Technological University Dublin

ARROW@TU Dublin

System and Institutional Design and Transformation

Higher Education in Transformation Conference, Ontario, 2016

2016

The Evolution of a Stakeholder Model for DIT as it Enters a Merger of Three Institutes of Technology in Terms of Policy Definition and Control of Implementation

Deborah Brennan
Dublin Institute of Technology, deborah.brennan@tudublin.ie

Follow this and additional works at: https://arrow.tudublin.ie/heit161

Part of the Higher Education Commons

The Evolution of a Stakeholder Model for DIT as it Enters a Merger of Three Institutes of

Technology in Terms of Policy Definition and Control of Implementation

Deborah Brennan

School of Multidisciplinary Technologies

Dublin Institute of Technology

Abstract

As the Dublin Institute of Technology (DIT) prepares to amalgamate with the Institute of Technology Blanchardstown (ITB) and Institute of Technology Tallaght (ITT) in advance of becoming a technical university, we present a comparison of stakeholder research from 2008 and 2016, questioning how DIT might become better able to respond to the radically changing environment it faces. Using the McNay Model and Fourth Generation Evaluation, we consider the views of two groups of DIT stakeholders on the best model for change. In both years, it was felt that the entrepreneurial university model from the USA was unlikely to be successful, largely because of DIT's inability to raise sufficient funding. A corporate model was also rejected at both times and it was concluded that a European style of university incorporating collegial innovation was most appropriate. What was perceived as excessive bureaucracy in 2008 was considered to have increased by 2016 and current stakeholders fear that the culture of bureaucracy will survive beyond the merger, hampering progress and stifling innovation. We find the stakeholder is less convinced that change will happen on a large enough scale and at a fast enough pace for the Institute to survive into the 21st century.

Keywords: Dublin, institute, technology, amalgamation, merger, stakeholder, research

The Evolution of a Stakeholder Model for DIT as it Enters a Merger of Three Institutes of

Technology in Terms of Policy Definition and Control of Implementation

Introduction

Against the backdrop of a changing external environment for the combined institutes

intended to form the new Technological University for Dublin (TU), this paper addresses the

issue of how DITshould change to become better able to respond appropriately to the

radically altering environment it faces, whilst fully engaging staff in the change process.

In 2008, research forming part of a Doctoral case study carried out by Kevin Kelly of

DIT (2009) investigated the implications of change for stakeholders in DIT and examined

how DIT was viewed by these stakeholders at that time. Potential candidate university

models for DIT were examined. The work was accomplished through a series of interviews

and focus groups. In 2016, the same questions were discussed with a comparable, albeit

smaller, cohort of DIT stakeholders and in each case, stakeholder perceptions were presented,

interpreted, contrasted and analysed using the same analytical framework.

Barnett (2000) suggests that, in this age of *Supercomplexity,* universities are required

to make a full creative contribution whilst dynamically responding to ever changing

environments. He identifies three principal challenges for university leaders, these challenges

underlie this research. The challenges, as we presented them in earlier research (Kelly &

Brennan, 2015), are as follows:

1. Enabling staff to understand the challenges and to recognise that these challenges
   would continue to multiply. To recognise that there was no stable state and the only
   constant was change.
2. To motivate staff to address these challenges in the incessant turbulence of academic
   life.
3. To identify a form of leadership that engaged staff and brought intellectual
   groupings together in order to understand the challenges posed and to engage with
   one another in efforts to successfully address them.

Methodology

In 2008 and again in 2016, four different university models were examined and compared with the cultures, practices and understandings of stakeholders in DIT. At each time, a story of DIT was told through stakeholder collaboration and from within this story, the type of change model best suited to DIT's culture at the time was explored and examined. The findings from 2008 and 2016 were then studied in an attempt to capture how the culture of DIT and the attitudes and perceptions of its stakeholders had evolved over the intervening years. *Fourth Generation Evaluation* as described by Guba & Lincoln (1998) was used to address the substantive issue. This methodology seeks to address the concerns and issues of all stakeholders and not prioritize the opinions of any one group.

The Changing External Environment

The dynamic external environment complicates any organizational change process. The key environment changes facing DIT over the past decade and into the future are presented in Table 1.

Table 1. *The Changing External Environment* (Kelly and Brennan, 2015).

