on a 'pay as you go' basis	8	17	15	26
Nexxus marketing services on a 'pay as you go' basis	4	5	7	6
Nexxus business development services on a 'pay as you go' basis	5	5	7	6
Don't know	8	14	23	9

Source: SQW/IBP Nexxus Business Survey

6.27 Finally, on willingness to pay, we looked to see if there was any significant difference between firms located in the East and the West of Scotland. As the Table shows, that there is very little difference in terms of willingness to pay between business respondents in the two areas.

Table 6-5: Would you be willing to pay for the following in the future? (Analysis by East West split)

Service type	East - Number of respondents stating a willingness to pay	West - Number of respondents stating a willingness to pay
Nexxus events services on a 'pay as you go' basis	33	33
Nexxus marketing services on a 'pay as you go' basis	12	10
Nexxus business development services on a 'pay as you go' basis	13	10

Source: SQW/IBP Nexxus Business Survey

6.28 We also offered businesses the opportunity to comment on the value they see in a number of services that Nexxus might offer in the future. The responses are summarised in the Table below by sub-sector. International network access and EU project access are the most favoured. The group purchasing scheme receives a more mixed but generally lower proportion of positive responses. In this regard, it is notable that One Nucleus and OBN, the networks in England that offer group purchase schemes to their Life Science members, offer to undertake a cost-benefit analysis through a 'procurement audit' for individual companies in order to demonstrate the business value of participating in their schemes. Given the survey results, Nexxus may require to do some similar form of 'market development' when selling its proposition.

6.29 The interest in access to EU projects introduces again the positioning of the Nexxus offer relative to other initiatives, especially ones funded by the public sector. In this instance, we are aware that Enterprise Europe Scotland (EES), in partnership with Scotland Europa, provides a dedicated service to support all Scottish organisations in making the most of European Research and Development funding opportunities available in the EC's Seventh Framework

Programme (FP7)[55]. As part of its service, it also offers help in finding business and academic partners in Europe, and for the exchange of information on products, licensing a technology, manufacturing or joint ventures. If Nexxus is to provide a service to member companies without recourse to public sector support, then 'competing' with EES may not be of a concern to Nexxus and the beneficiaries: if seeking public sector support, any formal appraisal may well question how the two publicly supported services relate – different or duplicative?

Table 6-6: Nexxus is considering a number of potential new services. Which of the following would be of value to you? (Analysis by sector)

	Biotechnology (n=29)	Medical technology (n=22)	Pharma (n=13)	Contract Research Organisation (n=11)	Services (n=42)	Other (n=4)	Not answered (n=2)
Group Purchasing Scheme	11	9	4	4	6	1	1
International Network Access	24	17	9	10	33	3	1
Training & development	12	8	7	4	11	1	1
EU project access	24	17	6	6	20	2	1
Market access support	12	11	6	3	11	1	1
Other	-	-	-	-	-	-	-
Not answered	-	4	3	-	5	1	1

Source: SQW/IBP Nexxus Business Survey

What non-businesses say

6.30 The tables below record the responses on willingness to pay and valuation of different services from non-business respondents to the survey. The results indicate that the majority of non-business respondents would be willing to pay for attendance at events on a 'pay as you go' basis. In terms of potential new services provided by Nexxus, 'International Network Access' and 'EU Project Access' are most in demand.

[55] Available from: www.enterprise-europe-scotland.com/sct/services/EU_Funding.asp?ContentID=0119&BackTo=0&savemsg=&CustomMessage

Table 6-7: Would you be willing to pay for the following in the future (non businesses)?

	Number of respondents stating a willingness to pay (n= 123)	Mean approximate value	Median approximate value
Nexxus events services on a ‘pay as you go’ basis	31	£3,459	£60
Nexxus marketing services on a ‘pay as you go’ basis	9	£2,904	£50
Nexxus business development services on a ‘pay as you go’ basis	8	£3,378	£50

Source: SQW/IBP Nexxus Non-business Survey

Table 6-8: Nexxus is considering a number of potential new services, which of the following would be of value to you? (Analysis by year which beneficiaries first started using Nexxus)

	2010/11 (n=16)	2009/10 (n=22)	2008/09 (n=24)	Before 2008/09 (n=30)
Group Purchasing Scheme	4	5	3	6
International Network Access	11	16	19	21
Training & development	6	7	9	11
EU project access	9	11	17	20
Market access support	4	5	10	15
Not answered	4	2	-	5

Source: SQW/IBP Nexxus Non-business Survey

Table 6-9: Nexxus is considering a number of potential new services, which of the following would be of value to you? (Analysis by East West split)

