The Business Incubator and the Female High Technology Entrepreneur: A Perfect Match?

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Abstract
This paper explores a key area of policy and research; that of the start up and growth patterns of new firms owned by female entrepreneurs in the field of Science, Engineering and Technology (SET) located within business incubators. A feminist perspective is adopted which analyses the existing literature pertaining to women's experiences as entrepreneurs within the SET sector. Case study evidence describing the experiences of an SET female entrepreneur sited within a business incubator unit is then outlined. Four key outcomes arise from this paper; first, a theoretical consideration of the impact of gender upon women's experience of SET business ownership; second, greater conceptual understanding of the entrepreneurial project in society by exploring how women 'fit' into sectors and environments where traditionally, their presence has been weak. Third, the paper adds to the limited empirical evidence regarding female SET entrepreneurs and finally, it offers a feminist critique of the notion that incubators offer gender blind support to their incumbents.

Key Words: Science Engineering and Technology (SET); female entrepreneurs; feminist theory, business incubation

Introduction
Since the 1950s, women have attained increasing visibility within formal waged work such that they now constitute just under half of employees within developed economies overall (OECD, 2003; Women and Equality Unit, 2008). This increasing penetration into the labour market has not yet been echoed within entrepreneurial careers where women constitute, on average, approximately one quarter of the self employed and just over one tenth of business owners across the European Union[1] (OECD, 2003; Global Gender Gap, 2007). It is argued that gendered ascriptions prevent women from fully realising their entrepreneurial talents (Brush et al, 2006; Carter et al. 2007) and so, discourage many from starting and/or growing new firms (Marlow, 2002; Ahl, 2006; Brush et al. 2006; Carter and Bennett, 2006; Fieldon and Davidson, 2007). Moreover, women owned businesses tend to be over represented in locally traded, lower order services with low growth aspirations and opportunities as opposed to knowledge based businesses with high growth and export potential (Henry and Johnston, 2003; Carter and Bennett, 2006). In essence, women's share of the self employed sector within the labour market reflects their waged labour experiences where their over representation in lower skilled, low paid work is reflected by a similar position in low profit, insecure self employment. Unsurprisingly therefore, women are heavily under represented in the entrepreneurial element of the Science Engineering and Technology (SET) sector which although associated with volatile and high risk ventures, offers considerable potential for high returns (Smallbone and Wyer, 2006). It might be assumed that this situation will soon change given there are now increasing numbers of female SET graduates (Mayer, 2006) these in turn, will swell the numbers of female entrepreneurs. However, evidence indicates that women are leaving the sector early in their careers (Crump et al. 2007) or, are vertically segregated into lower positions thus, find it difficult to accrue the necessary levels of entrepreneurial capital and confidence necessary to support successful new start ups (Wynarczyk and Renner, 2006). This scenario casts some doubt upon the assumption that more women will filter through from employment into self employment despite the fact that SET business ownership may offer women

[1] Note: the share of female entrepreneurship within North American economies is not included in this discussion given that the definition of ownership profile differs between those and European countries such that the calculations are not directly comparable.

greater flexibility and opportunity to overcome some of the challenges associated with working within male dominated careers (Perrons, 2003; Watts, 2007).

To explore these arguments further, this paper considers the experience of a female SET entrepreneur sited within a business incubator unit. Such a location offers an apposite context for discussion as evidence indicates that business incubators are an effective support mechanism for new high technology based firms offering facilities, advice and ready access to networks (Rice, 2002; Lee and Osteryoung, 2004). This combination of infrastructure and support enhances the confidence of the entrepreneur and the durability of the venture. However, the under representation of women entrepreneurs within business incubation is rarely recognized or explored. Thus, we investigate the degree to which female entrepreneurs 'fit' within the incubator environment and the extent to which they benefit from such placement. To achieve these objectives, the discussion commences with a discussion of entrepreneurship as a gendered activity within a masculine domain; this is followed by a consideration of women's employment and self employment within the SET sector. The role of the business incubator and its positioning as a masculinised realm is then explored. To illustrate these arguments, case study evidence from an incubator unit in the Republic of Ireland is described. Based upon this combination of analysis and evidence, implications are considered and conclusions drawn.

Entrepreneurship as a gendered activity within a masculinised domain.