Changes in External Environment	Driving Forces	Likelihood of Increase in Driving Force	Likely Impact
Increased demands for better service and greater efficiency	Economic crisis fallout *Do more with less*	High	Pressure for change on academics and academic managers and change to terms and conditions.
Becoming a University	To enable DIT compete on a level playing field	High	DIT may lose research funding and its reputation may be damaged unless this is successfully negotiated.
Moving to a green field site	Demand for increased space and growth potential	Medium	DIT would not be able to grow student numbers or research capacity otherwise.
Changing Irish Economy	Globalisation	High	Movement to higher end of value chain and better qualified workers.
Changing society needs, movement towards a learning society	Government demands for alignment of higher education with needs of economy & society.	Very High	Changing student profile with varying age, ability, socio-economic background and, in some cases, with learning difficulties and disabilities. Demand for LLL& improved diversity.
Increased participation rates for school leavers	Industry and societal demand	High	Increasing costs of higher education (HE) demanding greater efficiency & flexibility.
Changing needs of students	More varied student ability and learning strategies & techniques with mass education	Very High	Students will opt for programmes which use modern L & T methods that take account of their needs and provide transfer and progression in a flexible, modular format with focus on the learner.
Change in governance and greater demand for entrepreneurial universities	Increased autonomy for universities and reduced public funding	High	Possibly less individual academic autonomy and increased pressure for activities that generate revenue.

Analysis of Academic Change Models

Four theoretical University models, namely Collegial, Bureaucratic, Corporate/Managerial and Entrepreneurial are examined here in connection with decision making structures, university autonomy and changing higher education policy, in order to address the challenges posed by DIT's external environment as outlined above.

It is widely held that the Collegial and Managerial university models represent two polar extremes in terms of management style. In 2001, Felt published a study of European universities in which he claims that the collegial university, combining professional

autonomy with high levels of staff participation in management, was the ideal on which many universities were structured up to the 1970s. His major criticism of this model however, was its inflexibility towards the external environment and its lack of responsiveness to stakeholder demands. He refers to the collegial university's lack of accountability and clear responsibility for decision making. Felt concludes that the price to pay for increased public funding is increased accountability to the funding body i.e., to the State and ultimately to the tax payer.

Diametrically opposite to the collegial model, Felt (2001) explains, is the corporate or managerial model. This model borrows a private corporate sector management style in which a top-down executive-management hierarchical system is often employed and goals are set by external sources. Collegial decision making structures are absent and there are few academic freedoms. The only power left to the academic is negative power which is at times skillfully used against management through unions and other means.

Felt (2001) placed two intermediate models between these two extremes:

- A bureaucratic model providing relative autonomy for the individual academic, but in a mechanistic and bureaucratic institution. A regulatory and procedural model with slow change and slow adaptation to new requirements.
- An entrepreneurial model which seeks out new markets and maintains financial security through maximising external funding.

McNay (1995) constructs a two dimensional model classifying four university models in terms of policy definition and control of implementation. McNay's university model definitions are largely similar to those in Felt's study (2001). The vertical axis of McNay's model provides a measure of policy definition while the horizontal axis indicates degree of control of implementation. In this study, the McNay model was used as a conceptual framework and analytical tool to examine the various types of university model and to compare these models with the cultures, practices and understandings of stakeholders in the DIT. Stakeholder perceptions from 2008 were then compared with the perceptions from 2016 against the backdrop of the changing external environment.
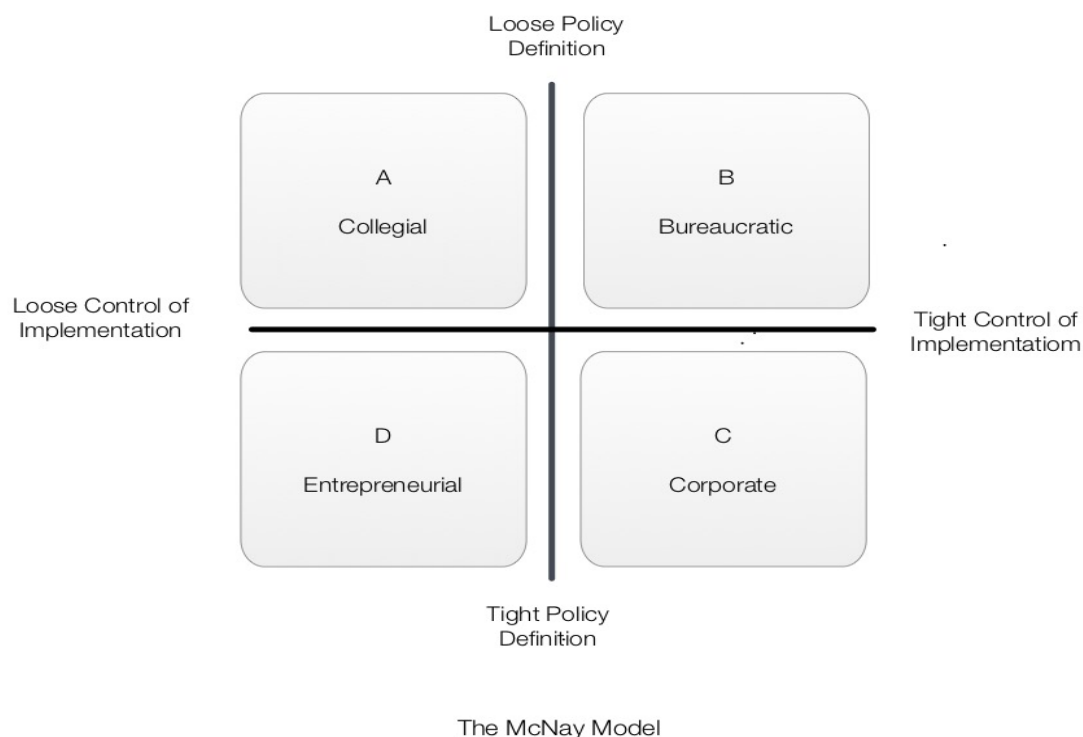
The McNay Model