	East (n=51)	West (n=41)
Group Purchasing Scheme	8	10
International Network Access	36	31
Training & development	14	19
EU project access	27	30
Market access support	16	18
Not answered	8	3

Source: SQW/IBP Nexxus Non-business Survey

Issues around market size

6.31 As a pan-Life Sciences network, the potential market for Nexxus, subject in detail to what it delivers, embraces all firms associated with the human Life Sciences in Scotland, the 'human' Life Sciences research-base in Scotland and those interested in research and innovation within NHS Scotland. The size of the population of firms in the sector in Scotland is reported by SE in various ways:

- 640 *organisations* in the Life Science cluster in Scotland
- 70% of these (i.e. c. 448) "focus on human healthcare products and services"
- c. 264 *organisations* in Scotland "engaged in developing human healthcare products and services".

6.32 We understand that at any time SE will account manage c. 240 companies. Nexxus' data indicate c. 186 companies as 'significant' participants, albeit still to varying degrees, in its network, with its so called 'top account' companies amounting to 20.

6.33 Although only operating formally in the Central Belt, Nexxus therefore already enjoys a fairly high level of penetration in the business segment of its addressable market. The issue therefore is more about developing value adding products and services to *sell on* to these company contacts. However, its market penetration would probably be assisted further by a direct presence in the notable Life Science hubs of Aberdeen and Dundee.

6.34 Another factor here is what might be regarded as the flip side of the pan-sector 'strength' of Nexxus, namely the challenge in designing products or services that add value to what firms (and indeed research providers and the NHS) can gain already from organisations that: (i) specialise on the needs of particular sub-sectors of the Life Sciences cluster, e.g. the Scottish Stem Cell Network; or (ii) focus on knowledge exchange initiatives that are operating out of the Scottish research-base and which also target businesses[56]. Does Nexxus seek to develop products/ services in the 'white space' between what these other providers offer or does it seek to partner with (potentially undertake paid work for) these other bodies active in the field based on its ability to bring businesses to the 'table'? In the light of comments that Nexxus is providing the 'glue' for the sector, we certainly think the latter should be explored.

6.35 The only other 'opportunity' to emerge in our consultations concerned the role that a body like Nexxus might play in facilitating the engagement of the NHS in Scotland and the business base in the context of what might one might term an 'open innovation' model. This would involve assisting innovative SMEs, e.g. in the medtech sector, locate, engage with and work on proto-typing and trials with clinicians in the NHS: there may be a facilitative/ 'marriage brokering' role to be played by an organisation well embedded within the business base if a suitable funding model can be found.

Cautionary comment

6.36 It is worthwhile adding one consultee's view that there is more to be considered here than 'numbers' of companies taking up Nexxus products/services. This individual argues that the success of the national Life Science strategy should not be linked so much to number of companies (number of start-ups) but to companies of scale grown in or attracted to Scotland (companies that are capable of growing to 100 FTEs or more; growing from £2-3m turnover to £30m turnover). This consultee estimates the current market size based on these criteria to be c. 50: "it should be possible to provide a tailored package of support for each one". Furthermore, the consultee argues that in this sector "jumps in growth are always driven by R&D" and the firms need mentoring support and access to 'brains'. For Nexxus, the challenge frankly is how to fund customised services for this size of addressable market if not through public sector support.

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[56] "The SULSA Knowledge Exchange Committee, which is made up of representatives from the research and commercialisation offices of each of the participating SULSA institutions, is working to help SULSA developing productive collaborative links with the biotech and pharmaceutical sectors. The Committee is also identifying new knowledge exchange opportunities generated by SULSA and sources of funding to develop those opportunities.": see http://www.sulsa.ac.uk/KE

7: Learning for development

7.1 This section sets-out learning for future development by presenting case studies of selected Nexxus beneficiaries and profiling a Life Science network.

Case studies

7.2 Table 7-1 provides a summary of interviews we conducted with Nexxus beneficiaries to get greater insight into the role that Nexxus plays for them.