Oakley (1973) originally utilised the term 'gender' to illustrate how the ascription of stereotypical feminine and masculine characteristics are applied respectively to women and men reflecting a valorisation process which persistently subordinates the feminine. In essence, that which is associated with men, their characteristics, activities, values and actions is constructed as the norm whilst that which does not, is perceived as weak or deficient (Ahl, 2007; Holmes, 2007; Marlow, 2002; Watts, 2007). Hirdman (2000) notes that two key elements define this gender system; first, the masculine and feminine are segregated and operate in opposition to each other and second, there is a persistent hierarchical order which elevates the former above the latter. Walby (1986; 1990), in her earlier explorations of patriarchy underpins this argument with a tripartite analysis of systems, structures and processes interacting to facilitate a dynamic but persistent model of subordination. This demonstrates that women experience gender related disadvantages but these are articulated in a myriad of ways sensitive to context and agency. As Watts (2007:302) states this, '*acknowledges that the category woman is not homogeneous but as a 'class' is comprised of individuals differentiated by age, sexuality, ethnicity and social background*'. The subtleties and vagaries of this debate have been well rehearsed within contemporary literature and debate drawing upon differing feminist analyses as explanatory vehicles (see Beesley, 2005 for an overview). Whilst there is dissent and considerable critical debate regarding the manner in which female subordination is articulated and experienced (Segal, 1989; Greer, 2000) there is consensus regarding the pervasive and persistent presence of such disadvantage. However, using the power of agency, to differing extents women can draw upon various strategies to negotiate through their particular contextual experiences of subordination.

Entrepreneurial activity has been suggested as just one such strategy as if offers women degrees of autonomy and control over their economic activities and so, potentially enhances their social status and power. However, this autonomy and empowerment may be illusory as drawing from discourse theory (Foucault, 1972) for their analysis of the entrepreneurial narrative; Smith and Anderson

(2004:137) argue that, '*the accepted notion of morality in entrepreneurial narratives is patently a 'masculine' gendered form'*. Ahl (2007:687) presents convincing evidence for this claim; drawing upon a meta analysis of published work within the entrepreneurial domain, she concludes that, '*the entrepreneur was consistently described in exactly the same words as those used to describe manhood. The result of the construction of the entrepreneur as male, is that women as entrepreneurs are rendered invisible*'. As such, the female entrepreneur becomes the 'other' (de Beauvoir, 1988/1949) and so, is seen as an interloper in the field. This analysis suggests that women do not easily 'fit' into the accepted model of entrepreneurship as that which is associated with the feminine is in opposition to entrepreneurial action and characterisation. This argument is usefully illustrated by the fact that, in comparison to their male owned counterparts, women owned ventures are both more likely to be described as 'under performing' in terms of growth and profit generation and to have their firms described pejoratively as 'hobby' businesses (so not a strategic outcome of expertise but a serendipitous one from a leisure interest) (Carter and Bennett, 2006; Carter and Shaw, 2005). Indeed, a feature on BBC 'Women's Hour' recently drew attention to women using self employment to generate an income when child care constraints restrained access to formal waged work but patronisingly, described them as 'mummypreneurs' (www.bbc.co.uk/womenshour : 19.4.2008). The defining theme of such descriptions being that women fail to achieve the normative (male) standards for a successful business – that of a full time activity with the aim of maximising economic returns. This argument is now explored in more depth using the example of the SET sector as an explanatory vehicle to illustrate these issues.

Femininity, SET careers and Business Ownership

High rates of female entrepreneurial activity within lower order services have been explained by previous occupational experience, easy access and low capitalization required at start up (Marlow, 2002; Marlow et al. 2008). Axiomatically, women are then over represented in these traditionally feminised sectors, such as education, health, catering, caring, personal services (Boden and Nucci, 2000; Hundley, 2001) which devalues the business status and lowers returns. Moreover, ease of entry leads to crowding thus, competition is stronger with associated implications for profit generation and sustainability (Meager et al., 2003; Roper and Scott, 2007). In effect, the negative impacts of femininity and female occupational segregation follow women into self employment but rather than poorer pay and prospects, the outcome is lower incomes, poorer performance and firm viability (Verheul and Thurik, 2001). The solution to this perceived problem is deemed to be agentic in as much as women themselves need to be assisted and encouraged to gain the necessary financial, human and social capital to act entrepreneurially in sectors which offer better opportunities for normative success (Kepler and Shane, 2007).

Yet, even when women do exercise agency and achieve appropriate qualifications and professional accreditation to enter high status occupations, traditional masculinised career paths within gendered organisations combine to form so called 'glass ceilings' constraining women's progression (Patterson, 2007). This argument is rather well described in the SET sector where Wajcman, (1991) and Crump et al. (2007) draw attention to the competitive and aggressive nature of the industry where career progression is based upon the male model of long hours and unbroken employment (Blackwell and Glover, 2008). Consequently, women are excluded from or indeed, exclude themselves from male dominated career building tactics (Sommerlad and Sanderson, 1998; Wilson, 2005; Bolton and Muzio, 2008). So, even though there are increasing numbers of female SET graduates, (Mayer, 2006) they are exiting early from their careers (Wynarczyk and Renner, 2006)

