Nesta...

Startup Support Programmes

WHAT'S THE DIFFERENCE?

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FOREWORD

Startups are an important means by which new ideas are brought to life – especially those ideas which challenge established industries or do not find ready support inside existing companies. They are core to the process of creative destruction and crucial for increasing employment. They exert competitive pressure on prevailing businesses, which drives improvements in productivity and prosperity. In short, the starting – and scaling – of new ventures is vital for innovation and economic growth.

As the UK's innovation foundation, Nesta has a long-standing interest in this field. The study of startups, accelerators and incubators forms a significant strand of our innovation research, complemented by practical support such as toolkits for entrepreneurs. We have sponsored several incubators and accelerators to learn about what works, and we invest directly in early-stage firms with growth ambition and the potential to create impact at scale.

This report is one of two commissioned by Nesta to describe the changing landscape of startup support. The past decade has seen a profusion of programmes offering to make the entrepreneurial journey less solitary for founders. As with startups themselves, many of these programmes are yet unproven; some will undoubtedly fail. However, by providing a clearer definition and analysis of the models in use, it is hoped that these studies will aid startups, policymakers and programme developers alike in navigating that landscape, and in finding sustainable models which help startups thrive.

Christopher Haley
Head of New Technology & Startup Research, Nesta

EXECUTIVE SUMMARY

This report addresses the question: **'How do support programmes fulfil different roles for startups within startup ecosystems?'**

To put it another way, terms used for programmes supporting startups include: **accelerators, coworking spaces, incubators, active seed investors, courses, competitions**.[1] But what is the difference?

In trying to answer this, this study interviewed over 30 practitioners, and undertook site visits to startup programmes operating in cities in high-income countries in Europe (Berlin, London, Munich, Cambridge), with the addition of Israel[2] as a close neighbour.

Information collected was reviewed to reveal dimensions by which startup programmes can be differentiated, including what programmes offer, who they target, and how they make money. By focusing on those dimensions that varied the most by programme type, we offer a proposition on how to tell the difference between programmes.

Two main dimensions emerged as useful differentiators: **how programmes make money** from startups and **when programmes intervene** in the startup journey.

With regard to the first dimension, we found programmes make money from startups through three main mechanisms, being: (1) growth driven – dependent on creating startups with rapidly growing valuations; or (2) fee driven – dependent on startup revenue so that regular charges can be made to the startup; or (3) income independent of the startup – funded by charges to individuals, or income from other stakeholders (investors, companies, public bodies etc.).

With regard to the second dimension, programmes relying on startup valuations tend to operate at later stages of the startup journey and have high selectivity (e.g. <5 per cent of applicants selected) and small numbers of participants. Programmes relying on regular startup income can flex to accommodate freelancers and lower growth startups. Programmes capable of operating independently of income from startups tend to operate at pre-startup and early stages of development with a high volume of participants. The exceptions to this model offer insight on the circumstances that enable deviation.

Why does this matter? This report makes a positive contribution in several ways:

First, this report helps provide some definitions and boundaries for terms. We argue that this is important because, without some clarity about the differences between programmes, their unique features and distinctive roles in supporting startups cannot be determined. We also believe that entrepreneurs are more likely to evaluate and compare programmes when typologies are clearer.

Second, the report provides a guide to navigating startup ecosystems. Our research shows how programmes use a variety of terms for themselves and others, which works well for those 'in the know' but is less effective when outsiders are trying to navigate programmes for startups.

Third, the research suggests there are links between how developed a startup ecosystem is and the ability of programmes to be successful. Our typology uncovers which programmes depend on a quantity of startups or a small number of startups with high-growth potential, as well as key stakeholders such as investors. However, we illustrate how programmes can overcome some ecosystem challenges by drawing on links with other startup ecosystems.

Overall we hope this study and the development of this typology supports the creation of more competitive and distinctive offerings for entrepreneurs, while enabling programmes to work together not just in local startup ecosystems but by forging links internationally.

Figure 1 **Abbreviated typology of startup programmes**

	GROWTH DRIVEN	FEE DRIVEN	INDEPENDENT
Startup Phase	Early to later stage	Startup to later stage	Pre-startup to early stage
Examples	• Active seed investors • Accelerators	• Incubator • Coworking	• Course • Startup weekend • Business creation competition • Hackathon
Risk profile if startup quality reduces	**High**	**Medium**	**Low**
Workspace	Optional, benefits include closer links with portfolio	Essential, but threshold size not apparent	Optional
Numbers of participants	Low (e.g. 6–12)	Medium (e.g. 50–150)	Medium – High (e.g. 50 to thousands)
Selectivity of participants	High	Medium	Low

1. INTRODUCTION

The recent burst of startup support, epitomised by the emergence of the 'accelerator' format, builds on a legacy of fashions and trends in the quest to find the best and most appropriate support mechanism. This has prompted us to ask the question: how do startup programmes fulfil different roles for startups in a startup ecosystem?

At the time of writing, accelerators form the most noticeable subset of programmes, both in terms of media interest and discussion among entrepreneurs. However, in what follows, we have used the term 'support programmes' broadly, to include active seed funds, business creation competitions, entrepreneurial training courses, coworking spaces and startup weekends as well as business incubators and accelerators.

Definitions matter, because without some clarity on the differences and boundaries between programmes, their unique features and distinctive roles in supporting startups cannot be determined. However, in such a dynamic market, how programme names are used by practitioners also evolves and definitions are more conceptual than prescriptive.

But is there relevance for practice in providing greater understanding about the role of different programmes? We suggest there is. For example, while accelerators have a valuable and distinctive role to play, the recent escalation has prompted people to ask if this is a bubble of hyper-inflated expectations and unlikely returns owing to saturation in the types of startups targeted. Hype in itself is not news, but it echoes concerns previously asked of startup programmes:

> *"...are incubators a fleeting phenomenon, born of an over exuberant stock market, or are they truly a valuable and enduring way of bringing startups to fruition?*
>
> **Hansen, Chesbrough et al., 2000**

Looking beneath the cyclicality, has the intensive burst of startup support since the great financial crash revealed new methods or distinctive features for programmes to assist high-potential firms? Context and history matter in answering that question.