Table 7-1: Summary of case studies

PROFILE	BENEFITS OF NEXXUS	OVERALL ASSESSMENT/ FUTURE DEVELOPMENT OF NEXXUS
1. QUOTIENT CLINICAL Contract Research Organisation Large corporate Undertake clinical research Located in East of Scotland since 2009 Not SE Account Managed http://www.quotientbioresearch.com/clinical	First started using services in 2009/10 Cross-section of services used from 'events', 'marketing' and 'business development' Most useful services are considered to be the networking events and 'special interest groups' Through Nexxus, new links with companies created; introduced to other companies on research projects. One of these projects related to drug discovery and support **The Nexxus role is about creating linkages which otherwise would have been difficult** Established new links with the science/ research base; new links with NHS; improved existing products/ processes; developed new links; improved market and technical awareness; improving awareness of social networking **Now have know-how to tap into the R&D side of the NHS** (QC provide phase 1 facilities for clinical trials) **For young researchers within Life Sciences, it can be difficult to network. Nexxus fills this gap** **The Nexxus story is about how businesses can be more connected with academics/ science base**. The initial approach is normally the difficult part, that is where Nexxus plays a role – making the connection	**Nexxus is considered to be very easy to access** and is the most visible compared to other initiatives in Scotland **Nexxus differentiates itself from other interventions by being more visible** Nexxus is viewed as pan-Scotland Would pay for future Nexxus services Through the Nexxus special interest group sessions, there needs to be **more in-depth presentation/ discussion on the subject of clinical trials** **Raise awareness of grants** available to companies to support them in undertaking clinical trials. Continue to create awareness of new grant funding

PROFILE	BENEFITS OF NEXXUS	OVERALL ASSESSMENT/ FUTURE DEVELOPMENT OF NEXXUS
	Networking approach and dissemination of knowledge is considered important	
2. XEROSHIELD Biotechnology SME Sell or license technological ideas relating to insect control Located in East of Scotland since 2005 SE Account Managed http://www.xeroshield.co.uk/	First started using services in 2008/09 'Low' to 'medium' usage of Nexxus services – mainly 'events' and 'marketing' services. Also used 'introductions and connection' services (business development) **The service of individual members of the Nexxus Team is rated highly** **The importance of Nexxus is that it generates awareness – identifies what is available**	**Support for infrastructure** would be of use to this company i.e. help with accessing grants for office space
3. TISSUE SOLUTIONS Medical Technology SME Bio-bank for tissue samples Located in the West of Scotland since 2007 SE Account Managed http://www.tissue-solutions.com/	This company has made extensive use of Nexxus services – mainly 'events' and 'marketing' but only limited use of business development services An example of how Nexxus has played the networking role is as follows: the consultee gave a talk at a translational medicine event through Nexxus. At this session a lawyer approached the consultee informing her of another company that might be of interest to her to do business with. This was a company that the consultee had tried to access before, but without success. The contact made with the lawyer "opened doors" to a potential new customer. **Nexxus' role in this process was in providing the opportunity to profile her company and knowledge which was then in this case picked up** by an attendee and which led to business Nexxus has provided direct introductions to new companies. The Nexxus Director also organised a group of companies to attend a conference. This helped to **increase the profile of Tissue Solutions** **Networking issues – meeting different people at Nexxus events is extremely valuable. The Nexxus 'speed-dating' works well as you can meet numerous people at the same event**	Very satisfied with Nexxus services **The "USP" of Nexxus is that the Team gets to know the company.** The Nexxus personnel do not change, so there is continuity **Nexxus complement many other forms of support available in Scotland e.g. SDI** A key area of development would be to increase capability to **provide networking support outside of Scotland**
4. SCOTTISH DEVELOPMENT INTERNATIONAL Government/ Public Sector	***What role/ value does Nexxus play in profile raising and opening opportunities internationally for Scottish companies?***	**The value from an international perspective is in developing the initiative to cover the whole of Scotland – bringing academics and business under one 'umbrella'** where people from the outside

PROFILE	BENEFITS OF NEXXUS	OVERALL ASSESSMENT/ FUTURE DEVELOPMENT OF NEXXUS
http://www.scottishdevelopmentinternational.com/	With SDI we explored the above theme to better understand the international dimension relating to Nexxus We interviewed SDI's Senior Development Executive based in California, USA The following points were highlighted: **Nexxus is considered to be doing an "excellent job"**. The **Quarterly Newsletter is thought to be "extremely useful" as it provides a "fresh picture" of the Life Science community** (nationally and internationally) of what is happening in Scotland **Nexxus has helped connect companies to SDI and there are plans for a North American visit by Scottish companies. The Nexxus Director has already been to the US to learn of international networks e.g. "BayBio" (http://www.baybio.org/) and "BioCom" (http://www.biocom.org/)** The **article on BayBio in the Nexxus Newsletter** was very useful for raising the profile of Nexxus and Scotland's Life Science capabilities in the USA. The President of BayBio gave a presentation at a Nexxus event which was well received by businesses and other organisations **Nexxus facilitates the process of connecting to these and other networks by for example helping to organise Scottish Trade Missions** at international network events **Currently, SDI and Nexxus are trying to facilitate connections between US based venture capitalists and Scottish Life Science companies** (see also Section 3). This is starting to shape this year. The aim is to get Scottish firms to pitch to US based VCs for investment **Nexxus do not play the SDI role but help profile the Life Science landscape which is very useful to SDI** **The benefit of Nexxus is that it covers the whole spectrum of Life Sciences** rather than specialised in any one sub-sector (e.g. Scottish Stem Cell Network) **Overall, Nexxus plays a very important role in profile raising and opening opportunities internationally for**	e.g. US based VCs and Life Science companies can access the expertise and capabilities available in Scotland At the moment Nexxus could be perceived as "fragmented" in its coverage – it mainly a West of Scotland initiative, although in recent years this has been addressed by expansion to the East of Scotland Further support needs to be provided to **Nexxus Director to travel at international key events**. This would add value in creating international links **There is some uncertainty over how joined up Nexxus is with large corporates**. Developing this area would be beneficial. Having some from a large corporate on the Nexxus Board would bring another perspective **Having someone from outside of Scotland on the Nexxus Board is worth considering. At the moment "everyone is breathing the same air in Scotland"** **The model for Nexxus is to be a bit more like BayBio or BioCom** It is stressed by the consultee that **it would be "very disappointing if Nexxus was no longer a major tool"** for SDI to use in accessing the Life Science community.