largely, because as Faulkner et al. (2004:2) note, there is an exceedingly, 'chilly culture for women in the ICT workforce'. In fact, the SET 'pipeline shrinkage' problem is a well documented phenomenon where the ratio of women to men shrinks dramatically from that evident at graduation to that within established careers (Etzkowitz et al, 2000). Drawing from a range of data, Crump et al (2007:46) found the industry to be overwhelmingly dominated by men such that in all but the lowest levels of data entry work, women constituted less than one third of the workforce. Reflecting the masculine culture within the sector per se, SET based employment has not been found to be 'family friendly'; rather the opposite. Only around one third of those who take a career break for maternity/caring purposes actually return to the industry, citing the lack of flexibility as a critical problem and those who do return are likely to re-enter at a more junior level (Crump et al, 2007; DTI, 2002). So, it appears that women delay family formation in the awareness of its detrimental impact upon career progression. Accordingly, the [lack of] flexibility within such careers is instrumental in shaping women's progression and the consequent gender imbalance at senior levels (Blackwell, 2002; Greenfield, 2002; Watts, 2007).

Self employment however, has been seen as a route to surmount gender related career blocks in hierarchical occupations (Allen and Trueman, 1993; Rouse, 2007). Indeed, '*self employment and enterprise offer women a real alternative means of earning good income and achieving a greater flexibility in their working lives'* (Women's Unit, 2000 as cited in Perrons, 2003). The business ownership option would, it might be supposed, offer women leaving formal SET careers the opportunity to manage their own routines (Perrons, 2003). Moreover, given the importance of small, innovative firms to the creativity of this sector, entrepreneurship is highly encouraged. Yet, despite the positive perception of entrepreneurship plus, possibilities for greater flexibility and an escape from rigid career structures, women remain heavily under represented as SET business owners (Wynarczyk and Renner, 2006). Upon reflection, this is perhaps not that surprising as if women are leaving SET careers at relatively early stages in their careers they will struggle to accrue the range of tangible and tacit capitals necessary to establish and grow new ventures. Consequently, it has been argued that women require dedicated support and advice mechanisms in order to successfully navigate through the challenges of beginning new SET ventures (Godwin et al, 2006; Welter et al. 2003).

Although there are convincing arguments for the provision of targeted support for women, this has yet to clearly materialise within the main stream where small business initiatives remain largely generic (Welter et al, 2003). It is agreed that many of the challenges related to beginning a new venture are common to all who take this path but it is evident that gender related issues will be an additional element effecting women's entrepreneurial progress. Accordingly, it has been argued that support services should be gender aware in order to recognise and respond to issues which specifically disadvantage women (Prowess, 2007). Thus, in the next section, the role of business incubators as one such example of a generic business support mechanism is examined.

The Business Incubator as a Masculine Domain

According to Smilor and Gill (1986:1) '*the business incubator seeks to effectively link talent, technology, capital and know-how in order to leverage entrepreneurial talent and to accelerate the development of new companies*'. The driving force behind the new venture creation process is the entrepreneur, as such the incubator seeks to develop this entrepreneurial talent by providing complementary services which support and promote the skills and expertise of the entrepreneur

when the firm is most vulnerable to market uncertainty (Rice and Matthews, 1995; Lalkaka, 2002). Although there are various types of business incubator with differing priorities reflecting their sources of funding, all share an ambition to support the development and survival of new, entrepreneurial ventures (Hannon and Chaplin, 2003). Moreover, they possess certain common characteristics, namely the provision of low cost office or laboratory space, administrative services, skilled managerial support and access to a network of professional bodies such as bankers, lawyers and accountants. Offering such support enables growth as the entrepreneur can concentrate upon product development and marketing strategies rather than practical and administrative matters (Barrow, 2001). Also, within the incubator entrepreneurs are in close proximity to each other, they can discuss the challenges and risks they face and so, generate a sense of common struggle. Although now dated, Smilor and Gill's comment, '*such an environment should provide an association that should help problems and stimulate the entrepreneur's drive for success*', (1986:20) remains apposite. More contemporary evidence from the National Business Incubation Association (NBIA) indicated that in 2002, 87% of firms that graduated from NBIA were still in business, a survival rate substantially higher than the national two-year (66%) or four year (50%) rates for small businesses per se (NBIA, 2002).