For instance, incubators are now such an accepted part of the business support landscape that most regions in the developed world accommodate several, and the academic literature on their evolution and impact is voluminous. But incubators have existed for only some 50 years and came about through serendipity. The first emerged in Batavia in Western New York in 1959, where no single tenant for a dated, 850,000 ft^2 agricultural machinery building could be found. The building was sold for a reduced price to the Mancuso family. Joseph Mancuso gave up the search for a single tenant after he had the inspiration to rent portions of the building to smaller firms until they grew out of the space.[3]

Likewise, entrepreneurship has played an implicit role in functioning economies at least since the term arose in the 18th century, and so too have those who support entrepreneurs. This includes venturesome investors, prize competitions for feats of ingenuity, and facilities such as Menlo Park which provided a focus for Edison's creativity from 1876–1882.[4] But what is

unprecedented is our understanding of the role of entrepreneurship and the opportunities it spurs, and the ensuing range of programmes dedicated to supporting this activity – including several reviewed here. Many developed economies, ambivalent at best about entrepreneurship only a generation ago, now celebrate it as both the only means of endogenous growth and as a creative force in society.

Today's burst of startup support did not therefore materialise unannounced or without precedent. Nevertheless, the variety and range of programmes is exhilarating and calls for further insight into programmes – what the difference between them is, and how they work together.

In conjunction with the parallel work undertaken by Imperial College London, and other recent projects by Nesta including Good Incubation (April 2014), our research captures the current state of play by providing insight into the historical growth of the 'startup ecosystem' as well as facilitating discussion with regard to future infrastructure needs.

Report structure

This report includes the following sections:

- **Differentiating startup programmes** which explores the dimensions along which programmes can be differentiated. This includes what programmes offer, who they target, and how they make money.
- **A working typology** which focuses on those dimensions which seem to vary the most between programmes as a way to frame a typology of programmes, while acknowledging exceptions.
- **About the where and the when** where we discuss locational and temporal contexts that influence and impact startup programmes.

Research design

The main question we address in this research is:

'How do support programmes fulfil different roles for startups within startup ecosystems?'

This research used semi–structured interviews with a range of 'startup support programmes', including accelerators, coworking spaces, incubators, active investors, courses and competitions. For this research, startup was defined as 'a young, innovative, growth–oriented business (employees/revenue/customers) in search of a sustainable and scalable business model' Nesta.[5] Startup will be used interchangeably with venture.

To be selected, startup support programmes had the following attributes:

- Support startup ventures with high–growth potential, whether technology based or non–technology based.
- Offer business support intervention (i.e. not just passive space or investment).
- Access to financial support e.g. introduction, pitching opportunity, prize/grant, equity investment.

And where possible:

- Established for more than two years, i.e. have some performance measures.
- Operate in an internationally recognisable startup ecosystem (see Appendix).

For geographic location, we focused on startup programmes operating in cities in high-income countries in Europe, with the addition of Israel[6] as a close neighbour. Tel Aviv, London and Berlin are recognised in the top 20 entrepreneurial hot spots around the globe,[7] whereas Cambridge is often recognised as one of Europe's leading high-tech clusters. We had additional opportunities to visit Haifa and Jerusalem in Israel, and Munich in Germany.[8] Israel offers a striking example of a country overcoming a small domestic market and lack of accessible neighbourly customers by working closely with the US market, developing an international perspective from day one of the startup. However, such activities also raise questions about where value is captured geographically.

Purposive sampling, in addition to some snowball sampling, was used to select cases with sufficiently diverse characteristics to provide the maximum variation possible in the data collected. This method is valuable when exploring key themes and patterns and can offer particular insights when distinguishing typologies of activities.

We spent several weeks in mid-2014 conducting extensive interviews of programme managers in well-known startup ecosystems as well as in some up-and-coming ecosystems to explore how startup programmes fulfil different roles. Some 30 interviews were conducted in London, Cambridge, Berlin, Munich, Tel Aviv, Jerusalem, and Haifa. No single take on such a dynamic international scene can aspire to be comprehensive, but we contend that by aggregating and sifting the shared insights of over 50 practitioners both a usable typology and a nuanced sense of what works – and why – emerged.

2. DIFFERENTIATING STARTUP PROGRAMMES

This section explores the dimensions along which programmes can be differentiated. This includes what programmes offer, who they target, and how they make money. Only by evaluating what these dimensions are, and exploring how much they vary between programmes, can we start developing a typology of programmes.

Startup programmes that use the same name category (e.g. accelerator, coworking space etc.), do not always share the same characteristics. This is in part because the terminology used for different startup programmes is evolving, not always capable of precise definition and therefore inconsistent in its application (Dee, Gill et al., 2011). Further complications arise through the insertion of pre and post, such as pre-accelerator, post-incubation. Hype also plays a role. Some programmes have been relabelled as 'accelerators' while lacking many critical features implicit in the term.[9] For instance, the UK-government supported 'GrowthAccelerator' service,[10] aimed at those firms with the ability to grow 20 per cent year-on-year, includes at most half of the six features often considered key for accelerator programmes.[11] The accelerator bubble may be more an overuse of the term than the concept. Thus, we became wary of how some programmes labelled themselves and sought a fresh perspective.

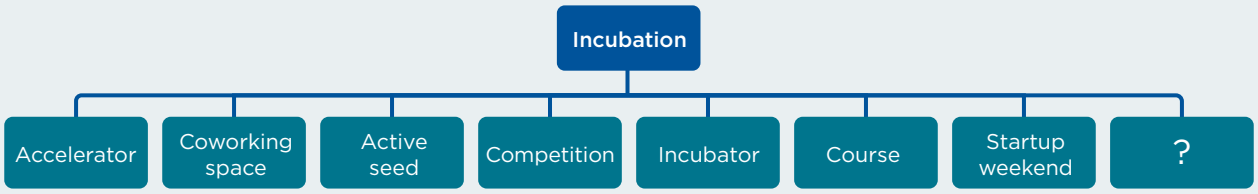
We suggest that 'incubation' has become a problematic term to define due to the variety of models it now encompasses. Indeed the variety of terminology being used is perhaps evidence enough of the different types of incubation programmes. Hackett and Dilts (2004b) define business incubation as:

> *"...a shared office-space facility that seeks to provide its incubatees with a strategic, value-adding intervention system of monitoring and business assistance.*

