Theme: P Strand; 4 Universities as Interactive Partners; Evaluating Implications

Title: Pragmatic Impact Metrics

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Introduction

Despised yet necessary, loved and hated, difficult and easy; Impact is all of these things.

When we need to justify expenditure, Impact feels like an easy option, yet when we need to demonstrate the value of our efforts, it becomes difficult. When there is a need to demonstrate an investment case, future Impact appears obvious, but when we need to measure it, it slips through our fingers. When we need to secure support, funders require Impact, yet when we must report it, we shy from it.

The economic downturn has emphasised the need for sustainable economic growth around innovation and Government policies. Impact provides a way of demonstrating the social, financial and environmental return on the initial activities undertaken. So we must all embrace impact and do so now. But existing methods work poorly because embracing Impact to our collective advantage requires a different way of thinking. We all lack a common framework to make use of impact; we cannot easily talk about it, identify it, report it, or measure it.

But hope now arrives - here we synthesise four simple ideas, Impact Journey, Audience[i], Metricated Case Studies and Value Scorcards[ii], to create just that *essential common structure*. Blending together frameworks and output methodologies already developed and used by Brunel University and NPL with an existing toolkit from Vertigo Ventures[iii,iv] - we give you a pragmatic, realistic, and simple method to identify, report, and measure impact, together with two output examples of practical impact reporting: Pragmatic Impact Metrics helps us all.

State-of-the-Art: The What, Why and Difficulties of Impact

Impact takes its time; it is rarely as expected. It does not easily reveal itself, it cannot be predicted, it is not certain. It is not easy; it is not simple, it changes over time, it needs recording. Impact does not happen quickly, but depends on others. Impact always arises, often confuses, and always surprises.

So *firstly* let's define what we mean by impact. The three strands of the Triple Helix of course use different terminology. In Industry impact is defined in terms of an *"organisation's sustainability - often defined as managing the triple bottom line - a process by which companies manage their financial, social and environmental risks, obligations and opportunities"*. These three impacts are sometimes referred to as profits, people and planet, where performance reporting comes through Corporate Responsibility and Annual Reports by the organisation. Academia favours the REF-approved definition[v,] *"an effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond Academia"*; for NPL it is *"users adopting their measurement knowledge and benefiting from it"*. For the UK Government impact [assessment] is *"a tool used by policy makers to assess and present the likely costs and benefits (monetised as far as possible) and the associated risks of a proposal that might have an impact on public, private or civil society organisations"*; and for the European Commission, impact [assessment] is *"a process aimed at structuring and supporting the development of policies"*.

But all these definitions revolve around two key ideas - some activity (project, investment, research) *making a difference*, and understanding & demonstrating the *benefits* of that difference in terms of financial, social and environmental performance. This paper uses these two simple, generic and common ideas.

Secondly, why do we need to embrace impact and why now? All the Triple Helix strands need to work together[vi] therefore we all need to use impact to support each other; companies struggle to grow & stay competitive, Governments search for innovation to increase growth, and universities must foster that innovation. In an increasingly networked society organisations require increased collaboration, specialist knowledge and performance to stay competitive. The economic recession has become a powerful tool for encouraging organisations and people to work together to achieve mutual benefits. The extent to which multiple organisations now work in "supply networks" has increased, meaning that existing methods of

understanding the effectiveness of the collaboration and the return that is being generated are not adequate when transferred from previously silo-like situations to these more complex stakeholder environments. Boundaries have blurred and different communities have developed different techniques to suit their individual requirements. The tensions that exist between shareholders' demands for return on capital[vii] and maximum value[viii] and the more recent stakeholder approach to corporate activity[ix] illustrate the need for a new method to understand and report performance. Triple Helix based innovation has a set of shareholders who, quite legitimately, require a profitable return from providing their resources and time, further emphasised by the economic conditions. Add in the concepts of Corporate Responsibility (CR)[x] to do public good and the acceptance of the need for organisations to contribute to the sustainability agenda means that new integrated approaches are required to satisfy the new paradigm. Simply put, understanding, identifying, measuring and reporting the social, financial and environmental impact is critical for our own organisations' survival and long term sustainability:

For **Companie**s - embracing impact makes a better business case for long term sustainability of the organisation; whether this is through using impact to become more competitive in the market, access emerging markets or from a brand and reputation perspective. For example, FTSE companies reporting on corporate responsibility outperform the FTSE 350 by up to 7%.[xi] Measuring the social, financial and environmental impact of embedded sustainability practices makes commercial sense.

For **Government** embracing impact will help justify investments & expenditure to tax payers, and measuring impact will enable a more accurate assessment of the performance of those investments and so guide decision making and future resource allocation. Otherwise a key opportunity may be missed as there is not an all-encompassing picture.

For **Academia** embracing non-academic impact is critical because from now on, achieving, demonstrating and evidencing it will determine at least 20% of future research funding through the current Research Excellence Framework.