Incubators also have the potential to yield other intangible benefits for entrepreneurs, for instance, a critical issue for new firms is a lack of credibility with stakeholders such as suppliers, customers and new employees (Smilor, 1997; Lender, 2003; Totterman and Sten, 2005). Acceptance into the incubator unit enhances credibility in terms of the firm's prospects as an expert assessment of future potential has been undertaken; hence there is a positive trade off from the reputation of the incubator. Incubators also promote mechanisms for fostering partnerships and creating networks between firms, universities, investors and support agencies (Hansen et al, 2000; Hannon and Chaplin, 2003). Access to such networks can aid the small entrepreneurial firm to overcome the liabilities associated with newness and smallness and support the development of co-operative relationships which are critical in the early start-up and development stages of the venture (Lender, 2003). Along with the provision of practical facilities, incubators create a positive 'clustering' effect in that firms with shared entrepreneurial ambitions, at similar stages of growth and in broadly related sectors are in close proximity. As De Clerq and Arenius (2006:343) argue, bringing together those with shared knowledge and expertise, '*decreases the ambiguity associated with the entrepreneurial process*.' This also encourages and facilitates effective networking and knowledge 'spill over' between the organisations (Acs, 2006). In essence, the incubator firms are sharing resources within the unit, they are creating new networks between themselves as well as with the external stakeholders necessary to establish sustainability and promote growth (Rothschild and Darr, 2005).

It is assumed that business incubators offer a gender neutral backdrop to support, advise and facilitate the growth of entrepreneurial firms as the focus is upon the commercial potential of the venture, not the personal characteristics of the owner. Yet, there is an absence of women within such units (UKBI: 2007) indeed, fewer than 5% of tenants within the UK are female and incubators are very 'male focused' in their marketing and services (Prowess, 2007). As such, it would appear that women are not benefiting from the valuable support which incubation offers to new entrepreneurs and their ventures. It is evident that fewer women start new ventures of the type broadly associated with incubation – fast growth, entrepreneurial firms –to the same extent as men which would offer some justification for the gender disparity within incubators. However, they are

not absent from this segment of entrepreneurial activity in sufficient numbers to satisfactorily explain their extremely marginal presence. Rather, there is an assumed 'lack of fit' between women owned businesses and incubation as the characteristics of stereotypical female entrepreneurs are incongruent with those attributed to successful high technology entrepreneurs (Heliman, 1983; Watts, 2007). Thus, for women who do wish to benefit from incubation, they must firstly navigate tacit presumptions regarding their credentials for entry but then, will encounter a masculinised culture not conducive for their support and advice needs. Drawing upon this analysis which links gender, entrepreneurship and incubation, we now explore the female perspective upon how women 'fit' into sectors and environments where traditionally, they have been largely absent or excluded.

Methodology

To investigate this issue further, evidence is presented from an in-depth case study analysis of a female high technology based firm within a business incubator in the Republic of Ireland. For the purpose of this study, a dense and detailed understanding of the contribution of incubator placement to business development was required which necessitates an exploration of contextual information so, an inductive approach was adopted. This single case study approach is deemed appropriate in that the organization is small and the respondent is directly involved and intertwined within the enterprise and therefore, can be regarded as a reliable source of data (Bowman and Ambrosini, 1997). Single case studies have the potential for 'fruitful generalization' (Lijphart, 1971:693) and as such the unit of analysis can be "an individual, a community, an organization, a nation-state, an empire, or a civilization" (Levy, 1988; Sjoberg et al, 1991). As such, this paper explores one particular female entrepreneur's experience of starting and growing a SET business within an incubator unit.

To complement the single case approach, an oral history perspective has been adopted drawing upon a detailed life history narratives whereby the respondent was encouraged to reflect upon her aspirations and emotional experiences of being a woman within the SET sector. The use of oral history in this context is premised upon gaining insight into deeper and different understandings of the role of gender upon growth patterns. For the female business owner, this approach is apposite as it sites experiences of entrepreneurship within the wider context of their lives where no written or other form of record exists, so oral history narratives are the vehicle through which they can voice their identities. According to Reinharz (1992:126) '*women's oral history is a feminist encounter because it creates new material about women, validates women's experience, enhances communication among women, discovers women's roots and develops a previously denied sense of continuity*'. Moreover, although oral history is a well regarded tool for historians (Thompson, 1988; Vansina, 1985; Yow, 1994), it has rarely been used within the entrepreneurship field. As such, this approach responds to arguments from Ahl (2006; 2007) who calls for more gender-sensitive approaches to researching women's entrepreneurship in order to overcome the inbuilt biases of the standard research methodologies. In fact, such methodologies are founded upon masculinised priorities such as growth and high returns which in effect elevate the value of male dominated sectors, as many female businesses fail to meet the normative standards for successful business operation – that of full time activity with the aim of maximising economic returns.

The context for this research is the Republic of Ireland. The Irish economy has been defined by growth and expansion during the last 20 years (Barry et al, 2002) with notable support for the

development of entrepreneurial firms through incubator placement. In fact, small high technology enterprises are the most abundant source of innovative practices in Ireland (Flynn and Hynes, 2000). The particular site under scrutiny here was established in 1980, is located within Ireland's first Science and Technology Park and was the first digitally networked business incubator. An integrated package of new business development support services, facilities and expertise is in place to assist entrepreneurs to plan, research, develop and build new high technology businesses. Consequently, the role and purpose of the incubator in terms of enabling the growth patterns of firms operating within the SET sector is well established. The interviewee in this study was the first, and to date, only female tenant.