Figure 1. The McNay Model

McNay's university models are outlined below:

- Type A, Collegium, with autonomy from external control, the collegial university can pursue its own agendas and academics are free to pursue their personal goals. Both policy definition and control of implementation are loose.
- Type B, Bureaucratic, the focuses of this university model are regulation, consistency and rules. Power is largely held by senior managers. Policy definition is loose, but control of implementation is tight.
- Type C, Corporate, management style is commanding, possibly charismatic, its ethos is crisis driven and competitive. Decision making is political and tactical, practices are managerialist. Students are customers and units of resource. Policy definition and control of implementation are tight.
- Type D, Enterprise. Oriented to the outside world, this model espouses continuous learning in a turbulent environment. Management and decision making are devolved, its dominant unit is the small project team. Students are clients and partners. It has tight policy definition but loose control of implementation.

McNay (1995) and Felt (2001) agree that all universities draw on all types of management, as do Clark (1998 & 2004), Davies (2001) and Shattock (2003a). Coaldrake & Stedman (1999), suggest that internationally, most universities are moving from loose policy definition to a policy that is more firmly determined.

DIT's aspirations for an Entrepreneurial or Enterprising University

Since as early as 2001, senior management has consistently indicated a preference for an entrepreneurial or enterprise model for DIT and this aspiration is embedded in the vision for Dublin's planned Technical University (TU) of which DIT will form part . Although widely documented in the literature, there is no consensus of definition for the Entrepreneurial University in the European context, the European Commission Guiding Framework for Entrepreneurial Universities (2012) states that there is a *"valuable plurality of approaches".* Clark's observations on the entrepreneurial model (1998) and (2004) are widely cited. Clark (1998) claims that European universities respond to dynamic external environments by seeking out special organisational identities matching their own culture and traditions. Entrepreneurial universities are innovative and confident, they play to their strengths and take calculated risks on the market. Later, Clark (2004) describes the entrepreneurial university in the United States as a compromise between the flatter controls of the traditional university and the more hierarchical controls of a managerial university. For Clark, sustainable entrepreneurialism maintains collegial forms of authority with shared governance, where those implementing policy participate in its formation. Gibb and Hannon (2006) claim that the entrepreneurial university not only copes with uncertainty and complexity but thrives on them. Marginson (2007) believes that the Ivy League universities in the U.S. are closest to Clark's model. Edwards (2004) compares the entrepreneurial university in Europe with that in the US. He argues that unlike in the U.S.,there are no large private university benefactors in Europe.

Whether the Entrepreneurial University model was attainable in the view of DIT's stakeholders and if it or another model was desirable to them was investigated in 2008. In the aftermath of global recession and the Irish economic crisis and with the prospect of Britain's

exit from the European Union and that event's economic potential repercussions for Ireland's economy, DIT stakeholders were asked for their views once again in 2016.