In terms of 'why now', the current recession has everyone considering the effectiveness of every pound being spent. Realising the full potential of a project in terms of social, financial and environmental impact is essential. In addition, having a common framework and understanding will allow benchmarking, and thence better decision making and performance in the future. In the shorter term, those organisations

which embrace impact will fare better in the competition for investment, support, and funding; they will develop their own competitive strategies for survival and success. In the longer term, such competitive requirements should raise the standard of the activities of all.

And *thirdly*, why don't we all do it already? In the UK, the Social Value Act 2012 requires public authorities to have regard to economic, social and environmental well-being in connection with public services contracts and for connected purposes[xii] but it is only just catching on. Few university research projects report impact and only around13% of companies listed on the world's stock exchanges provided Corporate Responsibility reports in 2011[xiii]. Because it requires a different way of thinking, Industry, Academia and Government have differing needs and existing methods have many problems. In short, impact is difficult. There are many reasons for this difficulty, here are some:

- Definition Confusion - *Impact, output, outcomes, indicators or measures?*
- Commonality - *There is no widespread agreed language to use to discuss impact.*
- Value - *Different impact types are valued differently by different groups.*
- Change Over Time - *The nature of impact is not fixed, but changes over time.*
- Time Lags - *Impact can take a long time to show and so needs to be tracked.*
- Diffusion - *Impact becomes more diffuse over time.*
- Dependencies - *Other activities, outside of the project, are required to make an impact.*
- Attribution - *Connecting a specific project to specific impacts is not easy.*
- Additionality - *What might have happened anyway if the activity did not happen?*
- Disentanglement - *The impact of a specific project as opposed to existing expertise.*
- Exogenous Factors - *Even the best project may make no impact for external reasons.*
- Opportunity Cost - *How can the cost of considering impact justify the benefit.*
- Non-positive impacts - *Unwanted impacts can occur but are rarely acknowledged.*
- Unintended Consequences - *Impacts may not turn out as planned and can even present risks.*

The difficulty is also illustrated by the number and range of proposed methods for reporting impact in the literature[xiv]. The increase in collaborative activity gives rise to the need for a single, universally accepted best practice of benefit to all - but there are none. Many methods and proposals have been published, including Contingent Valuation/Stated preference, Case study/Narrative, Benchmarking, Self reporting, Expert appraisal/Peer review, Econometric models, Willingness to pay, Instinct/gut feel, and Citations/Bibliometrics. But none are both practical and universal, most take significant effort and/or expertise, and none are useable by all three strands of the Triple Helix.

Methodology: How to Embrace Impact, Practically, Simply, and Commonly

Central to Pragmatic Impact Metrics are the ideas of an Impact Journey - of travelling from an initial idea or objective to final benefits, of Audience - those to whom the impact story is to be told, and of Value Scorecards and Metricated Case Studies as complementary tools to tell the story. These ideas are certainly not new; Journey is present in various forms of evaluation (although rarely described as such), and in many systems or ideas relating to change implementation; Audience is a key concept in marketing, and Case Studies and Value Scorecards are already in use. Together they provide a credible and concrete basis from which to synthesize a common framework for Government, Industry and Academia.

Impact as a Journey The essential idea is a journey, a progression, from a project, investment or research idea, (the Input), via an Activity (the project, investment or research), through Dissemination and Translation, Usage and eventually Impact. The Impact Journey framework is not how projects and impact actually occur - Impact Journeys are never linear - they are both full of loops, revisions, dead ends and iterations. But a linear, narrative, journey framework helps to identify, describe, illustrate, and demonstrate impact. The stages of the Impact Journey are not hard and fast - they will merge and overlap rather than being distinct and will to some extent depend on the nature of the project. And like all journeys, the traveler can have a purpose or destination in mind or simply travel hopefully.

The key issue is what changes (and is therefore measurable) at each stage. For example in Academia, as shown in Table 1, the research journey starts with Inputs - ideas, hypotheses, theories, problems to be solved, simple curiosity; there is a *change in ideas*. At some point (usually when there is funding) Activities commence - research, discovery, testing etc. Something is learnt; there is a *change in knowledge*. Usually this new knowledge is then shared in Outputs - disseminated, published, presented etc. and so there is a *change in the distribution of the knowledge*. In a previous world this may have been sufficient, the end of the academic role, but it is no longer the case. For that research to make an impact (in any sphere), another party has to Translate this knowledge into their own relevant context, whether this is academic, technical, Government, business, or social; there is a *change in understanding*. But this is still not sufficient for impact to happen - there also needs to be a *change in behaviour* - someone has to do something different; the new understanding needs to be used to make a difference by generating a positive benefit or effect (often referred to as an outcome or General Impact). In practice, there is usually a whole chain (or even parallel sets of chains) of 'someone else's' doing 'something different' before the final impact arises. Impact is a *change in condition*. There is then Specific Impact - a *change in specific*

condition for a specific stakeholder group. Reporting that, say, 'diabetic children can now do something they could not previously', makes a better case than simply saying that' diabetic health has improved'; specificity gives impact 'bite'.