PROFILE	BENEFITS OF NEXXUS	OVERALL ASSESSMENT/ FUTURE DEVELOPMENT OF NEXXUS
	Scottish firms	
5. SCOTTISH UNIVERSITIES LIFE SCIENCES ALLIANCE (SULSA) Research pooling partnership between the Universities of Aberdeen, Dundee, Edinburgh, Glasgow, St Andrews and Strathclyde Supported by the Scottish Funding Council http://www.sulsa.ac.uk/	The key use of Nexxus for SULSA has been their events Nexxus is a way of **"bridging the gap" between the universities' focus on collaboration between researchers and collaborating with the private sector**. Nexxus is seen as an important route for increased interaction between academics and companies. This is both through Nexxus' own events but also by getting companies involved with SULSA events. For example, Nexxus was involved in trying to recruit companies to present their technologies at SULSA events. **Without Nexxus, it would be harder to know how to attract private sector to present at events**.	One major improvement to the events offered by Nexxus which was suggested would be to circulate provisional attendee lists before events. This would enable SULSA to try to ensure that the academics were matched to, and were encouraged to attend, events which were being attended by private sector individuals with similar backgrounds/interests etc.

Source: SQW

Profile of a Life Science network

7.3 Given its high profile in the feedback received from stakeholder consultees, we provide a short profile of One Nucleus. We then refer to other networking bodies operating group purchasing schemes in the UK. We are aware of ongoing work within SE into networks and Life Science 'hubs' that may provide additional useful information.

7.4 One Nucleus is a membership organisation for international Life Science and healthcare companies. It operates in the Cambridge and London areas. The vision For One Nucleus and its members is to be the top European Life Science and healthcare network. It aims to achieve this by maximising the global competitiveness of its members. Established in 1997, and formerly known as ERBI before merging recently with a London focused Life Science network. One Nucleus is a not-for-profit organisation. It claims more than 500 members including pharmaceutical, biotech, medical device and diagnostic companies and associated technical and commercial service providers.

7.5 Membership categories and fees include:

Table 7-2: Membership categories and fees – One Nucleus

Membership level	Company size	Silver Membership	Gold Membership
Individual academics	N/A	£150+VAT	N/A
Start up company – available for the first year to start up companies only	<10 employees	£220+VAT	£900+VAT
Small company	<20 employees	£305+VAT	£1390+VAT
Large company	21-50 employees	£400+VAT	£2350+VAT
Extra large company	51-150 employees	£500+VAT	£3500+VAT

Source: [*http://www.onenucleus.com/*](http://www.onenucleus.com/)

7.6 Membership and pay-as-you -go services include:

Table 7-3: Membership benefits – One Nucleus

Benefit	Non-Member	Silver Member	Gold Member
Profile in One Nucleus member directory	X	✓	✓
Post news on the One Nucleus website	X	✓	✓
Post events on the One Nucleus website	X	✓	✓
Post jobs on the One Nucleus website	X	✓	✓
Cambridge Network Meetings	£150 + VAT per delegate	3 free delegate £40 + VAT additional	3 free delegates £40 + VAT additional
London Biowednesday Meetings	£150 + VAT per delegate	3 free delegate £40 + VAT additional	3 free delegates £40 + VAT additional
Life Science Leadership Series	£420 + VAT	£295+ VAT	£175+ VAT
Genesis Conference	List price	Discount	Discount
Bench-to-Boardroom Networking Exhibition	List price	Discount	Discount
One Nucleus Training	List price	Partial discount	Full discount plus priority booking
Discounts under Support Supply Agreements (SSAs)	X	✓	✓