In 2008, the stakeholder research revealed an agreed opinion that DIT was an overly bureaucratic organization with a strong adversarial union culture set in a public sector environment. However, programmes and courses largely evolved from the bottom up with academics identifying niche areas and adapting curricula to external demands. Programme and course development at third level was seen to be collegial in many areas. Despite this activity, DIT was not seen as a collegial organization in the same way as some of the traditional universities at that time because of its hierarchical structure and its tendency to keep close control of implementation. In 2008, stakeholders favoured a decrease in bureaucracy going forward, however, continued bureaucracy in some aspects of operation, particularly in student assessment and examinations, was supported.

By 2016, DIT was considered by all stakeholders to have become more bureaucratic, principally due to funding issues and stricter financial controls, it was also felt to be less collegial than before. Stakeholders speculated that this was mainly due to increased academic workloads. The increase in bureaucracy and the loss of collegiality were seen as negative and mainly brought about as a result of the economic crisis.While some of the extra bureaucracy was seen as unavoidable, some stakeholders believed that multiple restructurings within DIT had contributed to increased bureaucracy. There was a widespread call for more transparency and considerable support for the rotation of senior management positions. Fear was expressed that excessive bureaucracy would persist into the era of the TU and beyond, hampering progress and stifling innovation. There was also concern that DIT might not have the capacity to change at the required rate to ensure the success of the TU project.

Figure 2 illustrates how interviewees viewed DIT in 2008 and 2016. Positions in this and other diagrams following, are colour coded in traffic lights format with green indicating

evidence of a lot of activity, yellow indicating evidence of some activity and red indicating
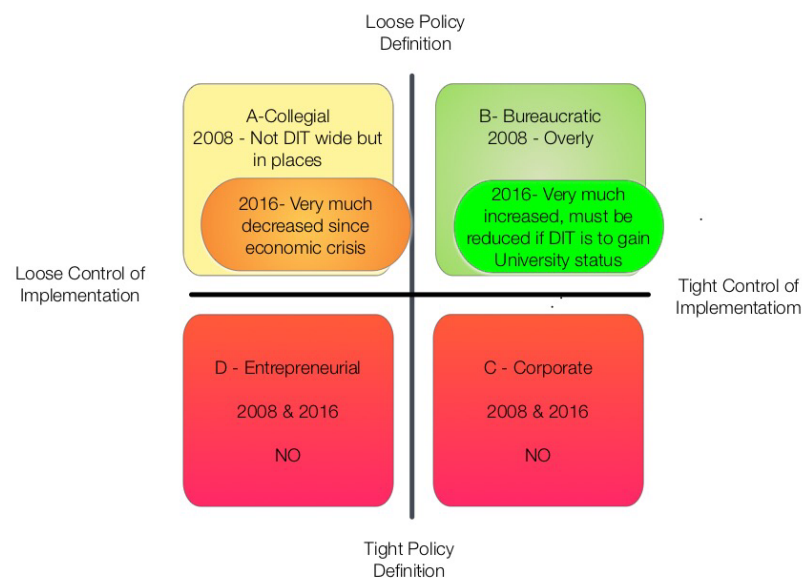
little or no activity.

Figure 2. Stakeholder's view of DIT in 2008 and 2016

Even if the suggestion for DIT to become an entrepreneurial university was viewed by

some staff as unrealistic, there was considerable support amongst staff and management for a

loosening of control of implementation and for more innovation and collegiality in both

years. The academic staff's support for this move, however, was on the understanding that

this did not mean running DIT like a business, although most saw the recruitment of

international students, for example, as being legitimate and important in raising revenue.

The word entrepreneurial met with considerable resistance in both 2008 and 2016,

however, the word innovative, substituted for entrepreneurial, as suggested by Clark (2004)

was considered acceptable by stakeholders at both times. The two words are not considered

by all as interchangeable. Shattock (2003b), for example, believes that the word innovative

does not capture the concept adequately. He claims that what is needed is a "stand up" or

self-reliant university, confident in what it does and that is autonomous. Interviewees agreed

that DIT had to become responsive to the ever changing environment and needed to be

innovative to do this, with the caveat that tight policy definition was sensible at times in order to protect the organisation from obvious risk. Academic stakeholders in 2016 felt that they had been required to become more responsive over the past decade, they were responding to a more diverse student base, multiple new teaching and learning tools and techniques, increased use of information technology and increased engagement in research. The stakeholders were divided, however, on whether this constituted an overall increase in responsiveness by DIT. In general, at both times, top-down decisions on policy were supported provided there was prior consultation with staff on major issues.