Table 1: The Research Impact Journey

	Inputs	Activities	Outputs	Translation	Usage	General Impact	Specific Impact
Concept	Ideas Theories Hypotheses Problems Issues	Discovery Understanding	Engagement with others, especially users, communication	Translation Awareness Brokerage Mediation Implication Influence	Utilization Implementation Execution Mobilisation Agency Capacity Application	More good things Fewer bad things New options	Specific benefits accruing to specific groups (stakeholders)
Change	Ideas	Knowledge	Knowledge distribution	Understanding	Behaviour	Condition	Specific in condition
Story Line	Our interest /the problem was... and we had the expertise in…	So we researched …. in order to …	Through the use of … we ensured the right people know about our results	Through dialogue with.... implications became clear in different contexts	Our research was used/adopted /adapted /applied/trialled /tested by…	The general benefit was...	The specific benefits was …. and accrued to….

The stages of the Impact Journey are necessary, but not sufficient, for impact to occur; changes in capability and capacity (for example the absorptive capacity of an organisation, the ability of people to change behaviour) are also necessary. The Impact Journey provides a framework in which to develop a narrative, the impact story, to consider, demonstrate and report impact; it enables the identification of these different parameters and the clarification of what is appropriate. The use of the Impact Journey framework mitigates the difficulties of time lag, change over time, diffusion, dependencies, and additionality - by specifically incorporating change during the journey. The key benefit of a simple underlying model is that it can offers a universal way in which to explore and report impact across the Triple Helix strands. The Impact Journey also provides a classic story line, need-journey-solution that enables good communication to those beyond the project.

The Impact Journey also starts to develop a common glossary of terms, relevant to Government, Industry and Academia. *Outputs* are all actions - the Activities, Translation, Usage sections in the Impact Journey are all a form of output; (general) Impact is often referred to as the *Outcome* - the positive benefit or effect and Specific Impact relates to the impact indicators which are used to evidence and demonstrate the

impact that has been achieved for a specific group of beneficiaries. Data are added to the indicators for reporting purposes. Essentially *Outputs* are the results of activities that are undertaken during a project or by an organisation after some kind of resources are provided (*Inputs*) and we use measurable, objective outcome metrics/indicators to demonstrate and confirm these actions, these outputs. *Outcomes* are the (evidenced) general and specific benefits, observable results, resulting from the outputs. We use measurable, objective outcome metrics/indicators to evidence and demonstrate the difference a set of activities has made, as per the definition earlier.

Audience. Impact is not for our eyes only. Audience is about understanding what interests the listeners to our impact story, what they want from it, and in what form. This is not a new idea and the concept is central to all forms of communication and marketing - understanding who we are telling the story for. The concept of Audience is similar to, but broader, more diverse, and perhaps more distant, than that of stakeholders; stakeholders have an interest in the process and outcomes of the Impact Journey. The primary stakeholders in a typical corporation are its investors, employees, customers and suppliers, and in Academia individual academics, research institutions and funders. Modern theory goes beyond this conventional notion to embrace additional stakeholders such as the community, Government and trade associations.[xv] But there are many Audiences that are not stakeholders; in Academia, for example future research staff and students and the local community are potential Audiences but not stakeholders; in Industry when Puma came out with the first Environmental Profit and Loss account, other sustainability practitioners were Audiences as they waited with baited breath to see the result.

Different types of reporting of the various aspects of impact will be required to properly connect the information collected to the Audience's requirements and interests. Some types of impact and evidence will be valued more by some Audiences than others and precision and validity requirements will be different. Different Audiences will use impact reports for different purposes and there can also be different *internal* Audiences within an organisation. Impact reports can, and most likely will, be used by many different organisations for a wide range of possible applications; as well as for reporting to, and by, Industry, research funders and Government, they could for example be used to develop good practice, for staff development, for strategic planning, enhancing and scaling impact, reporting to investors and for PR. Considering Audience mitigates issues of attribution, value, dependencies, opportunity cost and non-positive impacts, as all these issues are of different significance to different Audiences.

At first sight, having a range of different Audiences for impact reports may appear to make the subject much more complex and place a huge burden on project managers. However if the same underlying information and evidence collected (including quantitative, qualitative, observational) is simply reported in a manner, context, and timescale most suitable for each Audience then this complexity does not occur. Although social science teaches that what you collect determines what is reported, and although different users of impact reports will have different definitions, requirements and objectives and will determine what is valid, practical and relevant for them, usually different Audiences simply translate into different contexts and perspectives of the same underlying impact information. Context and perspective is a critical part of considering Audience because reporting impact requires the appropriate background, language, and validity. For example, NPL provides a radiation calibration service, and approximately 145 cancer patients survive each year in the UK as a result of NPL's impact on the accuracy of the radiation dose they receive. For patients their interest is in the impact on their own lives, but for the hospital the impact is in overall survival rates, and perhaps for the consultant, a key impact is peace of mind.

Impact Journey and Audience Matrix - a Space for Metrics. Combining Impact Journey and Audience builds on their individual benefits - a universal way in which to explore and report impact and a story that is meaningful for different Audiences; by using these two concepts in a simple matrix, metrics appropriate to *both Impact Journey* stage and Audience can be developed. The earlier stages of the Impact Journey tend to be mainly about knowledge and capacity and can easily be reported with numbers - bean counting; the later stages tend to be system-based, more reliant on external issues, moving towards the longer term social and economic impact types and are reported as stories - case studies. Table 2 provides some exemplar metrics relevant to each Impact Journey stage, impact type, and Audience, for a fictional case on language research.