Benefit	Non-Member	Silver Member	Gold Member
Discounts under Preferred Supply Agreements	X	X	✓
Participation in Special Interest Groups	X	X	✓

Source: http://www.onenucleus.com/

7.7 The One Nucleus web site provides the following description of its group purchasing scheme. It has 'Support Supply Agreements' (SSAs) in place with c. 40 diverse suppliers (from travel agents, car rental companies, insurers, copier suppliers): these are available to all members. These do not follow full tendering processes but if sufficient interest is generated by an SSA, then the contract will be considered for upgrading to a Preferred Supplier Agreement (PSA) status (following a full tendering process).

7.8 Gold Members have exclusive access to the PSAs which are tendered agreements for various key supplies. One Nucleus offers to undertake a cost-benefit analysis for its PSA scheme for Silver members thinking of upgrading or companies wishing to join as Gold members.

7.9 There are other comparable bodies involved in group purchasing initiatives in the Life Science sector e.g. :

- **OBN**[57] is "a not-for-profit business network which provides comprehensive support for biotech and medtech companies in the Oxford and South-East England biocluster and beyond. …activities can be summarised as networking, partnering and group purchasing. Through its delivery of Europe's fastest growing biopartnering and investment conference, BioTrinity, OBN generates more R&D-company-to-investor interactions than anyone else in Europe. OBN is sponsored by Shire, as its first Corporate Patron, and Corporate Sponsors MEPC, Manches, PiR Interims, SRG, Red Moon Executive Search, James Cowper, Focus, Citigate Dewe Rogerson as well as by its extensive membership of R&D companies and other companies across the entire Life Sciences industry."
  - on its purchasing scheme it claims: "The OBN Purchasing Scheme has saved members over £1m since it was set up in 2008 and it delivers significant cost savings for Full Member companies and has generally saved their membership costs several times over. In some cases member companies are saving tens of thousands of pounds on their laboratory spend alone. As part of the benefits of becoming a Full Member, (OBN) offers a free purchasing consultancy service to our members. .. (it) covers the whole of the UK".
- **BioNow**[58] takes a different approach to providing discounted purchasing opportunities for members of its network: it provides a list of suppliers on its web site which have agreed to offer Bionow Members a discount or incentive related to their products or services. However, the members are invited to contact the company directly using the details provided, stating the wish to take advantage of the Bionow Member Scheme.

[57] http://www.obn.org.uk/obn_/menu.php?p=index.html
[58] http://www.bionow.co.uk/

Membership is available free to all companies based in the North West operating in or supplying to the fields of biotechnology, pharmaceuticals, diagnostics, CRO, CMO, analytics, medical devices & healthcare, at least to date. BioNow also operates a chargeable group purchasing scheme. However, BioNow presently enjoys public sector support from an English Regional Development Agency which will not be sustainable in the medium term.

Lessons

7.10 We identify the following main lessons that can be considered as 'transferable learning':

- it is important to differentiate an intervention carefully in order to make it "visible" in what can be a 'crowded' landscape especially if looking for public sector support
  - ensuring complementarity of services with other forms of public sector support is relevant in developing the Life Sciences sector but clearly of wider relevance
  - the work being done by Scotland Food & Drink to bring greater to coherence to a fragmented sector is notable in this regard
- networks need to have an international outlook, not just domestic for the benefit of members and any public sector stakeholders
  - this is of importance in the Life Sciences in which knowledge exchange, innovation and sales all occur in an international market but also for other sectors that have a similar international dimension to the markets in which domestic 'actors' must succeed
- the membership, funding and governance of a networking organisation benefits from having a strong emphasis on 'triple helix' (public sector, industry and research base)
  - this is of relevance especially to all sectors that are science/ technology-based and research intensive.

8: Conclusions and recommendations

Conclusions

8.1 The following are our main conclusions based on a review of the research evidence gathered during the course of this evaluation.

Strategic rationale and fit

- the nature and focus of existing Nexxus' activities continue to 'fit' well with the current SE response to Government policy. Nexxus continues to 'fit' well with and contribute directly to the objectives of key Scottish Government and SE strategies
- there are diverse views among stakeholders on market adjustment, ranging from: "market failure is the same, not changed over time" to "market adjustment has occurred due to the pro-active 'match-making exercise' of Nexxus"
- the feedback from stakeholders is that whatever market adjustments have taken place since the formation of Nexxus there remain some intrinsic market failure issues that continue to require the support of a networking/facilitating function if they are to be addressed
  - for instance information asymmetry and imperfect information - at the interface between the constituencies that Nexxus seeks to serve viz. industry, the research-base and the NHS.