The meetings with the respondent, Naimh, were undertaken in 2007 and consisted of four meetings and subsequent telephone conversations to clarify and expand upon certain issues. Niamh was initially encouraged to express her experiences freely without the constraint of a structured format but gradually, a standard set of questions was introduced in so far if they had not been already covered. However, both an advantage and disadvantages of this approach is the wealth of data generated. To help address this issue, the interviews were tape-recorded, transcribed and then analysed through the NUD*IST software package. The characteristics of the respondent are described in Table 1.

Table 1 about here

Entering the field

Naimh attended an exclusively female convent school and had no recollection of positive or negative peer pressure regarding her decision to study sciences rather; '*the choice at school was science or domestic science; I remember my Dad saying that 'your mother can teach you to bake at home*!' This in itself might be considered somewhat unusual that a father would actively encourage his daughter to challenge normative gender paths in education (but still affording his wife the task of passing on traditional feminine skills). However, Naimh's choices were also influenced by positive role models as all the science teachers (biology, physics and chemistry) were both young and lay members of staff whereas nuns dominated within the humanities. Therefore, the science subjects were seen both as an attractive and a 'trendy' option. After completely an Information Technology degree at University, Naimh was offered a graduate position within an IT company. When asked whether business ownership was considered as a viable career option at this time Naimh explained that, '*it felt too risky, I thought if I worked for someone else it wouldn't be as risky later on*'. So, whilst she had considered entrepreneurship, Naimh felt she had insufficient experience and was in fact, drawn to the security of full time employment. After working for a large IT multinational company for fifteen years in a variety of roles based on data collection and solutions she, ' *realised that there was a need in the market for good many Enterprise Resource Planning (ERP) systems that could help analyse data but would be particularly geared towards SMEs and smaller companies.* Naimh's husband also worked for multinational within a similar field and supported her business idea, *'so I decided to leave XXX and set up here in the Incubator'*. When asked whether entrepreneurial intention ran in her family, Naimh referred to her older brother, '*yeah my brother has set up a company, we're both entrepreneurs but I am much more conservative in my growth ambitions than him*'.

The launch of the new venture coincided with her husband taking up a position at the local university; this was very important as Naimh felt that the security of his job ensured that there was a 'fall back position, '*the mortgage was covered and the kids would be fed'*. When prompted further upon the importance of this, Naimh remarked, '*to be honest if my husband had a different job I don't think I would have started the business'*. Furthermore, '*we know that whatever risks we take in the business there is a wage coming in and we can live on that, it provides a safely net'*. That Naimh has two school age children was also recognised as a constraining influence upon business performance, '*having a family has restricted the amount of time that I can dedicate to the business, but I think it is very grounding in one sense, particularly during the start-up stage as you are a lot more disciplined in what you do and tend to focus on the important problems'*. In essence, her husbands' stable employment had been critical for Naimh to feel that domestic and caring duties were being appropriately managed, '*my husband's job is a lot more structured and predictable, so that helps with looking after the kids, I couldn't have done it otherwise'*. This last comment is telling. Although Naimh accepted that her new enterprise would reduce the time spent with her children, her concern and guilt was somewhat assuaged by the knowledge that her husband would be able to take the 'mothering' role which she would have to forego. Regarding the balancing of family life with running the business, Naimh remarked '*with holidays looming they say if I'd done teaching I'd have the holidays with them. They're probably tired of hearing; one last summer Mammy working and then I'll take longer holidays'*.

Being an SET entrepreneur

The discussion then turned to the experience of being a women in a male dominated sector, '*No, I haven't met any women in the same position as myself, in a small start-up. I'm not sure whether that has to do with the sector, as there were a lot of female employees in the larger company that I worked for'*. After explaining that the identification of a niche market drove her to 'spin out' from a large multinational, Naimh began discussing the disadvantages of business ownership particularly, the isolation of being within a male dominated environment. She felt that men and women need different support networks and a lot of 'lads talk' exacerbated this isolation. '*That's the main thing that I miss about working for the larger company, there were more woman there, a lot more socialization so I do miss female company.*