Table 2 Examples of Metrics According to Impact Journey Stage and Audience.

Audience	Outputs	Translation	Usage	General Impact	Specific Impact
Academia, Linguists	Number of academic papers	Number of new debates influenced	Increase in collaborations between cultural bodies	Better cultural reach and understanding about language loss	Number of languages saved
Government, BIS	Number of academic conferences, debates, and seminars on language rescue	An agreement on the value to the UK of rare languages	Increase in unusual language students	Increase in language-educated people	Number of new educational opportunities for unemployed language teachers
Industry, Course Developer	Number of enquiries about new language interests	Number of new course book options	Development time invested in new language course	Increase in sales	Increase in profit

Using metrics relevant to Impact Journey stage *and* Audience provides appropriate context and enables the impact story to be told incorporating both the easier-to-collect metrics of the early stages (number of researchers, companies, experiments etc), with the necessary narrative of the later stages.

Pragmatic Impact Metrics; Value Score Cards Metricated Case Studies. But Metrics are not Enough! Metrics alone do not convey the whole story. What gets measured gets attention and can easily drive undesirable behaviors if an understanding of the significance of why a metric is chosen or its relevance to an Audience, is lost. Ensuring relevant metrics are reported on that apply to the project and/or organisation is key.

How can the framework and concepts explored above can be applied in practice? Key to developing pragmatic impact metrics is the use of both metrics and narrative. The narrative provides the essential context for different Audiences. The metrics provide the significant and important detail, starting from an empirical approach to provide grounding. The narrative provides the focus that determines which data that is relevant to both the project - not just any data but impact focused - and to the Audience. Narrative enables the use of (ideally user-related) testimonials to wrap around the data to tell a story and make it powerful. Narrative together with numbers, provide the grist to the mill.

Project effectiveness can be increased by the impact reporting activity. It is an opportunity for each collaborating party to respond to their individual key stakeholders (satisfying accountability) through monitoring and reporting – as well as responding to the combined/collective needs of the key stakeholders and other Audiences as a single entity; the process for agreeing the metrics is important, Using both metrics and narrative promotes transparent performance monitoring, enhances the efficiently and effectiveness of research projects but also supports collaborative relationships for the long term, making it easier to track and report impact post the initial research project completion, especially where there are expected to be significant time lags for the impact to be generated.

The following sections show the power of practically combining these two complementary concepts. The use of the Impact Journey and Audience concepts are applied to the development and selection of metrics, which then forms the basis of strengthening the generation of a Value Scorecard and/or a Metricated Case Study. These provide complementary ways of communicating impact in a way that is commonly understood by stakeholders and connects with the Audience throughout the stages of the

Impact Journey. The overall objective is to provide the Impact Story. In collaborative projects between the Government, third sector, companies and universities, all parties often work together on a project and associated Impact Story. Pragmatic Impact Metrics can support project effectiveness for each party to report to their stakeholders by monitoring and reporting the relevant impact in a simple way that can be readily used by each party (and others). Below we demonstrate, using as an exemplar the same specific project for all examples (how research supported graduate recruitment and retention for a Small and Medium Enterprise (SME), an issue of potential interest to all strands of the Triple Helix), a 'typical' narrative-only case study, a Value Scorecard and a Metricated Case study, and the process to develop them.

A Typical Case Study Case studies typically tell a story, sometimes for a specific Audience, but often more generally, using narrative. Telling the story from the point of view of the beneficiary of the project is powerful, but rarely done. The project relates to a project commissioned from a UK university, by a company, ABC Ltd to conduct research to help with their issue of graduate retention. The researchers carried out a survey of 50 graduate employees at ABC Ltd., desk research into Generation Y, and practical workshops and interviews with 20 company employees, and then produced a report for ABC Ltd.

(**Input**) ABC Ltd, a small engineering company realised it had a graduate attrition problem so it asked a UK University to help. (**Activity**) The university carried out interviews and desk based research (**Output**) and as a result (**Translation**) identified key issues for graduates, which were that increased working hour flexibility was important to graduates, graduates felt more likely to succeed when their managers provided more feedback on their work and the needed to feel satisfied with their career opportunities and in their everyday work.

(**Usage**) As a result ABC Ltd implemented new management styles and working practices for their graduates, in particular, flexible working practices and a management training programme. They also created meetings for graduates with a company mentor to discuss career progression and developed case studies of graduates who have gone on to senior leadership positions within the company.

(**General Impact**) As a result there were improved networking opportunities between senior management and the graduates, (**Specific Impact**) the attrition rate was reduced, costs saved and

job satisfaction scores improved. Subsequently Business Link presented the results at one of their SME conferences to influence Government to provide more support for SMEs to recruit graduates. Business Link is now also providing training sessions to support other SMEs to successfully recruit and retain graduates. The UK University has been invited by Business Link to write a follow on paper to put the UK University's research results in front of other companies with graduate schemes.