Third Level Activity for the Future

There was broad agreement amongst stakeholders in 2008 and 2016 with regard to third level activity. There was considerable support for more operation from the left hand side of the McNay model as shown in Figure 3. below.

Stakeholders felt that response to external demands would happen most effectively with academics acting in a bottom-up fashion. Several effective examples of this happening already in DIT were offered. The 2016 stakeholders, however, all agreed that this type of collegial and innovative activity had become more challenging and less possible than before because academics' workloads had increased considerably and that decisions concerning courses had become increasingly influenced by financial considerations. Senior management had raised the issue of staff workload with the Higher Education Authority (HEA) (Strategic Dialogue Cycle 2, Bilateral Meeting, 2015).

The need to be innovative and responsive to the changing external environment was recognized at both times. This would require increasing activity in the D quadrant of the McNay model, with policies set by DIT in response to government policy and HEA requirements, for example, with regard to international student recruitment and diversification. A number of the 2016 cohort of stakeholders, however, expressed concern

that HEA requirements and funding models were at odds with each other in areas such as

diversification with Level 7 courses attracting lower funding per student than Level 8

courses, for example. It was also considered by some that DIT would need to increase and

streamline supports for international students if it were to compete in the international

market. It was thought that the ongoing move to a new campus at Grangegorman in North

Dublin might ease this issue.

   In 2008, it was considered that resource allocation should operate within a tight policy

definition and tight control of implementation, this viewpoint was upheld in 2016. At both

times, increased transparency was thought necessary, for example, to ensure that resources

follow students in a fair and equitable way. Bureaucracy was seen as an inhibitor to

innovation in 2008, the situation was considered to have worsened significantly by 2016.

Some viewed the perceived increase in bureaucracy to be a result of management grappling

with challenges such as blunt instrument staff cuts and opaque funding policies. Despite the

dissatisfaction with bureaucracy, it was considered necessary in certain areas such as student

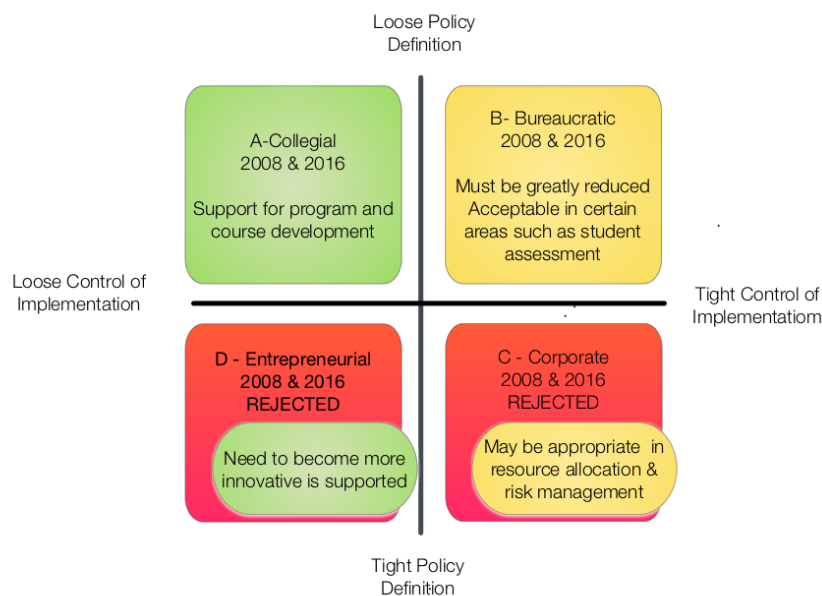assessment for the protection of both students and staff.

Figure 3. Stakeholders View of Third Level Activity in the Future for DIT

Fourth Level Activity for the Future

DIT's aspirations for university status have highlighted the need to increase research. In 2008 and 2016, it was widely agreed that this should be closely linked to third level teaching, which DIT is seen to be doing well. Where research was mainly underpinning teaching and carried little risk, it might operate best in quadrants A or D on the left hand side of the McNay model as shown in Figure 4 with very loose control of implementation and varying policy control depending on the nature of the research.