Was Naimh the subject of any adverse comments about her position within the firm for example, was she ever mistaken for the secretary? Naimh revealed that, '*there have been times when I have answered the phones and they sounded surprised, and they say 'can I speak to the person in charge'*. Yet, Naimh felt that her gender did not cause her to be treated differently or suffer discrimination. Paradoxically, she then went on to describe how her inter-personal dealings were shaped by gendered assumptions and attitudes; so, customers were more polite when dealing with her than with her male engineers, '*particularly if there is an issue, customers are more polite if I'm there and things get resolved more quickly'*. Further, *'in negotiations guys are a lot less confrontational, they aren't as competitive and will back down a lot easier. In negotiations, I am treated differently'*. Whilst she did not feel overtly patronised because of her femininity, she remarked, '*I do think sometimes, men feel uncomfortable negotiating deals with me, in particular, there was one customer who was considered very tricky and we heard how he had negotiated with other companies, but I think he was more uncomfortable negotiating with a woman, not that I would say I was using any feminine charms but I think he felt uncomfortable trying to be as hard as when he's negotiating with a man'*. Niamh also identified gender differences in management styles

when she stated, '*I think as women we do look for greater consensus. We look for more of an agreement, where sometimes the male engineers have a tendency to throw their hands up if things are going their way. Though it's not being patronising, it can be an advantage, though it's not something that I go and deliberately use but it can come in handy'*. The masculinity of the environment was not lost on Naimh, '*there is definitely more of a distance between me and them, sometimes when I enter a room the conversation stops because it is boys talk. Sometimes I do feel they're holding themselves back and would other things be said or would they react differently if I wasn't in the room?* These are interesting sentiments as initially, Naimh denied that her gender was an issue but then went on to describe, at length, how it intruded into her daily business dealings.

Lehman (1992) identified how discriminatory practices persist in work structures which might appear to have superficial equality. For example, the exclusion of women from the acquisition of organisational knowledge through the 'old boy network' and the belief that a woman had to behave more like a man to succeed. In order to overcome this isolation, Naimh had joined a Women in Business Network, '*I do find that I enjoy going to their meetings for female interaction. There is a lot less socialisation among business start-ups; I do miss that so I attend the women in business networks mainly for socialisation'*. This was not confined to her immediate work environment but also that of the incubator; she became more visible at formally organised seminars and events. '*I am always the odd one out, the only female tenant, the other male tenants are always reserved around me, I never get invited to the pub afterwards, that's for sure'*.

Research (Hoang and Antoncic, 2003) has concluded that there is a great deal of similarity in the networking behaviour of men and women, but the composition of networks varies by sex. Women and men develop networks which reflect their own sex thus, given their poorer levels of entrepreneurial capital and knowledge; this can be detrimental for women (Aldrich, 1989; Smeltzer and Fann, 1989; Cromie and Birley, 1992). In this instance, Naimh had found that those in her business networks, '*tend not to be the technology sector but in fashion and, retail'*. Thus, Naimh found empathy and companionship from her networking but did not benefit from critical information sharing and collaborative problem solving. It is clearly difficult to construct supportive and productive business networks when the potential membership is so scarce, as is the case for high technology female entrepreneurs.

The female presence

Men overwhelmingly outnumber women in the high technology sector and so, the strong association between masculinity and SET emphasises women's visibility and difference in this field. Naimh was very aware of this, *'I am a bit of a novelty, especially here in the incubator; I get rolled out for the photographs and any press releases, I am a bit of a token'*. When the discussion turned to the absence of women both in senior level SET careers and as SET entrepreneurs, Naimh remarked, *'a lot more could be done particularly within schools. I also think we need more relevant role models*; *science and engineering is not seen as a women's career, it is not glamorous or sexy'* and regarding entrepreneurship, *I think this is due to the risk factor. A lot of women involved in IT have either gone into lecturing or work for large multinationals, not working for themselves. I don't think this has anything to do with ability or competency. Its purely financial and the social structure'*.

Incubation practices

Naimh described how the provision of support and office facilities within the incubator meant that her firm was able to organize and commence trading relatively quickly. However, Naimh did point out that this provision sometimes did not cater for female business owners with children, particularly during the school holidays, *'A huge debate we had during the first winter we were here, all the heating was on a timer, I asked if I came in early or during holidays could the timers be changed, trying to get changes like that implemented took a while'*. Naimh initially set up the business from her home as her children were quite small and found the credibility offered to a young firm by sharing the incubator address to be advantageous particularly when dealing with customers. As Naimh commented, '*I found that using my home address didn't have a lot of credibility with customers. But when you were cold calling companies with your idea, giving your address as your home address isn't very professional'*. Consequently, the facilities offered by the incubator such as shared meeting rooms and reception areas were all considered to offer distinct advantages, particularly when interacting with customers. A further advantage was the advice and support provided by the business advisors. When asked if she more comfortable working with a female business advisor Naimh responded, *'I actually had a male business advisor when I first came into the incubator, he was very good at making sure that there was contact, continued contact, the female business advisor has a different style, she might say when you are free come down for half and we will discuss the business. It's more personality than organisational'*.