Developing impact metrics is most easily demonstrated in this example by using a version of the Impact Journey/Audience matrix as shown above. Once this table has been generated the key outcomes and how to evidence them can be determined, as shown in Table 3 below (illustrative and non-exhaustive, and in this case split into short, medium and long term specific impacts). This information then strengthens the Value Scorecard and Metricated Case Study approaches. What this metrics development process shows is the critical importance of a good, collaborative relationship between the parties to collect and share performance data over time. Both these approaches will evolve with time - over the life of a project and long after; the Journey/Audience matrix allows for such evolution by providing the framework for change over time.

Table 3 Development of Pragmatic Impact Metrics for Value Scorecards and Metricated Case Studies

Translation (Outputs) *Change in Understanding*	Usage (Outputs) *Change in Behaviour*	General Impact (Outcome) *Change in Condition*	Stakeholder, Specific Impact & *Actual Impact Metrics* *Change in condition*			Source & Evidence update
			Short term	Medium Term	Longer Term	
Report provided to ABC Ltd Improved understanding of career opportunities	Graduate personnel case studies *Mentoring twice a year*	**ABC Ltd** Improvement in operational efficiency.... **ABC Ltd** Increased reputation of for excellence **...**	**ABC Ltd** Reduced recruitment costs *Approximately £40k saved*	**ABC Ltd** Improvement in the retention rate of graduate cohort *Retained 4 graduates more than previously (20% increase) after first year After 6 months, 85% of the graduate cohort were more likely to recommend the company than previously* **ABC Ltd** Increase in the number of applications per vacancy *Applications rose from an average of 2 to 4 applications per vacancy*	**ABC Ltd** Increase in number of the original graduate cohort eligible for internal promotion. *3 additional employees from the second year graduate cohort were seen as future management potential* **ABC Ltd** Increase in company being recommended as a good place to work *Around 80% of relevant graduates cited ABC Ltd's high quality graduate scheme and career opportunities*	ABC's HR Team
Updated programme for graduates	Graduates attended sessions	**Graduates** improved job satisfaction	**Graduates** Improvement in job satisfaction score *Graduates in Year 2 of the programme rated it 9/10 compared to 6/10 previously*			ABC Ltd's HR Team Survey of graduates
UK University was invited by Business Link present a follow on paper to their annual SME conference	The paper was included in an MP debate	**University** Participation in policy making as thought leaders. **University** Follow up with Business Link/ UK University in following year	**University** **University** Increase in the number of press releases/ articles *Increased the number of co-authored papers by 20% Researchers were interviewed by Radio 4 about their findings.*	**University** Increase in the number of references/citations in Government papers *University was referenced in 1 Government paper* **University** Increase in the number of clients asking for similar services *About 3 more enquiries pa to support an organisation in a similar way*	**University** Increase in the number of Bills passed as a result of university participation in policy making *Metric not yet available*	Business link website Government archives Prof J, UK University
	Business Link adopted the new training courses & also provided new SME support to retain leading graduates	**Sector** Increase in training participation levels **Sector** Enhanced reputation for excellence	**Sector** year on year increase in attendees at specific activities *A 20% increase in SMEs coming to Business Link for advice on employing graduates*	**Sector** Increase in the number of other SMEs using the material *Business link reported that 65% of SMEs who enquired about recruitment, attended one of their training courses* **Sector** An overall increase in willingness to recruit graduates as a result. *80% of SMEs attending the training course cited that they felt more confident in knowing how to retain graduates*	**Sector** Increase in the graduate retention rate amongst SMEs *The number of Business Link SMEs with a retention rate above 20% increased by 40%*	Business link website

The Value Scorecard This innovative methodology developed by NPL provides a pragmatic means of tracking progress along the pathways to impact throughout a programme (or project) lifecycle and is consistent with the key concept of "Impact as a Journey". It uses a structured framework and process to manage the combination of quantitative and qualitative measures but in such a way as to cope with the evolution of these measures in line with the twists and turns of that journey. It draws together the strategic objectives of an activity with due acknowledgement of what key stakeholders in those activities *value*. Essentially the process:

- Determines the strategic objectives driving the investment in a programme

- Identifies the key stakeholders in the programme and brings them together to establish the totality of what they value

- Defines *value windows* through which the programme can be viewed from the different perspectives that are relevant to those key stakeholders

- Establishes and documents the indicators, measures and specific metrics that describe performance towards those objectives

Using the same case as in the 'typical' case study above - *impact arising from research to support graduate recruitment and retention,* the Primary Stakeholders in the project at the start were:

- ABC Ltd – problem holder and commissioner of the project (funder)

- The University – suppliers of the solution

- RCUK – interest and influence on uptake of previous research

- Graduates – affected by the outcomes of the project

These key stakeholders evolved further following project completion with the uptake of results by a wider *Audience* including:

- Business Link – policy influencers and support providers

- Other SMEs – spill-over beneficiaries of the project results

The four categories that result from capturing the key aspects that Primary Stakeholders individually and collectively value from the project (types of impact in practice) are:

Reputation – organisational and personal. Of interest to all stakeholders at the different levels of "organisation" and "individuals", for different purposes e.g. for the **UK university** to secure future funding, for the **graduate employees** to attract them to the company, for the **sector** to engage in strategically critical, evidence-based discussions and decisions, and for **ABC Ltd** to portray the image of caring employer.