As might be expected, most programmes describe interventions in startups (or incubatees) that are designed to add value to the startup journey (e.g. mentoring, networking, training etc.). These activities are usually convened through a shared facility that can include both on and offline interactions. We therefore identify 'incubation' not just as the services provided by a self-identified 'incubator', but rather as an umbrella term for a range of startup programmes (Figure 2), a view shared in a recent report by Nesta (Miller and Stacey 2014) which describes incubation as:

> *"a collection of techniques that can be used to prove an idea, develop a team and de-risk ventures for later-stage investors. It happens in accelerator programmes, co-working spaces, social venture academies and learning programmes, competitions and through the work of very early-stage investors.*[12]

Figure 2 **Incubation**



Startup programmes will be explored for similarities and variations across numerous dimensions in order to identify patterns that can underpin a typology. When we view startup programmes, we find they vary along dimensions across three broad areas:

- **What programmes offer:** networks and business support; workspace; access to finance.
- **Who programmes target:** selection process; startup stage; sector.
- **How programmes make money:** making money from startups; revenue from other stakeholders; cost arbitrage; beyond the business model.

What programmes offer

Networks and business support

During our interviews, not one interviewee claimed to lack business support or access to networks as part of their programme. This makes programmes challenging to distinguish by viewing these dimensions alone. Nonetheless, there are clear differences in the style and substance of support and networking provided, as well as contrasting opinions on the value of specific interventions in the startup journey.

Generally entrepreneurs were seen as having the following needs:

- Personal development e.g. confidence building.
- Professional development.
- Solving specific business challenges and issues.

These needs tended to be met through access to mentors in addition to programme managers, external experts and peer support. Of particular note is the role of mentors, with many programmes emphasising the value of accessing experience from individuals with prior business and startup successes. Some programmes highlighted the number of mentors to whom they had access; others emphasised the quality of their mentor networks. All agreed that the matching process between mentor and entrepreneur was a key activity often undertaken by the programme. Mentors can become integral to the startup or so engaged in their progress that the relationship continues beyond the life of a programme as mentor, consultant, board member or investor. The degree of proactive versus reactive intervention by mentors and other experts depends on the startup programme and the individuals involved.

Overall, offering mentorship was seen as a positive activity. Plus Ventures, an Israeli VC, emphasised their additional effort to provide proactive and regular mentoring and support relative to other investors. This was deemed a sufficient value-add to justify a discount on valuations for investee companies compared to other investors. NESTech targets entrepreneurs with less educational and business experience relative to other programmes and therefore viewed mentors as particularly important. However, 'more mentors' does not always mean more value. When Entrepreneur First (EF) started, it invested much time and effort in building a mentor network that afforded its ventures more than one mentor. Three years later, it has adjusted its formula for mentoring as entrepreneurs became indecisive when faced with competing advice from multiple mentors.

Peer–to–peer networking was seen as an effective learning mechanism since, as one investor put it, 'everything you touch, someone has done it before' – thus dispensing with the need to learn from scratch. Peer networking was deliberately encouraged through the design of workspaces in addition to events. An additional benefit of colocation with peers was that failing startups could provide valuable human resource to growing startups, as emphasised by Entrepreneur First.

It can be challenging to evaluate the quality of mentoring and networking from outside a programme, but it is easier to determine whether support is time limited or flexible. It has been suggested that time limited support (three to six months) is part of a range of features that typify the accelerator programme (Miller and Bound 2011). While this was a feature of many accelerator programmes interviewed, it was not exclusive to accelerators.[13] Business creation competitions tend to offer similar time–limited programmes, as do courses. The value of such time–limited programmes seems to be organisational efficiency, a sense of urgency as well as a feeling of camaraderie and peer–to–peer learning from being in a cohort which is aided by working in close proximity to one another. However, Hub:raum accelerator has abandoned this style in favour of a rolling programme, in reaction to being unable to engage with startups whenever the opportunity arises. Entrepreneur First was also evaluating the benefits and disadvantages of rolling versus fixed–time programmes.

In addition to such considerations of timing, programmes also vary in their application of mandatory versus optional components of business support. For example, the Berlin Startup Academy requires entrepreneurs to attend training two days per week, as do many courses. Betahaus offers numerous events and training which are optional and open to all (Figure 3). While having more flexible arrangements has advantages for entrepreneurs, some managers noted that entrepreneurs tended to favour working on their startup rather than taking advantage of training even when needed.

Startups also regularly require professional services (for instance legal and accounting advice), though access to such services varies widely. Many programmes (e.g. St John's Innovation Centre) will include professional service firms within the networks to which startups are exposed, though some managers have suggested that onsite location with the startups can create a form of 'choice editing' which can be limiting to startups. Jerusalem Venture Partners had an alternative perspective: it provides book–keeping, legal, HR and similar assistance to incubatees as these 'commodities' are seen as distractions from the more unique aspects of each startup. Hub:raum mentioned having a dedicated HR person, in reaction to team and HR challenges commonly experienced by startups.

Figure 3 **Betahaus Event Board (June 2014)**

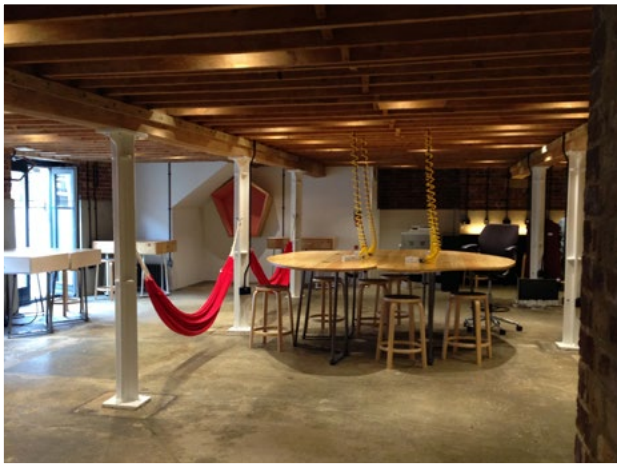
In summary, while programmes may all offer business support and access to networks, there are variations in whether this is offered in a proactive or reactive manner, time–limited or rolling, includes mandatory and/or optional components, uses paid or voluntary mentors and services, and is full or part–time for participants. Recognising variations in business support is relatively uncontentious; more challenging is evaluating the quality of that support other than from recommendations and reviews from other startups. And as a dimension for distinguishing between startup programmes, the nuances in support tend not to reflect different categories of programmes.