Performance assessment

- overall finding on 'SMARTness' of objectives based on a literal interpretation of each objective statement is that:
  - the community building and opening opportunities objectives are partially specific whilst the profile raising objective is less so
  - community building is measurable, albeit in limited terms, but profile raising and opening opportunities are less so
  - it is difficult to establish if the profile raising and opening opportunities objectives were achievable but the community building objective can be considered achievable, albeit over time
  - objectives were relevant; in the context of policy and the LS sector strategy, and

- all three objectives are time-bound as stated

- the cash-flow for the project has been managed well, bearing in mind the timescale left to the end of the project
- it is generally a well regarded initiative in terms of outputs and staff/ management capabilities and delivery
- there is a transparent monitoring and reporting system which is fit-for-purpose. Most activities and outputs are tracked, recorded, verified and measured against targets. We highlight the use of a web-based CRM system which allows the CRM user to access, input and review information/ data as a valuable and innovative tool
- the project performance against the targets set for the project by ERDF and SEEKIT funders has been mixed. For targets relating to events the performance has been particularly strong. It is notable that the targets set by the funders are a mix of what we would regard as 'outputs' and others that are desirable 'outcomes', the latter clearly not in the gift of Nexxus
- we claim no statistical rigour for our assessment of progressive development from 'audience' to 'community' but the indications are that Nexxus has been successful in developing a LS network and that a LS community (a sense of group identity) may indeed be emerging. It is less clear what is feasible for Nexxus to achieve in building a LS 'community' as distinct from a 'network' across Scotland under current circumstances: this will not only take leadership by key stakeholders but also time and resource
- the vast majority of respondents find it difficult to see how Nexxus contributes to the equity and equalities agendas pursued by SE.

Project benefits and impact

- more than half of businesses surveyed reported that Nexxus has led to improved market awareness (60%) and allowed them to establish new links with companies (58%). In ranking, this was followed by the establishment of new links with the science/research base (41%) and improved technical awareness (41%). A high proportion of non-businesses reported similar benefits
- for the **sample** of companies which reported that Nexxus had made a positive difference to their turnover, the net GVA impact to date (2008/09 to 2010/11) including multipliers is estimated at **£2.11 million** (including one company that reports considerably greater impact, i.e. is an outlier in the data) **and £0.25 million** (excluding this outlier). The **future net GVA impact** (2011/12 to 2015/16) including multipliers across those companies totals **£6.84 million**
- across the **population** of 186 companies which have used Nexxus services, it is estimated that the net GVA impact **to date** (2008/09 to 2010/11) including multipliers is **£2.57 million** and the **future net GVA impact (2011/12 to 2015/16) is estimated to be £13.86 million**. This gives a

total net GVA impact of £16.41 million over the period 2008/09 to 2015/16. It is important to emphasis that the figures are calculated based on a number of assumptions that we have specified. The more robust turnover and GVA impacts remain those based on survey responses

- estimated employment impacts for the **sample is 114 job years across the whole period of the evaluation (2008/09 to 2015/16)** and across the whole population, the employment impact is estimated to **total 286 job years**. It should be noted that the majority of these employment impacts are anticipated benefits rather than jobs which have actually been created to date
- in terms of **cost effectiveness**, we calculate the impact of the project for the **population of 186 companies** as shown below. These economic impact ratios should be treated with caution because of the assumptions included the extrapolation process. We consider our analysis to err on the conservative side.

Table 8-1: Economic impact analysis

	Sample		Population	
	Impact to date (08/09 to 010/11)	**Total impact (08/09 to 15/16)**	**Impact to date (08/09 to 10/11)**	**Total impact (08/09 to 15/16)**
Present value of costs	£1.28m	£1.28m	£1.28m	£1.28m
Present value GVA benefits	£2.11m	£8.95m	£2.57m	£16.41m
Net Present Value	**£0.84m**	**£7.67m**	**£1.29m**	**£15.13m**
Net Present Value (SE contribution)	£0.11m	£1.00m	£0.17m	£1.97m
Economic impact ratio (benefit cost ratio)	**1.65**	**7.00**	**2.01**	**12.83**

Source: SQW

Usage, quality and demand

- the project's weakness is perceived to be its restricted reach i.e. Central Belt only, but this cannot be a criticism of the conduct of the intervention
- the project is regarded as innovative in refreshing its services portfolio over time, however there is some sense of spreading itself too thinly – and needing to re-assess what is the 'core' business
- there is good level although far from unanimous support of new candidate services; introduction of a group purchasing scheme will require market development to convince prospective clients

- we found good level of positive responses on willingness to pay but the sums involved per unit of purchase are relatively small.