Future plans and succession

Within the literature one of the main differentiating factors between male and female entrepreneurs is often their growth aspirations in terms of employment and sales (Boden and Nucci, 2000). This is neatly illustrated by Naimh who, when asked to articulate her growth strategy for the next five years said, *'the options from here are grow, sell or stay static. The plan is for the first, the second is Plan B, and the third is not really an option'*. This discussion then focused on the issue of succession and the handing down of business to her children, 'i*f plan A works, the business will be handed on to the children. My 13 year old son and 8 year old daughter are interested already, although they see it as a 'soft option'*. According to the extant literature the success of the self-employed parent is of central importance to a child's perception of entrepreneurship as a viable career (Davidsson, 1995). In particular, children of successful entrepreneurs are themselves, more likely to act entrepreneurially. Another recurrent theme within the literature is the lack of appropriate female role models within the IT industry therefore, when asked if Naimh saw herself acting as a mentor to other women either now or during retirement, she commented '*If I retire I have considered coaching as a next career'*. As for her immediate plans, they focus around the sustainability of her venture whilst ensuring that her children to enter third and second level education respectively. As for advice to other female SET entrepreneurs, Naimh summed this up with, '*if I was to do it again and wanted to combine a career and family; I would go for self-employment in my 20s if I had the resources; or wait until my 40s when the children are older. But all that is in an ideal world where you meet the ideal life partner at the right time!'*

Discussion

By drawing upon a life history approach, detailed and in-depth case study evidence has been generated that describes the decisions which under pinned Naimh's resolution to begin a new SET venture and her subsequent experiences of incubation. From the narrative which emerged, we would agree with Ahl (2007) who argues that the context for entrepreneurial activity generates

more similarities than differences between men and women. We see that view reflected in this case as Naimh gained managerial experience within a large firm before entering self employment; she recognised an entrepreneurial opportunity which was then discussed with family members before making her decision to begin a new venture. Initially, she test traded at home before entering the business incubator to gain greater credibility with suppliers and customers. This journey reflects that made by many, regardless of gender, who begin new businesses (Storey, 1994). Our interest however, is in the extent to which femininity shapes this journey. From our analysis of gender, it has been demonstrated that femininity as a characterisation is devalued so the manner in which this ascription spills over into entrepreneurship is of concern here. Within this case, such spill over was illustrated by a number of events and issues. So for instance, before beginning her venture, Naimh satisfied herself that her children's emotional and financial welfare was protected in as much as her husband left his corporate career attaining secure and flexible employment within a university. Consequently, that he could take a more active parenting role and had a dependable income was a key trigger for the launch of her business as these aspects ameliorated many of the risks Naimh associated with new venture creation such as demands on her time and threats to the family income. However, Naimh still spoke at length regarding the difficulty of redefining her mothering role as she was concerned over her absences from the family. It was notable that this 'role conflict' had also shaped the development of the business in terms of the amount of time Naimh was willing or able to commit to it. She readily agreed that business growth had been affected by her desire to maintain a role and presence as a mother; despite her belief that she had constrained her business time investment, she was sensitive to her children's cynicism regarding her claim that in the future, she would be a 'better mammy'.

The incubator culture was exposed as highly gendered. Again, reflecting the extant literature regarding the positive aspects of incubation in terms of access to physical amenities and also, the intangible advantages regarding image and credibility, Naimh certainly agreed that her business had benefited from such. However, she was aware that her gender signalled her out as different and accordingly, she was treated differently. To some extent, she put a positive 'spin' on this, finding advantages within more consensual negotiation styles and customer attitudes but was aware of being excluded from conversations, information exchanges and networking. To compensate for her 'lack of fit' within the incubator and a sense of alienation from 'boys talk', Naimh deliberately sought alternative networking opportunities with other female entrepreneurs. Yet, although Naimh referred to the benefits of such networks in terms of finding empathy and shared business values, there were no other SET business owners present with whom to share specific sectoral information and ideas. To some degree, networking with those outside of her realm of expertise contributed to Naimh's isolation in as much she made few attempts to access the networks within the incubator but, was not able to share sector specific issues with members of her women's network. Whilst Naimh readily acknowledged that her business could have grown more quickly, she felt this reflected her desire to maintain control of financial issues (avoiding the need for equity funding) and also, to enable her to have time for a 'presence' in her family life. However, it is likely that the business growth trajectory was constrained by her limited access to information and support from her entrepreneurial peers within the incubator. Quite clearly, Naimh had no issues with the quality of formal business advice she had been offered and it is difficult to assess the extent to which exclusion from tacit information and networking constrained progress. Yet, if such intangible advantages of incubator placement are considered to be highly positive for business growth and sustainability, it can only be logical to assume that the opposite, exclusion, would be detrimental.