Workspace

Many of the startup programmes use workspace as a means to convene people, both on and offline. Physical space often included:

- Permanent workspaces
- Temporary workspaces
- Workshop/event spaces
- Meeting rooms
- Play and common room areas

Figure 4 **Entrepreneurs First in WorkSpace London**



Access to high–speed internet, e.g. fibre optic, was cited as essential in many facilities. The large campus at the Factory in Berlin also includes a gym facility, basketball court, and 'device playground' where tenants can experiment with tablets, wearables and other devices for developed and developing markets. In Germany, the foosball table seemed to be a staple of most workspaces, with hammocks (Figure 4), beanbags, gaming and phone booths found there and elsewhere. Where programmes are associated with universities, other facilities can often be made available e.g. labs at Humboldt, rapid prototyping at UnternehmerTUM. Even those independent of a university could offer additional facilities e.g. IZBM allowed free access to lathes, drilling machines. Increasingly we found 3D printing tenants willing to lease their equipment to other colocated tenants (e.g. Betahaus, Humboldt, NESTech).

Access to finance

Access to finance is another near–ubiquitous feature, though with notable variations in how this is delivered across various programmes:

- Access to investors through networking.
- Introductions to investors through programme.
- Pitching for a pre–determined prize.
- Pitching to investors at demo days, often organised by the programme.
- Direct access to finance through a programme.

General networking can offer access to investors if dosed with luck and initiative. Occasionally programme managers will make introductions to investors when a match is evident. This can occur in an incubation or coworking space, but is not an expectation of being in the workspace. The 'pitching opportunity' used to be a mainstay of business creation

competitions, with some inviting business angels and venture capitalists to sit on panels.[14] Accelerators have introduced the term 'demo day' as a similar initiative where the end of a programme is celebrated in an event at which ventures pitch to guest investors, though no guarantee of investment is made. Other programmes offer a competitive pitching opportunity to access a predetermined prize amount.[15] For example, the Unilever Sustainable Living Young Entrepreneurs Awards offers seven individuals under 30 access to a share of €200,000 of financial support and individually tailored mentoring; CU Entrepreneurs has numerous £5,000 prizes on offer, in addition to training.

Accelerator programmes and active seed investors are most associated with direct access to finance, often in return for equity, or occasionally a percentage of future revenue. Investment can have spending restrictions: for example, many accelerator programmes will give entrepreneurs a stipend out of this investment (Table 1). Other accelerators have an intermediary stage where they offer a fixed investment through the programme after some developmental time.

Table 1 **Examples of finance from accelerator programmes**

	Location	Accelerator	Stipend	Follow on funding	Equity	Example two-founder startup
Entrepreneur First	London, UK	4 months	£1,000 per person per month	£10,000	~8%	8% for £18k investment and access to training and networks
Berlin Startup Academy	Berlin, Germany	3 months	Each founder pays €1,000	Networking	4%	4% for access to training and networks
UpWestLabs	Israeli startups, programme held in California	4 months	~ $10k plus $5k per founder	Demo day	~8%	8% for $20k investment and access to training and and networks

N.B: These figures can be negotiable and therefore are for guidance at the time of print.

Incubators in Israel also offer direct investment under their government scheme, but it is specific to Israel and investment is at a later stage in the startup journey (Figure 13). The Israeli incubators offer bigger investment, through an incubator-run fund, in return for a much larger equity stake. NESTech is an Israeli incubator funded privately but modelled on the Israeli public incubator programme.

Added value of entering serial programmes

The majority of programmes had a deliberate emphasis on first-time founders. Our prior research shows the significant difference between the needs of first-timers versus serial entrepreneurs (Dee et al., 2011). Nonetheless there are numerous examples of entrepreneurs entering more than one programme. We asked interviewees whether they saw advantages for founders in graduating from a number of programmes consecutively. Answers fell into two categories. Some considered that new experiences invariably provide enhanced learning opportunities. Others echoed the adage that it is not the letters after a graduate's name that matter, but the letters after the letters after their name. In other words, attending a second or third programme is only an advantage if prestige and contacts increase as a result.

Who programmes target

Selection process

For some programmes, the emphasis was on the number of participants for courses, or tenants for workspaces (e.g. incubators and coworking spaces). StarTAU highlighted that 3,000 students had attended its entrepreneurship course over the last three years.

It is perhaps not surprising that programmes with a successful track record were able to be highly selective of startups. Jerusalem Venture Partners mentioned that its ability to be discriminating had increased over the years as awareness of its successes grew, leading to 10–20 per cent more applications each year. For investors and accelerators, 1–5 per cent of applicants were typically selected for investment, with up to ten investments expected per year or cohort.

Startup journey

Many programmes identify what type of ventures they wish to work with, with managers using different classification schemes for development stages.

We harmonised these through reference to one classification scheme, which draws on the business model canvass (to include pre-startup activity) and the British Venture Capital Association (BVCA).[16] Even though stages are presented as part of the startup journey, numerous iterations are expected, which may mean stages are not passed through with equal emphasis nor always sequentially.

Pre-startup:

- Aspiration stage (I want to be a founder/entrepreneur).
- Intention stage (I will become an entrepreneur).
- Business Model Discovery (I've discovered an issue I'm passionate about solving – problem, solution and product market fit validation) – can include development of business plan, pitching deck, prototypes, early market testing.

Startup: Financing provided to companies for use in product development and initial marketing. Companies may be in the process of being setup or may have been in business for a short time, but have not yet sold their product commercially. (*"We've got the business model sussed, now we need to build an organisation to delivery it."*)

Early-stage venture: Financing provided to companies that have completed the product development stage and require further funds to initiate commercial manufacturing and sales. They may not yet be generating profits.

Late-stage venture: Financing provided to companies that have reached a fairly stable growth rate; that is, not growing as fast as the rates attained in the early stage. These companies may or may not be profitable, but are more likely to be than in previous stages of development.