Learning for development

- it is important to differentiate an intervention carefully in order to make it "visible" in what can be a 'crowded' landscape especially if looking for public sector support
  - ensuring complementarity of services with other forms of public sector support is relevant in developing the Life Sciences sector but clearly of wider relevance
- networks need to have an international outlook, not just domestic for the benefit of members and any public sector stakeholders
  - this is of importance in the Life Sciences in which knowledge exchange, innovation and sales all occur in an international market but also for other sectors that have a similar international dimension to the markets in which domestic 'actors' must succeed
- the membership, funding and governance of a networking organisation benefits from having a strong emphasis on 'triple helix' (public sector, industry and research base)
  - this is of relevance especially to all sectors that are science/technology-based and research intensive.

Recommendations

8.2 The recommendations below address the following issues:

- appropriateness of continuation of public sector funding
- developments/modifications for Nexxus' operation in future
- relevant market segments for the future
- positioning with respect to other initiatives in Scotland.

8.3 The networking function provided by Nexxus to facilitate achieving what one consultee referred to as 'right people, right content, right time' remains relevant – both at a policy/ strategic level for the sector and for the organisations (businesses and others) that participate in the networking activities. The presence of similar networking bodies, many longstanding, in most areas with a strong Life Science cluster confirms the relevance of this element of 'soft' sector infrastructure. Therefore, we recommend that a Nexxus-type networking function be sustained.

8.4 Notwithstanding pointers to market adjustment and indications of a willingness to pay amongst some businesses, there is in our view continuing market failures to be addressed, failures which are encountered by SMEs in many sectors, including for example in their engagement in innovation, in accessing university expertise and in engaging large, complex organisations (in this context, the NHS). Therefore, we advise that a market failure rationale for continuing public sector support can still be sustained.

8.5 Importantly however, we recommend that the scale and use of any public sector finance is changed. Whilst we see justification for supporting a 'core' of information provision, awareness raising and pro-active community building activities, we caution against the proliferation of initiatives without careful examination of synergies and complementarities with other things already supported by the public sector. When defining the core it is notable, however, that networking bodies serving Life Science clusters elsewhere do tend to operate a diverse range of services.

8.6 Our recommendations are as follows:

- *define the 'core'*: Nexxus should define its 'core' business around the networking function as indicated above and seek funding from the public sector (an enabling, more modest core grant) for this perhaps under some form of service level agreement. (However, in this context it would be relevant to ensure its stakeholders in industry and the research-base are fully aware of the diversity of roles and activities undertaken by peer networks internationally.)
    - this could include 'community development' activities in other parts of Scotland (i.e. expanding the domestic market) thus building on Nexxus' success in rolling out its activities to the East of Scotland. Nexxus may require seedcorn funding to establish activities in new areas for a short time before any charging is introduced. However, we caution against 'force fitting' Nexxus on other areas where effective local networks may be in place: the value of a single national networking organisation needs to be 'sold' to those who already value their own networking facilities. (A development of brand hierarchies and the subsidiarity principle may be relevant here)
- *charging for events*: Nexxus should continue to convene a programme of 'events' informed by the needs and interests of its members – and it should charge for these at a price tested with its market
    - we have encountered no strong support for a membership subscription for anything like the portfolio of what Nexxus delivers at present
    - a pay-per-use approach does receive more favourable feedback albeit the evidence base is small: we suggest that wholesale reliance on pay per use would be a 'problematic' business model for Nexxus to adopt with anything like its current mission. It may be made more viable as a business model if it is on top of annual membership subscriptions and/or a core grant from the public sector

- especially in the current economic climate, it is important that if businesses do value Nexxus in its present or an altered form that they demonstrate this by making a financial contribution

- *business support services*: we recommend that Nexxus continues to design its portfolio of services in discussion with SE and Business Gateway, in order to ensure the continuing complementarity of support and cross referral of companies
  - arguably, these kinds of activity take Nexxus into the 'market' already occupied by business support providers, including providers supported by the public sector
  - we consider it unlikely that the public sector would support another provider unless in the context of a more radical rationalisation
  - however, we see no reason why Nexxus should not operate in this market if it receives the support (and can win the revenue) from its client base to do so. However, the presence of public sector SME support schemes exist because of market failures which Nexxus would need to overcome to succeed in financial terms. Nexxus' ability to engage with businesses may make it a valuable partner to existing public sector schemes wishing to enhance their market penetration in the Life Science sector