Little attention has been forwarded to the impact of gender upon succession issues (Vera and Dean, 2005) so it was interesting to explore Naimh's plans. The business was viewed as a legacy for her children who already expressed interest regarding future involvement. Succession is at the heart of family business dynamics but the tensions and issues exposed within current literature very much reflect the patriarchal family order with the assumption that sons inherit from fathers with women making an 'invisible' contribution through practical and psychological support (Cadieux et al., 2002). In this case, Naimh was optimistic that her children would be involved with the business with no thoughts of difference between her son and daughter. As they were both still at school, their futures were very uncertain. A longitudinal study to assess the dynamics of succession in female owned firms would offer interesting insights into this particular process.

Conclusion.

Successive Irish governments have introduced a range of policy initiatives designed to encourage more people to start new firms. In particular, it is recognised that innovative entrepreneurial ventures within the Science, Engineering and Technology sector have considerable potential to create both wealth and new employment. Accordingly, business incubators offer such ventures ready access to business infrastructure, professional support and advice whilst enabling tenants to develop and share networks and gain credibility with potential stakeholders. Hence, access to and acceptance within an incubator is a considerable fillip to a new business and enhances durability and growth potential. However, a notable feature of business incubators, regardless of location or affiliation, is an absence of female entrepreneurs. The purpose of this paper has been to explore the reasons underlying women's exclusion from business incubators. Ostensibly, it might be argued that because of traditional gendered divisions which spill over from employment into self employment, women are less likely to begin new ventures within sectors particularly suitable for incubation. Therefore, whilst incubators are gender neutral sites of operation, women are structurally excluded as their enterprises do not 'fit'; as such, the problem does not lie with the incubator model itself. This argument raises a number of contentious issues. Drawing upon feminist analyses, it might be argued that a liberal approach which emphasises the need for equality of access and opportunity (Beasley, 2005) needs to be more rigorously pursued. In effect, women must be allowed to become 'honorary men' as this will enable them to translate their qualifications into career attainment equipping those who chose the entrepreneurial track with appropriate experience and resources to share the advantages of incubation. For this to be realised, time, equality regulation and sensitivity to 'family friendly' issues is required. This is a fragile argument given lack of progress to date in translating graduate attainment into career progression and/or entrepreneurial activity. Current programmes and initiatives to encourage women to engage with business ownership may eventually increase female entrepreneurial activity yet, this of itself will not necessarily spill over into high growth technology enterprises given the limited understanding of the tensions between sector culture and the reality of women's lives. Challenging a culture of masculinity is unlikely to emerge from regulatory change; the evidence for this argument is illustrated by persistent gender income disparity despite the enactment of equal pay legislation in the UK over 30 years ago.

Rather, greater consideration of post-structural feminist arguments which critically analyse the sexist construction of career and the hegemonic assumption under pinning narratives which shape our understanding of activities, such as entrepreneurship, need to be more closely debated. Within

this study, the fact that Naimh had to fight for a petty concession such as getting heating provided to suit her working day is a useful example. The importance of challenging structures and their exclusionary impetus can only be articulated through critical feminist debate which challenges masculine dominance and consistently presents women as outsiders to the norm. Business incubation has been used in this paper to illustrate this point. It is assumed that business incubators support and facilitate the growth of entrepreneurial firms but the extent to which women can benefit from what is, in essence, a masculinised environment is rarely recognised or explored. Consequently, women are largely invisible within an important support mechanism for growth oriented firms. Business incubators offer women training and assistance to become honorary men without ever challenging the fundamental values that underpin the barriers faced by female business owners in SET sectors or recognising the constraining influence of culture. Such initiatives assist women to accommodate their specific disadvantages whilst not addressing their source. It is not suggested that such supportive programmes should be abandoned but, greater recognition and value should be afforded to women's business performance and operating preferences whilst the 'feminising' of incubator requires greater visibility.

There is a great deal of scope here for further research. The masculine stereotyping of the incubator may discourage women to enter such an incubator, thus disadvantaging themselves with regards to accessing information and networks, so reducing sustainability and growth. As such, analyses of business incubation must take account of wider theoretical concepts associated with the specific circumstances of the self-employed individual and how this impinges upon the market position and perception of the firm.

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Table 1: Respondent Characteristics

Interviewee	Personal and business context
IT1 Naimh (pseudonym)	42years Degree in IT Previously employed for 15 years as a quality engineer in a Multinational Company Married to a University Lecturer Two dependent children Business is 8 years old Main product/service: provision of manufacturing optimisation systems Located in a Business Incubator since 2002 Employs 12 members of staff Annual turnover of £150,000 Expecting to grow 20% in terms of employment and turnover in next 5 years