Figure 5 **Startup journey**

Sector focus

The majority of startup programmes currently have a strong emphasis on digital sectors such as cyber security, games, Internet of Things (IOT) or mobile. None of the programmes we interviewed excluded digital, and some were exclusively focused on digital e.g. Plus Ventures, Rocket Internet, The Time, SOSA, UpWestLabs, Werk1 and Hub:raum. Those that mentioned 'hardtech' investments typically mentioned a strong digital component. This is perhaps not surprising when digital investments are leading exits in terms of valuations, even though medtech IPOs outnumbered digital in the US in the first quarter of 2014.[17]

Very few programmes felt they were in a position to support medtech, which is viewed as capital intensive and slow to market:

> *"It will be hard for us to help a medical device startup gain significant momentum in four months*
>
> **Gil Ben–Artzy, UpWestLabs**

> *"...we don't invest in hardware as we don't have deep enough pockets, and would end up with a fraction of equity. We want to create companies really quickly and get an exit or sale in two years.*
>
> **Nimrod Cohen, Plus Ventures**

However, Xenia (a publicly–listed investment firm with incubator space) has an intentional focus on both medtech and digital. Medical companies are slower to reach maturity, but the market is viewed as more stable. Xenia acknowledged that this dual focus can stretch its capabilities, but also helped balance risk across the portfolio.

Opinions differed on whether to focus on B2B or B2C ventures, and some managers suggested additional categories such as 'B2startup' i.e. where a startup's initial customers are other startups. The majority had a focus on B2B; 90 per cent of Hub:raum's startups were B2B. Rocket Internet is a notable exception: 70–80 per cent of its startups were B2C.

Rocket Internet is also an exception in that:

> *"We have a platform for new internet firms around the globe. We are looking for proven business models. Around ~5 per cent is developing new ideas.*
>
> **Andreas Winiarski, Rocket Internet**

These proven business models are often applied to emerging markets, where the concept is new to that location rather than to the world.

How programmes make money

Making money from startups?

The challenge for any programme, space or service supporting startups with high-growth potential remains the same – 'how do you charge a startup/client that has meagre resources today and may never make money?' Startups may well have the ambition to become a thriving business, but long-run data show that success tends to be the exception rather than the rule, especially when the focus is on high-risk/high-reward firms.

Risks and resource constraints limit the business model options available for startup programmes. Revenue that is dependent on the startup must usually be flexible (e.g. rent, membership and service fees), or incur delays in payment as they are driven by startup growth (e.g. equity, per cent of earnings).

Figure 4 **Cafe and bar at SOSA, Tel Aviv, Israel**

At its most basic, a startup programme must generate enough revenue to sustain its own operations. This condition is inflexible and therefore offers an opportunity to distinguish between programmes based on their fixed dependencies on certain sources of income. We found three broad categories which capture how programmes generate income from startups:

- **Growth driven** – programme is dependent on growing the startup as it generates revenue from equity, a share of earnings, or by appealing to entrepreneurial investors like business angels and venture capitalist.
- **Fee driven** – programme is dependent on taking regular fees, e.g. monthly, from startup. This can include member and service fees as well as rent.
- **Independent** – programme does not rely on income from startups but seeks other revenue from sponsors, public funds, events, catering etc.

The business model of the startup programme creates dependencies on parties in the business ecosystem. For example a fee-driven model requires access to a sufficient number of paying tenants, whereas an equity-based model depends on access to startups with high-growth potential. Conversely, the fee-driven model requires affordable space and the growth-driven model will usually need access to co-investors as well as exit options.

Revenue which is independent of the startup may be secured through dealing with other parties who find value in: securing investment deal flow (e.g. business angels and venture funds); new clients (e.g. service providers); new insights and innovations (e.g. corporates); and economic development (e.g. public bodies). Where programmes are associated with physical space, additional revenue opportunities arise from events and catering.

Figure 7 **Summary of revenue options**

CHARGE THE STARTUP	OTHER REVENUE
Rent	Sponsorship
Membership fee	Public funding
Service fee	Introduction fees
Equity	Events and catering
% of earnings	

Cost arbitrage

It was evident that many startup programmes were able to secure a facility or service below market prices and leverage this advantage to supply additional services to startups. IZBM, an incubator in Berlin, receives 100 per cent of its income from rent. While normally this would heavily constrain its ability to provide additional services to startups, IZBM was able to secure public funding to convert its buildings into incubation space, which now subsidises the cost base and enables it to offer consultancy to startups for free i.e. an added-value above a pure real-estate proposition. Humboldt Innovation is able to access university real estate at low cost, having taken the initiative to find an empty building (an approach similar to that of StarTAU in Tel Aviv University). Others searched for abandoned or under-utilised space and/or space in run-down areas which allowed cheap rent relative to more developed or upmarket spaces (e.g. SOSA in Tel Aviv, Betahaus in Berlin or Werk1 in Munich). Entrepreneur First in London has been able to secure an arrangement with WorkSpace to use the coworking space for free, in return for being able to offer a stream of potential tenants to WorkSpace at a future date.[18]

In addition to space, many programmes rely on varying degrees of goodwill from an extended network of experts. For example, some programmes pay mentors whereas others expect either goodwill or other perceived benefits to incentivise involvement (e.g. exposure to new ideas and entrepreneurs, potential to invest, opportunity to be involved in startup). While this used to be more common, it was also evident that the majority of programmes are investing in their mentor network and paying for at least some of the time provided by their network of experts. Investors who engage in a high degree of mentoring included this as part of their daily activities as their interests are closely aligned with those of the startup. Humboldt Innovation provided one of the most unusual examples of creative funding: sales of branded university merchandise (sweatshirts, folders, mascots) help provide an income used on services for entrepreneurs.

Beyond the business model

Beneath the many differences of name, business model, sector, stage and location, another theme emerged. Many programmes have what might be expressed as 'enlightened self-interest' or a desire to assist entrepreneurship as a tool to benefit society at large, but in a disciplined way that goes beyond philanthropy and retains a defining commercial edge. Whilst this is not quite the same as social venture incubation (cf. Miller and Stacey 2014), there is a related desire to achieve social impact.