Financial - investment and returns. Of common interest to **ABC Ltd** and the **UK university** alike to understand what is the direct financial return on investment from this project.

Knowledge – engagement and mobilisation. Of common interest to **all stakeholders** to demonstrate that the outputs from this project are captured, codified and shared during the lifetime of the project - and beyond. In effect, this is demonstrating that useful knowledge is being shared and applied, and in this case transforming one Audience (**Business Link**) into a stakeholder.

Wellbeing – happiness and health. Of interest to ABC Ltd and the **graduate employees** alike as a part of the psychological contract that bonds employers and employees. A happy work force is a productive work force!

These categories, or types of impact, form the "Value Windows" through which the indicators (where necessary), actual metrics (where available), and proxy indicators (where necessary) are viewed by all stakeholders and Audiences. Proxy indicators come into play when it is difficult to measure directly the thing that is valued, akin to "intangibles" used in company reporting. e.g. reputation has a value but can't easily be measured directly, so commonly accepted indicators include the number of independent awards received by an organisation in recognition of their work or the REF score awarded to a university by the independent review process. Sick Leave is a proxy indicator for the happiness of employees – research provides the credibility for use as a proxy by showing a positive correlation - that content employees are less likely to have leaves of absence due to illness. Indicators for each Value Window for this research project are illustrated in Table 4. Note that in this example, the progression of Audience members to stakeholders (e.g. Business Link and other companies) was not explicitly envisaged as an impact of the original research project. This illustrates the concept of the Impact Journey as presented at the start of the paper and demonstrates that the framework is robust enough to accommodate this progression. Selection of metrics from a recognised database of metrics (for example those of Vertigo Ventures) can aid informed comparisons of performance with other organisations or projects.

Table 4 Value Scorecard Windows

Value "Window"	*Actual* and Potential Indicators/metrics to demonstrate value
Reputation - organisation and personal	
• University reputation to enhance securing funding to further research aspirations • ABC Ltd reputation as a caring employer • RCUK reputation of providing relevant underpinning research + *Business Link reputation as policy development and implementation influencer*	• *Increased the number of co-authored papers by 20%* • *After 6 months, 85% of the graduate cohort were more likely to recommend the company than previously* • *Around 80% of relevant graduates cited ABC Ltd's high quality graduate scheme and career opportunities* • *Applications rose from 2 to 4 per vacancy* • *Researchers were interviewed by Radio 4 about their findings.* • XX Articles published in Industry journals • XX Awards (employer, individual, organisational) • XX Citations of previous research • REF (impact) rating attained by university
Financial - investments and returns	
• ABC Ltd reduction in operating costs, • Increased profitability • University obtaining income to further research interests	• *Approximately £40k recruitment costs saved* • *About 3 more university enquiries pa to support an organisation in a similar way* • Cost of research project • Cost of staff development programme • Profit (or GVA) per head • ROI + Additional funding secured for business support and staff development programmes
Knowledge - engagement and mobilisation	
• Availability of high quality knowledge relevant to consumers at the right time • Reach, engage and serve more organisations and individuals • ABC Ltd access to expert domain knowledge to apply to their specific problem • University having their expert domain knowledge being applied • RCUK seeing underpinning research being exploited • Graduates understanding what job hygiene factors are valued by others	• *The number of Business Link SMEs with a retention rate above 20% increased by 40%* • *A 20% increase in SMEs coming to Business Link for advice on employing graduates* • *Business link reported that 65% of SMEs who enquired about recruitment, attended one of their training courses* • *University was referenced in 1 Government paper* • *80% of SMEs attending the training course cited that they felt more confident in knowing how to retain graduates* • Research findings and recommendations adopted by ABC Ltd • Citations of previous research in project reports • Web hits of publications
Wellbeing - happiness and health	
• Graduates having a wonderful work environment and career opportunities • ABC Ltd providing an appropriate job experience	• *Graduates in Year 2 of the programme rated it 9/10 compared to 6/10 previously* • *Retained 4 graduates more than previously (20% increase) after first year.* • Sick leave

The Metricated Case Study The *Metricated* Case Study process explicitly combines metrics and narrative to provide a coherent story of what activities have been undertaken; it starts by considering what the benefits have been, who has been affected by them and how - the stakeholders - the specific group the benefits accrue to, and the evidence source and indicator (which also provides a reference point for data capture.)   Whilst the *stakeholders* are the company, graduates, university, and the sector, the *Audience* in this case is the *Triple Helix cohort*. Thus this case study covers all the stakeholder areas to demonstrate applicability to Industry, Government and Academia; it tells the story in a different order to the table and it does not use all the data.