It was agreed that research could be self-funding and that risk assessment should be undertaken with regard to financial and ethical matters. Where research carried significant risk, financially or otherwise to DIT, then policy definition and control of implementation should be tighter, operation should be mainly from quadrant C. This might happen through campus companies. It should also happen in the case of potential for significant profit. Generally though, it was thought that research would best evolve in a collegial and innovative environment. However, in 2016, stakeholders were concerned that high workloads for academics might make research activities less likely, but most agreed that the increase in numbers of staff with PhDs would bring new expertise and efficiencies to research activities. Figure 4 below summarises how interviewees saw the future at fourth level as DIT moved forward.
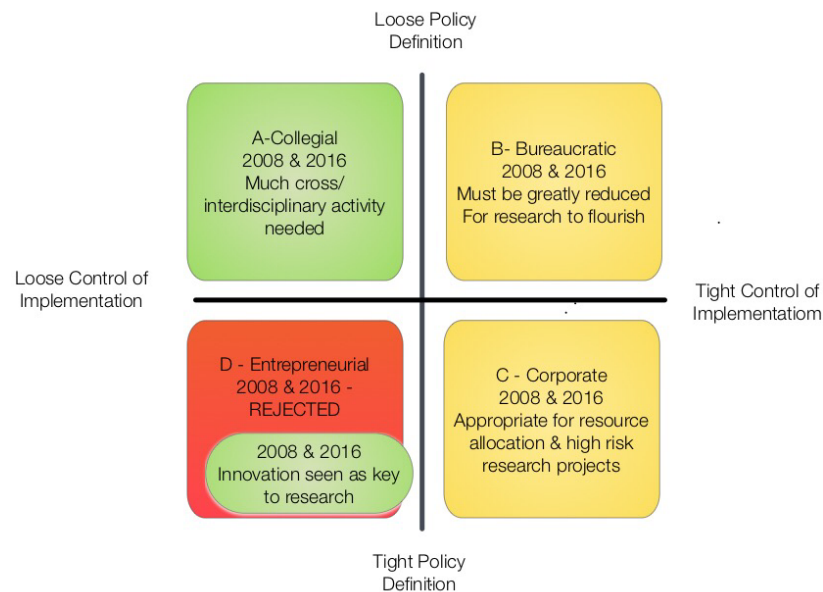
*Figure 4.*Stakeholders View of Fourth Level Activity in the future for DIT

Discussion

In this research we gain an insight into how stakeholder constructs and stakeholder views of past and present practices in DIT have evolved over the past decade. Although no one university type on the McNay model fit the perception of any interviewee, stakeholder adaptations of the model revealed values and perceptions of the culture of DIT as well as interviewee ambitions for the Institute. One of the most striking elements of the findings was that, despite global recession, turbulent changes within DIT and the move towards a Technical University, the stakeholder views remained relatively unchanged, pointing towards a confident and assured sense of shared identity and future aspiration.

However, although bureaucracy was considered essential in certain areas of risk, it was viewed as excessive and having increased since 2008. This bureaucracy was thought to be potentially detrimental to the future aspirations of DIT. It was widely held that collegiality in third level activity and in cross/inter disciplinary research must increase in order for DIT to flourish, but in 2016, most of the stakeholders agreed with the view that increased bureaucracy was stifling collegiality.

In 2008 it was considered that research, in general, should be increased with tight control of policy definition and implementation where risk or potential profit was significant. In 2016, it was felt that research had increased greatly but that increased staff teaching hours and workload in general were hindering research activity. It was agreed at both times that diversity and student numbers could and should be increased. In 2016, it was felt that a planned move to the Grangegorman campus would facilitate an increase in student numbers and supports for diversity in general over the coming years.

In most scenarios, all stakeholders, including senior management, were opposed to strictly top-down decision making in both 2008 and 2016. Many interviewees were strongly opposed to the American style of entrepreneurial university where they believed all activity was dictated by money and the needs of the economy. A ***European model*** of entrepreneurial university where **innovation** was the key word seemed to be more acceptable to the stakeholders. Most stakeholders were supportive of increasing activity in the D quadrant with tight policy definition but loose control of implementation. This appears to be consistent with what Clark (2004) describes as ***Collegial Entrepreneurship*** where flexible capabilities weave together new and old, change and continuity, in a sustainable way. Clark (2004) argues for entrepreneurial action but in collegial forms – Collegial Entrepreneurship should be nailed to the masthead. Throughout the interviews in 2016, it was regularly expressed by stakeholders, that DIT is "excellent at what it does" in educating students from diverse backgrounds often entering DIT at "sub-degree" level or as lifelong learners. Contrary to the stakeholder's distrust of the word entrepreneurial, this thinking could be considered in line with Shattock's (2003) understanding of the term, with DIT showing itself to be "confident in what it does well" and with the desire to become self-reliant and autonomous.