For instance, NESTech in Haifa, Israel, is a private – not public – sector initiative, founded by a biotech entrepreneur[19] in partnership with professional service firms and aimed at bringing under-represented demographic segments into entrepreneurship, including Jewish ultra-Orthodox, Arabs and poorer communities such as those of Ethiopian descent:

> *If we can promote the success of one Ethiopian venture, then this acts as a lighthouse for others. And these entrepreneurs return to their communities and strengthen these communities and provide a role model. So others can dream of being an entrepreneur and having a business.*
>
> **Ayelet Ben Arav, NESTech**

In contrast, The Junction and SOSA were founded in adjacent buildings in a rundown area of south Tel Aviv,[20] which is stimulating further regeneration of the area while benefitting from cheaper space. Both have the backing of major venture firms (with support from other private-sector sponsors) to help early-stage firms reach their full potential – but without the strings or 'restrictive covenants' that might be expected from private investors. The Junction describes itself as having a 'pay it forward' acceleration model.[21] Similarly in Berlin, the Factory is a startup space which is located in a refurbished brewery next to the former Berlin Wall (Fig 8). Google has its European headquarters in Hamburg, and engineering centre in Munich, yet has been focusing effort more recently on Berlin, including sponsoring the Factory through its Google for Entrepreneurs programme. This is already stimulating other regeneration projects in the area. In addition to space, many offer their time to informally support entrepreneurs, and some also commit other resources e.g. the creation of Startup Stadium by Canaan Partners (investor) to build networking between Tel Aviv startups.

Most of the people interviewed had some recognition of the need to support the overall startup ecosystem in addition to commitments needed to run their own individual programmes. One of the most dramatic examples was in Jerusalem, which historically has been much less promising entrepreneurial soil than Tel Aviv, with far fewer startups, less dense professional networks, fewer investors, a far more conservative social climate and deep-seated political challenges. But one of JVP's founders (Erel Margalit) is a member of the Knesset (Parliament) whose committee responsibilities include SMEs, integrating the ultra-orthodox in the high-tech sector and employment for Arab Israelis. The Media Quarter can be seen as a private sector initiative to put all of these tasks to the test, bringing in other ecosystem players at the same time.

Figure 8 **The Factory, Berlin**

© The Factory, Berlin.

3. A WORKING TYPOLOGY

As indicated in the previous section, some dimensions of startup support seem to vary between programmes more than others. Furthermore, some dimensions appear optional across a variety of different programmes, rather than being specific to any one type of programme. Yet to develop any meaningful typology it is important to distinguish between optional versus (more) essential features of different types of programmes.

In Section 2 we identified three dimensions of variation for startup programmes. In this section we propose to condense these into two fields which seem particularly relevant when making initial propositions about how startup programmes differ: which phase of the startup journey they target and how programmes make money.

Differentiation based on startups targeted

Based on information collected during interviews, it is possible to identify where most programmes focus their activity in terms of the startup journey (Figure 9):

Figure 9 **Programmes by startup stage**

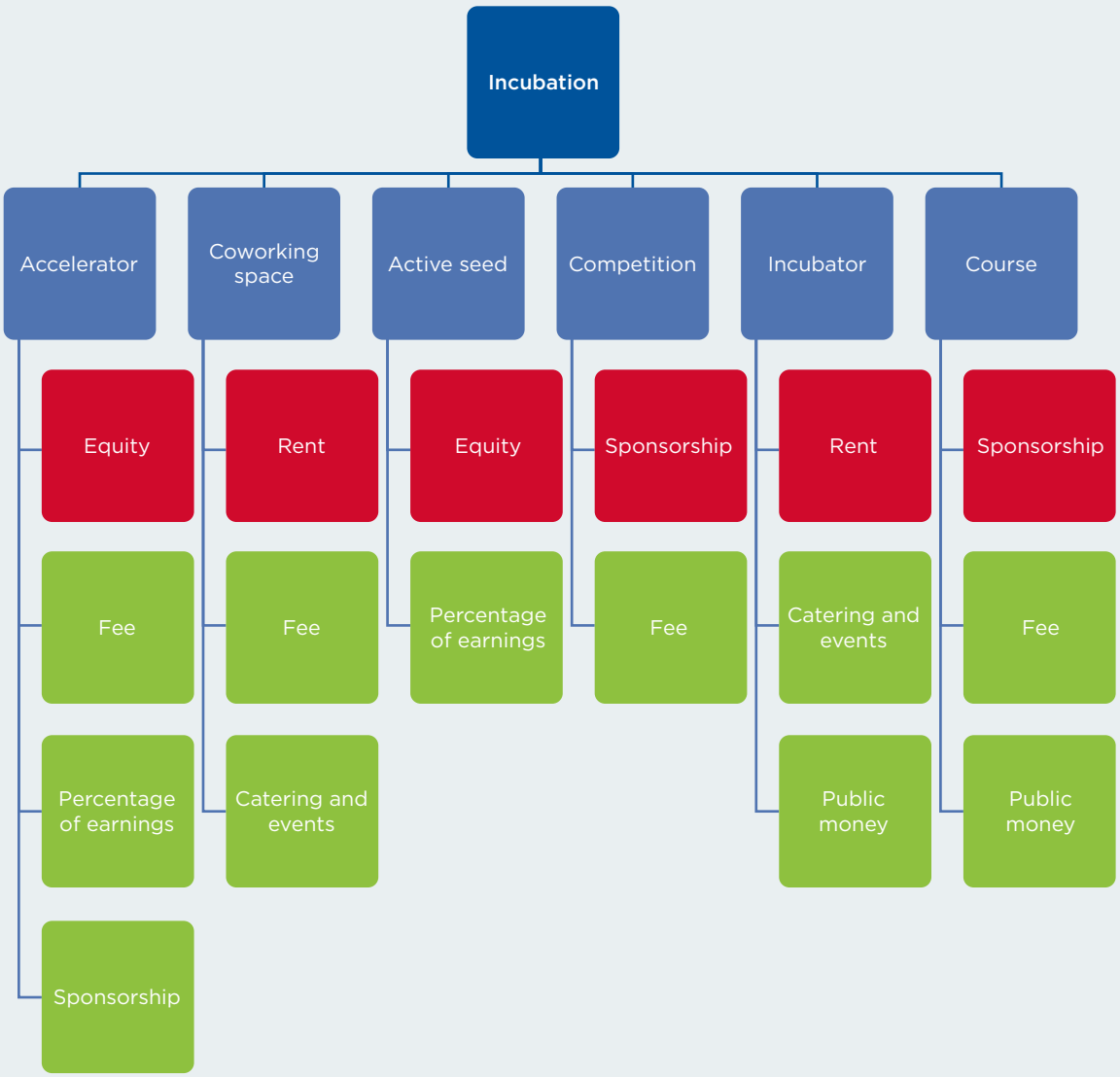
		Course	Startup Weekend	Coworking space	Competition	Accelerator	Incubator	Active seed
Pre-startup	Aspiration							
	Intention							
Startup	Business model discovery							
Early-stage venture								
Later-stage venture								

N.B: Darker colour indicates areas most commonly associated with a startup programme, lighter indicates common areas and white is uncommon

Differentiation based on how programmes make money from startups

The ways in which different startups programmes make money from startups are summarised in Figure 10. The boxes in red indicate the most common source of revenue from startups under each programme.