Input; *Change in Ideas* ABC Ltd, a small engineering company realised it had a graduate attrition rate of 50% for the second year graduate cohorts which was costing the company approximately £10k per year for every graduate who left. In addition to the direct financial cost of losing the graduates, ABC Ltd was concerned about the affect it was having on their future leadership pipeline, a critical component for supporting the growth of the company and developing a larger management team of new staff with those who had risen through the ranks and understood the company.

Activity; *Change in Knowledge* ABC Ltd fully funded a UK University (chosen due to their research record and Prof. J's reputation) to aid their understanding of the drivers behind their graduate attrition rate and advise on how to improve it. Key stakeholders involved during the engagement included graduates, SME sector, ABC Ltd, and the University; a key partner was Business Link.

Dissemination (Output); *Change in Knowledge Distribution* Through interviewing the 50 ABC Ltd graduates, conducting desk based research and delivering a practical workshop with interviews on 20 company employees, the research group used their previous research into Generation Y and identified key attributes of the graduates and their preferred ways of working which allowed the ABC Ltd to implement new management styles and working practices for graduates working with them.

Translation (Output); *Change in Understanding* In particular the research report noted that increased working hour flexibility was important to graduates, graduates felt more likely to succeed when their managers provided more feedback on their work and the needed to feel satisfied with their career opportunities and in their every day work.[xvi]

Usage (Output); *Change in Behaviour* As a result of these findings, ABC Ltd adapted the company policy to allow for flexible working practices, updated their management training programme to encourage more regular feedback, provided one to one sessions between the graduates and their managers, and developed case studies of graduates who have gone on to senior leadership positions within the company. ABC Ltd also created bi-annual meetings for graduates with a company mentor to discuss career progression.

General Impact (Outcome); *Change in Condition* Improved operational efficiency and an increased reputation for excellence was felt by **ABC Ltd** whilst the **graduates** had improved job satisfaction. As a result of the project, **the University** also saw increased participation as thought leaders in policy and collaborated further with Business Link. The **sector** was also able to benefit from the work through the collaboration between the University and Business Link.

Specific Impact (short term Outcome); *Change in Specific Condition* **ABC Ltd** reduced its attrition rate to 30%, resulting in fewer graduates leaving and so reducing ABC Ltd costs by around £40,000 per year, mainly through reduction in time required to recruit and train replacements and reduced recruitment costs. Aside from the direct financial gain from the improved graduate retention, after just 2 years ABC Ltd has also seen improved **graduate** satisfaction, with job satisfaction rising from 6/10 initially to 9/10 three years later.

Specific Impact (medium term Outcome); ABC Ltd allowed the results of the paper to be provided to Business Link, which was presented at one of their SME conferences to influence Government to provide more support for SMEs to recruit graduates. Training sessions are now being provided by Business Link to support other SMEs to successfully recruit and retain graduates and since these started **Business Link** has noted a 20% increase in the number of **SMEs** using their services for advice on employing graduates and an overall willingness by the participants to recruit graduates, a trend they are looking to monitor and feedback to the Government. This trend has not gone unnoticed by other interested parties, with Radio 4 interviewing the UK University to learn more of their work of this space, further acknowledging their expertise in this space, and the **University** is now seeing up to 3 more requests a year for related support.

Specific Impact (longer term Outcome) The UK University has been invited by Business Link to write a follow on paper to put UK University's research results in front of hundreds of other companies with graduate schemes and it is being presented to the government for onward policy making. The UK University also has a review call with ABC Ltd to learn more of the affects of their project and develop their case study further through capturing any additional long term impact evidence. ABC Ltd has been seen as a great place to work as demonstrated by being able to consider 3 more graduates than usual for internal promotion each year.

Findings and Interpretation

It is clear that impact is important; necessary but little used. The reasons include many issues relating to evidencing the impact itself, such as time lag and attribution, but also the lack of a common framework and terminology useable by Government, Industry and Academia together.

We have provided in this paper a simple, credible, *pragmatic* framework (Impact Journey with Audience, Value Scorecards and Metricated Case Studies) which addresses the key difficulties with impact and which is universally applicable. Reporting research and development impact is important not just for universities but also for companies, charities, and Government. The simple, common-language, flexible, and robust method detailed here provides the three strands of the Triple Helix with a common tool kit to ensure that each Helix strand, and indeed those outside the Helix such as the public and the media, can be informed and educated about all about the benefits of research and development, not just in economic terms, but also in terms of the softer and harder to measure social benefits. Pragmatic Impact Metrics offers a framework for improved long term organisational sustainability and collaboration.

For impact to be successful in encouraging the increased collaboration necessary to stay competitive in the current climate, and to ensure that finance is available for research projects from Industry and other partners, setting a 'pathways to impact' vision is essential from the start. Pragmatic Impact metrics provides a starter glossary of terms on what constitutes impact, outputs and outcomes. The Metricated Case Study uses the Vertigo Ventures Impact Metrics toolkit and taxonomy which is aligned with international reporting guidelines such as the Global Reporting Initiative, United Nations Global Compact, and the Millennium Development Goals, to help promote consistent language across sectors. From the Triple Helix perspective there is the threat that if we do not speak the same language it will make higher

education more isolated from Industry partners; companies, who have to report in different operating regions, the threat is an increased administrative burden and lost the opportunities to benefit from their social, financial and environmental impact reporting; and for Government the threat is that it may completely miss the opportunity to effectively harness the potential of the collective power of the Triple Helix strands.