Figure 5 shows where the main academic activities in DIT might need to operate for the Institute to respond adequately to change whilst keeping stakeholders committed to the

process. The term ***Collegial Innovation*** might be more appropriate and acceptable than

Clark's Collegial Entrepreneurship for DIT going forward. Most activity is on the left hand
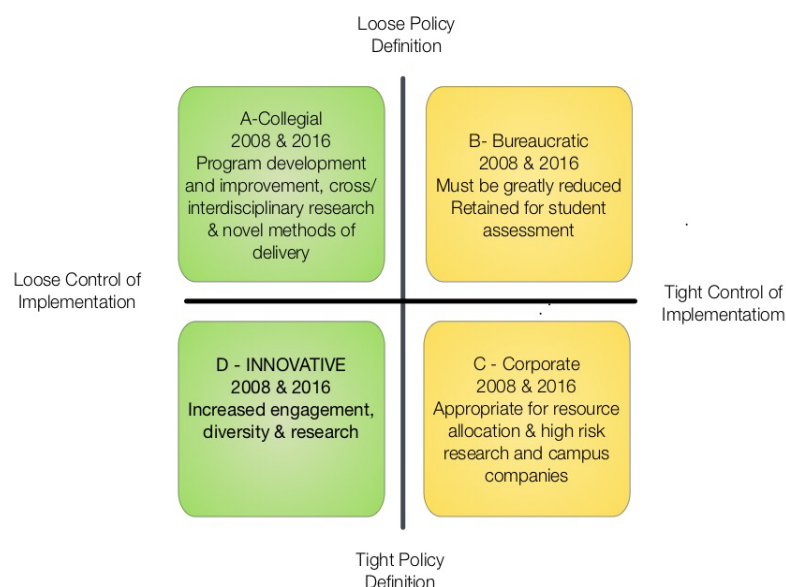
side of the McNay model as shown.

Figure 5. Change for DIT

Over the past decade, academic staff in DIT have been presented with more and more

challenges in the face of unprecedented change. They are required to research, to design

modules and programmes, to advise, to evaluate and to innovate, to keep abreast of industry

developments, to teach and to embrace technology. Their administration load has increased

greatly, their teaching hours are longer and the pay is less. They feel restricted by

bureaucracy, their students come from more diverse backgrounds and present with more

challenging needs.

Yet buffeted by change, the academics of DIT are confident in, and committed to,

what they do best. Even more so than the 2008 interviewees, the interviewees of 2016 are

frustrated and concerned by bureaucracy and distrustful of entrepreneurial funding

mechanisms, most believed that third level education funding should be provided wholly by

the State. DIT's academics are largely in favour of increased research believing that it

informs teaching and creates an environment of inquiry, however, excessive workload and

staff accommodation are seen as obstacles here. Academics were committed to the practice of employing teachers with industry experience and technical expertise alongside more traditional academics as the combination of these types of teacher was seen to provide the best student learning experience.

For the past decade, academic managers have had to meet increased challenges with diminishing resources. They are frustrated that they often cannot support change of which they approve. As student numbers in core areas reduce due to cyclical trends in the economy, managers are often forced into crisis management. Academic management has become largely about entrepreneurship, leading change and inspiring innovation in staff. This represents a steep learning curve for these senior academics who have received little training in this regard. In addition, these managers are expected to grow their own research and post graduate student numbers whilst all of the time dealing with increasingly complex internal and external environments. Managers must have appropriate training in leadership skills, innovation, entrepreneurship and advocacy available to them as and when they require it if they are to be enabled to tackle the enormous and diverse challenges they face.

Conclusion

In summary, there is a desire for greatly reduced bureaucracy with an increase in collegiality, much increased innovation and some specific corporate activity. There is also a very real concern that if bureaucracy is not reduced, DIT may not succeed and flourish in the era of the TU. However, this research provides significant evidence that stakeholders in DIT have a strong sense of identity and mission. Throughout a decade of global turbulence in both economy and academia, through staff changes and reorganisations, the stakeholder understanding of DIT's place in the education landscape has remained relatively unchanged. Academic staff have become more responsive to the changing worlds of education and enterprise, they have taken on heavier workloads, up skilled in technology and in many cases,

have embarked on research. Yet the student remains the central focus. DIT's strength is in educating students from diverse backgrounds, lifelong learners, apprentices to postgraduate students. Here is where DIT's excellence lies. Research enhances the experience for all, it provides a culture of inquiry, a focus for thinking and a discipline of mind. Student engagement and engagement with the community are traditional strengths which have not been lost. But there are fears for the future if DIT cannot learn to respond to external change more quickly and appropriately.