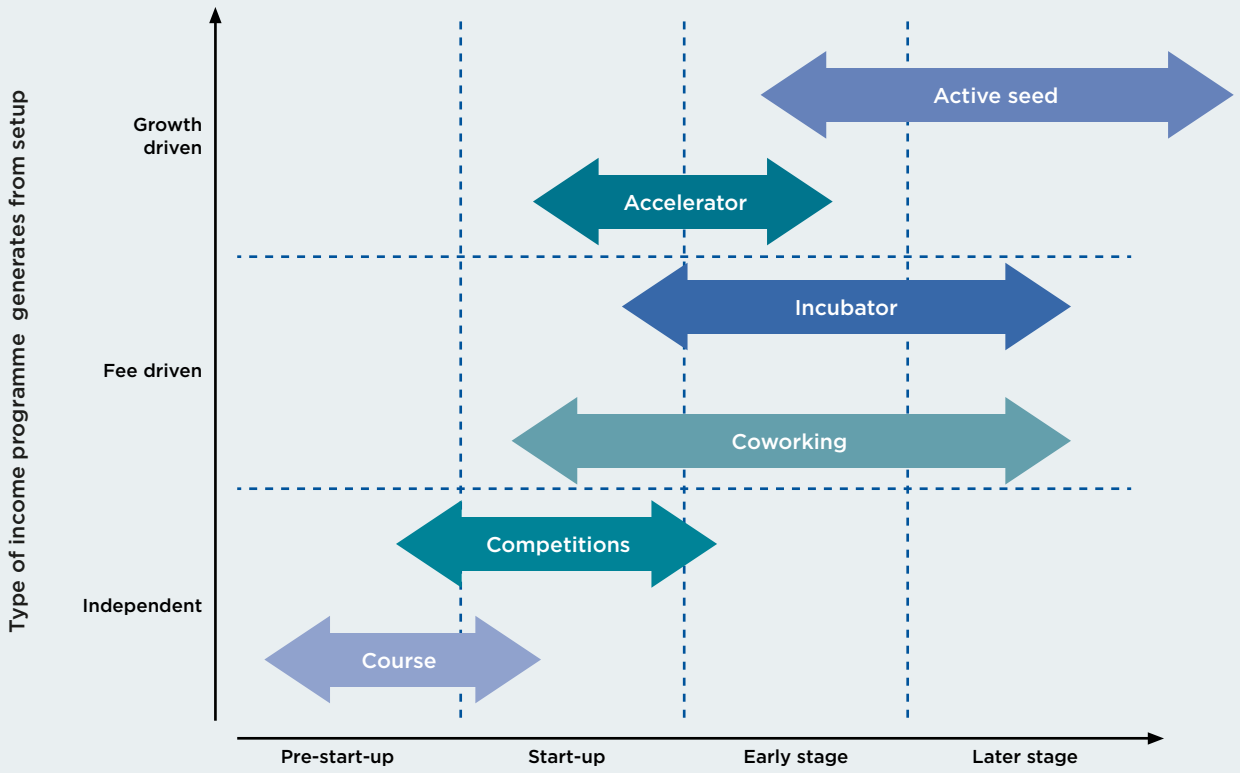
Figure 10 **Key sources of revenue for startup programmes**



A working typology

By combining stage of startup with the revenue secured from startups we can start mapping various startup programmes relative to one another (Figure 11):

Figure 11 **Typology of startup programmes**



Exploring Figure 11 affords other insights. Where investors and programmes have a business model that is reliant on the value of equity from startups, it follows that they must have access to startups with high-growth potential and the means of achieving this. However, as income from equity will be delayed by several years, investors and programmes must also have access to capital upfront. The ability to access capital will be affected by location as well as prospects for future returns which in turn are influenced by a programme manager's track record in spotting talent and building ventures, and the likelihood of securing a future exit (which again is likely influenced by location).

Incubators and coworking spaces typically charge rental or membership fees in order for companies to gain access to space, facilities, networks and services. This automatically creates a tendency for these programmes to work with ventures that already have revenue from which monthly fees can be extracted without harming the business, or ventures that have received investment (or grants) and therefore have money in the bank. Coworking spaces have developed innovative charging options to offer more flexible agreements and new payment options where 'you only pay for what you need'[22] (Figure 12). This innovation has also been appealing to freelancers as well as startups: Betahaus described how startups and freelancers could make a productive pairing, with freelancers who were keen to 'break into startup mode' being able to access ideas and support, and with growing startups being able to outsource work to freelancers or bring them into the startup.

Incubators tend to have less flexible arrangements than coworking spaces, and prefer tenancy agreements. Once the most flexible rental option for startups, incubators are now more likely to be seen as the next step after a coworking space, when the startup needs secure dedicated premises with room for growth, as happens in Cambridge with ideaSpace (coworking) and St John's Innovation Centre (incubator). The coworking space has an additional benefit in being able to operate like a gym membership, in that it is expected that not all members will access the space at the same time. This allows them to take on more members in aggregate than the space can hold at any one time. Conversely, an incubator space has a finite amount of room and must turn away potential tenants when full, and may become vulnerable when unable to operate near capacity as this model has high fixed costs. To mitigate this risk, many incubator spaces have one or two anchor tenants who outstay the usual tenancy period but who provide stable income to compensate for the potential high turnover of other tenants.

The Factory in Berlin describes itself as a campus, as it is trying to offer value to startups at all stages of their journey (from those needing a desk to office space over 1,000m^2). This has required securing finance for the largest building dedicated to ventures that we visited during our research. It is perhaps not surprising that their first task was to locate anchor tenants (including SoundCloud), who could help mitigate the financial risk for those investing in the premises, while also lending kudos and the potential of mentors and support to startups. The challenge for any such space will be how to create a balance between mature and nascent startups, as the former offers more reliable income opportunities in fewer transactions.