Conclusions

Universities need to maintain their funding, Industry needs to survive and meet changing customer demands, and the Government needs to rescue the economy. *Embracing impact* through a *common framework* provides a way to demonstrate and value performance so to drive more effective results. *Doing it together*, using the simple framework of an Impact Journey with Audience provides a common process to enable Industry, Government and Academia to demonstrate the benefits of increasing levels of collaboration. Using a range of Journey- with-Audience based reporting methods such as Value Scorecards and Metricated Case Studies solves the dilemma that figures are required but that figures are not sufficient. All three strands of the Triple Helix can now use this framework in their communications to funders and managers and others to demonstrate a clearer and fuller picture of their impact.

Policy Implications and Directions for Further Research

But, not least due to its long timescales in many cases, impact is for ever, so where should we go from here? The concepts presented in this paper, as well as generating a pragmatic solution that can be used across sectors and borders, will allow benchmarking in the future, which can only contribute to higher quality projects, investments and research; one of our number is currently developing a database on agreed metrics as a start in this process. Even beyond that, the development of simple, automated tools to quickly and easily assess impact during and after a project is being explored by another of our number. Continuous impact monitoring will be a key route to ensuring the data is relevant for onward strategic use by an organisation. By running reports on a more routine basis, the information is more useful as part of its key decision making activity. Tomorrow never dies and we can always improve; it is clear that engaging in the process of exploring the Impact Journey, understanding Audience requirements, and developing Value Scorecards and Metricated Case Studies brings people together to develop a better overall understanding of the true benefit a project or organisation has generated.

The concepts presented in this paper provide a structure for sharing best practice. A recent report from the European Parliament[xvii] acknowledges that although there is some good practice in Public Research Organisations and in the Third Sector, it has not been shared to any great extent within sectors let alone across sectors that are now having to work together to achieve common goals. Using Pragmatic Impact Metrics, as described in this paper, will enable sharing of knowledge among the three strands of the Triple Helix, as well a across borders and sectors, and will enable good practice to be defined and agreed in this acknowledged difficult area.

Your organization cannot afford to fail. So do make use of what we have given you in this paper and report your own impact for your own organisation. If you provide some feedback to the authors, then refinements can be developed and your own impact can live another day.

Impact never fails, but where there are projections, they may not come to pass; where there are plans & reports, they will lie unread; and where there is knowledge, it will pass away ... unless someone benefits **and** others know they do.

i Horton (2013), *Impact as a Journey - with Audience: A Thought Piece*, Describe Project Seminar, April 2013, Forthcoming

ii Jones T. (2011), *The Value Scorecard – A Methodology For Evaluating The Impact Of Knowledge Transfer*, Proceedings of Triple Helix IX, Stanford USA,

iii VV-Good Index Methodology: Vertigo Ventures Ltd, April 2013 available at http://www.vvgoodindex.com/about-the-index/vv-good-index-methodology/ and JISC BCE Programme Embedding Impact Analysis in Research: Interfacing Research and Impact Systems IRIS Project Report, 2012

iv JISC BCE Programme 2012, *Embedding Impact Analysis in Research: Interfacing Research and Impact Systems*, IRIS Project Report

v Research Excellence Framework, accessed from http://www.ref.ac.uk/pubs/2011-02/

vi Etzkowitz H (2008) *The Triple Helix: University-Industry-Government Innovation in Action*. London: Routledge

vii Sloan A (1967) *My years with General Motors*, London, Pan

viii Friedman M. (1962) *Capitalism and Freedom*, Chicago, IL, University of Chicago Press

ix Evans WM , Freeman RE (1993) *'A stakeholder theory of modern corporation: Kantian capitalism'* in Kaler J, 2003 *differentiating stakeholder theories*, Journal of Business Ethics, 46: 71-83

x Blowfield M, Murray A (2008).*Corporate Responsibility A Critical Introduction*, Oxford University Press, Ch1

xi SKM Enviros, accessed from http://www.enviros.com/index.cfm?fuseaction=14.2&servicesId=331

xiiThe National Archives, accessed from http://www.legislation.gov.uk/ukpga/2012/3/enacted
xiii Ethical Corporation, accessed from http://www.ethicalcorp.com/communications-reporting/report-more-report-better

xiv Hughes and Martin (2012), *Enhancing Impact the Value of Public Sector R&D*, CIHE Report,

xv Inestopedia US, accessed from http://www.investopedia.com/terms/s/stakeholder.asp)

xvi Fedorciow L, Tshidzu B, with contributions from and edited by Roberts S (2012) *Why Do Graduates Leave Graduate Schemes*, , Informa Publications

xvii European Commission DG Research (2012), http://www.technopolis-group.com/resources/downloads/reports/IPOL-STOA_ET_2012_488798_EN.pdf