The strength and power of this culture must be acknowledged in any change process. Change should be implemented in a collaborative way. The imminent amalgamation of DIT with ITB and ITT as the Technical University for Dublin will bring new stakeholders with their own experiences, expertise and concerns and these stakeholder's voices need to be heard too if the TU is to succeed. The tradition of Institutes of Technology in Ireland is a strong one, their joint student and industry focus is highly compatible with the notion of an innovative university.

It is clear that a collaborative style of change model is required for DIT. The stakeholder desire points to a university not focused solely on finances but a university that is willing to make appropriate decisions and does not drift. A model in which policies are debated openly. A stand-up university that manages its own finances. The model of a European style, *Innovative Collegial University,* adopting bureaucratic and corporate business practice where appropriate seems fitting. A university that retains its legacy of excellence and innovation in teaching, continues to serve its community and welcomes a more diverse and international student base. A university which values its tradition and embraces its future.

References

Barnett, R. (2000) Realising the University; in an Age of Supercomplexity. Bucks; OU Press.

Clark, B. R. (1998) Creating Entrepreneurial Universities: Organisational Pathways of

Transformation; Surrey: Pergamon.

Clark, B. R. (2004) Sustaining Change in Universities: Continuities in Case Studies and

Concepts; UK: OU Press.

Coaldrake, P. & Stedman, L. (1999) Academic Work in the 21st Century, Changing Roles

and Policies; Australia: University of Queensland Press.

Davies, J. L. (2001) The Emergence of Entrepreneurial Cultures in European Universities; in

Higher Education Management, Vol 13, No. 2 (p25 – 32).

Edwards, K. The University in Europe and the US in King, R. (2004) The University in the

Global Age. UK: Palgrave Macmillan. Felt, U. (2001) University Autonomy in Europe:

Changing Paradigms in Higher Education Policy; University of Vienna.

Fullan, M. (2005) Leadership Sustainability: System Thinkers in Action. California; Corwyn

Press.

Gibb, A. A. & Hannon, P. (2006) Towards the Entrepreneurial University; Internet Journal of

Entrepreurship Education, Vol. 4, pp. 73-110.

Guba, E. & Lincoln, Y. (1998) Fourth Generation Evaluation. Calif: Sage.

Kelly, K. (2009) Universities Changing in Response to a Volatile Environment: a Case Study

from Ireland. Pp. 75-88 in SEFI and TKK. Dipoli: European Continuing Education,

European Society for Engineering Education.

Kelly K. & Brennan B. (2015), "The Evolution of a Technological University in terms of

Policy Definition and Control of Implementation" Stream 1: Enterprise and Engagement,

Paper 8.

NcNay, I. (2006) Beyond Mass Higher Education: Building on Experience. Maidenhead: OU

    Press.

McNay, I. (1995) From the Collegial Academy to the Corporate Enterprise: the Changing

    Culture of Universities, in Schuller, T (ed) The Changing University. Bucks; SRHE&OU

    Press.

OECD- European Commission Guiding Framework for Entrepreneurial Universities (2012),

    Retrieved from:

    https://www.oecd.org/site/cfecpr/ECOECD%20Entrepreneurial%20Universities%20Fra

    mework.pdf

Ramsden, P. (1998) Learning to Lead in Higher Education. London, Routledge.

Shattock, M. (2003a) The Entrepreneurial University Model: Factors Which Inhibit its

    Realisation. In Clark (2004) Sustaining Change in Universities: Continuities in Case

    Studies and Concepts; OU Press.

Shattock, M. (2003b) Managing Successful Universities. UK: McGraw-Hill.

Shattock M, (2006), Managing Good Governance in Higher Education, Open University

    Press, McGraw Hill Education, Berkshire.

Thorpe & Goldstein (2013). Engines of Innovation, The Entrepreneurial University in the

    Twenty-First Century. North Carolina: The University of North Carolina Press. P110-

    111.