- *international activities*: we recommend that any proposal for international activities need to take account of what is already in place with funding from the public sector and to ascertain if the Life Science cluster in Scotland is being well served by the existing service providers
  - there is a good level of support amongst businesses and others in the survey for Nexxus' international networking activities and for the provision of support to access contacts and finance, including in Europe. In addition to differentiating itself from other public sector funded organisations that do at least some of this (notably towards the European Union), it is difficult to be certain what *companies* would pay Nexxus for here. We recommend that any proposal for international activities need to take account of what is already in place with funding from the public sector and to ascertain if the Life Science cluster in Scotland is being well served by the existing service providers
  - as with its existing relationship with Interface, Nexxus could serve as the key link to the Life Sciences community to make non-sector specific initiatives work more effectively for this key sector – subject to public sector funding being made available to it

- *group purchasing:* the group purchasing scheme along the lines of that operated by One Nucleus received lukewarm support from firms surveyed during this evaluation – we recommend that a firmer financial proposition needs to be tested with potential clients before it can be regarded as a strong revenue stream. As we indicate elsewhere, organisations offering such schemes tend also to offer a service to firms which permit them to calculate the cost savings that each might achieve from participation

- *avoid lobbying*: in agreement with the view of many consultees, we recommend that Nexxus avoid a lobbying role (at least on legislative issues) on behalf of the sector. However, we are not convinced that the presence of Nexxus and a 'conventional' trade association with a strong industry membership cannot co-exist, hopefully performing different but complementary functions. Of course, if public sector support is absent from both, it could be left to the market to decide which one to support, albeit potentially to the detriment of knowledge exchange and innovation in the sector

- *future Steering Group structures*: we recommend that further consideration be given to: consolidating the two Steering Groups into one; ensuring regular refreshing especially of industry members, and considering the participation of someone from outside of Scotland. Of course if Nexxus moves to an incorporated legal entity (see below) then the company board will wish to review additional steering/ advisory functions

- *status:* we recommend that Nexxus' status needs to change from a 'project' to some form of legal entity. A Company Limited by Guarantee would seem an appropriate form if it is to remain 'mission-driven' and not wholly commercial. This is to enable Nexxus to take forward new initiatives, including ones funded by the 'market'

- *connecting with the business base:* we recommend that Nexxus develops partnerships with those leading the major academic and NHS Life Science initiatives in Scotland who have an interest in engaging with the Scottish Life Science business base – the role of Nexxus would be to facilitate appropriate and effective connections with the business base. This is based on the fact that the most valuable asset held by Nexxus in addition to the credentials of its staff is arguably its current relations with businesses

    - we envisage that its networking activities would generate 'leads' of interest to these partners and to businesses (i.e. help in market making) but leave others to following up on specific 'prospects' for collaboration

- *Nexxus name:* we found no strong support for or against retaining the Nexxus name. We recommend that Nexxus and its supporters maintain some flexibility here to reposition the organisation and how it is known to meet strategic interests.

Annex A: List of consultees

Table A-1 List of individuals interviewed who are part of the West and/ or East Steering Group

Name	Position	Organisation	West or East Steering Group
Professor Chris Packard	R&D Director	NHS Greater Glasgow and Clyde	Chair of West SG
John Bremner	Business Development Manager	Link Technologies	West SG
Alastair Muir	Chair, Scotland	Visatge International	West SG
John Walker	Senior Research Scientist	Schering Plough	West SG
Dr Kevin Cullen	Research and Enterprise Director	University of Glasgow	West SG
Fiona Godsman	Founder	Keldos	Vice Chair of West SG and member of East SG
Jennifer Shipston	Manager, Business Development Europe	Charles River Laboratories	Vice Chair of East SG
Graeme Boyle	Director	Nexxus	

Source: SQW; Note: Dr Till Bachmann, University of Edinburgh and Chair of East Steering Group provided input via the non-business telephone survey.

Table A-2 : List of other individuals interviewed

Name	Position	Organisation
Rhona Alison	Director of Life Sciences	Scottish Enterprise
Alison Bennett	Project Manager, Sector Delivery	Scottish Enterprise
Alan Wise	(former) Senior Executive Life Sciences	Scottish Enterprise
Mike Huston	Account Team Leader	Scottish Enterprise
John Brown	Head of Life Sciences	Scottish Government
Malcolm Bateman	CEO	Roslin BioCentre

Source: SQW

Table A-3: List of individuals interviewed as part of case study		
Name	**Position**	**Organisation**
Kate Rowley	Business Development Director	Quotient Clinical
Bruce Alexander	Managing Director	Xeroshield
Morag Macfarlane	Chief Scientific Officer	Tissue Solutions
Larry Reynolds	Senior Development Executive	Scottish Development International
Denise Barrault	Executive Director	Scottish Universities Life Science Association

Source: SQW