Figure 12 **Example of flexible charging options in a coworking space – Betahaus**

Betahaus Pricing (Berlin, October 2014)
Flexdesk Open End Membership
• 5 days @ €59 per month • 12 days @ €89 per month • Full time @ €159 per month
Extras
• 24/7 access @ €25 per month • Mailbox @ €25 per month • Coffee flatrate @€25 per month • Meeting room access @ €25 per month • Locker @ €25 per month
Dedicated workspace
• Various options

Those programmes that do not need to rely on startups for income must provide value which is evident to others who will pick up the cost. Individuals were sometimes charged, especially in the case of courses. Alternatively, it was common for funding to be offered by corporates, investors, professional services and public funds.

Hub:raum (a Berlin–based corporate accelerator) was conscious that, regardless of how well its startups did, funding depended on Deutsche Telekom continuing to find the activity of sufficient strategic value. This in turn required individuals in key positions inside Deutsche Telekom to remain engaged, despite staff turnover. The Unilever Sustainable Living Young Entrepreneurs Awards are deliberately aligned with the Unilever Sustainable Living Plan, which is central to the company's overall business strategy. The importance of young entrepreneurs in the company's value chain is identified as a specific target within this Plan. Because of this alignment, the Awards are championed by Unilever's global CEO and members from the executive team, which has ensured a long–term commitment to doing the Awards as well as enabling opportunities (beyond funding and mentoring) for entrepreneurs to work with Unilever and the Award partners: the Cambridge Institute for Sustainability Leadership and Ashoka. The prize event, supported by His Royal Highness The Prince of Wales, also provides a means to engage with members of the sustainability, business and startup communities.

The business creation competition (BCCs), once more commonly known as the business plan competition, is a format that emerged and grew in popularity during the 1990s. It was most often associated with universities which used the format as a means to engage students in entrepreneurship. But as some of our interviewees mentioned, 'investors don't read business plans anymore'. This statement typically applies to digital businesses, and does not replace the need for some way of communicating the founders' idea, whether through demonstration and/or pitch deck. Today, business creation competitions (BCCs) have proved themselves to be a flexible tool capable of meeting a variety of agendas. Cambridge University Entrepreneurs (a student society) has been acting as a focal point for the universities entrepreneurial community since 1999, and was originally modelled on the MIT$50k competition of that time. This is in contrast to the same mechanism being supported by the World Bank, Department for International Development (DfID) and Nigerian Ministry of Finance to create YouWiN! to combat youth unemployment in Nigeria. In its third year, the competition attracted over 125,000 entrants, trained around 5,000 individuals, and awarded prizes to 2,000 entrepreneurs with new or existing enterprises. And numerous corporates, like Unilever (above), have developed competitions around the BCC concept, often with training, mentors and prizes.[23]

BCCs seem particularly well suited to adaptation by large institutions such as corporates, universities and government departments. The mechanism offers a chance not just to identify potential winners, but also to go through a staged selection process which tends to be more structured than that used by most accelerators. In turn, the BCC does not simply identify winners, but also highlights trends illustrated by entrants. The prize event becomes a critical means by which experts and key stakeholders can convene and demonstrate their support for entrepreneurs – essential for continuing sponsor engagement. In universities, the BCC also complements fixed term–times. Typically the BCC will integrate with courses on entrepreneurship designed to inspire and provide basic skills. Without a BCC, the course can feel like an abstract exercise, especially when it is extracurricular and unaccredited. With the BCC the output is more focused on producing startups and competing in the market. In contrast, accelerators are judged by the returns they generate (if equity based), or deals struck (if a demo day marks their end point), and therefore focus on startups that are able to rapidly develop to early commercial activity during the programme.

Where corporates run accelerators rather than BCCs, the expectation is that the startups produced will end up working with the corporate and/or be part–owned by the corporate, e.g. Axel Springer, Hub:raum. In Israel an alternative model was mentioned and exemplified by the Microsoft Ventures Accelerator,[24] where no equity is taken but ventures are offered free access to Microsoft tools such as the Windows Azure Cloud platform. While this is not enforced, it is an opportunity for Microsoft to assess how entrepreneurs engage with their tools while also securing potential future clients.

We outline propositions on the link between how programmes make their money from startups and how this impacts a programmes structure in Table 2.

Table 2 **Summary of key dependences of startup programmes on startup performance**

	GROWTH DRIVEN	FEE DRIVEN	INDEPENDENT
Startup Phase	Early to later stage	Startup to later stage	Pre–startup to early stage
Examples	• Active seed investors • Accelerators	• Incubator • Coworking	• Course • Startup weekend • Business creation competition • Hackathon
Risk profile if startup quality reduces	High	Medium	Low
Workspace	Optional, benefits include closer links with portfolio	Essential, but threshold size not apparent	Optional
Numbers of participants	Low (e.g. 6–12)	Medium (e.g. 50–150)	Medium – High (e.g. 50 to thousands)
Selectivity of participants	High	Medium	Low
Performance measures	IRR Valuations Funds raised Time to exit	Area of workspace/number of rooms £s/m2 Number of tenants Capacity ratios Turnover of tenants	Number of participants Number of new ventures established Hours of teaching Winners and prizes
Freelancers	None	Some	Some
Reliance on startup ecosystem and business environment	Access to startups with high–growth potential. Access to finance for the programme to plug the gap before returns can be secured.	Access to affordable or subsidised space. Access to enough startups to meet capacity or memberships.	Fees from individuals rather than startups, which may mean being near or part of colleges and universities. Attractiveness of programme is linked to prior outcomes and speakers by association with a startup ecosystem or directly.

Interesting exceptions to this typology

It is useful to have generalisations that apply broadly to categories of startup programmes, but exceptions abound especially in a constantly evolving field.[25] However, only by recognising some general ground rules do we start to appreciate what these exceptions are doing and possibly where new trends may arise. The three examples given below have some unique features that may underline their ability to deviate from Figure 11 and Table 2:

How far can a course go? Postgraduate Diploma in Entrepreneurship

There are several examples of University driven courses on entrepreneurship, many with a strong academic component. Prominent examples include: the MSc in Technology Entrepreneurship from University College London; the MSc Innovation, Entrepreneurship and Management from Imperial College London; and the IDC ZELL program[26] at the Adelson School of Entrepreneurship in Israel, now in its fourteenth year, which was funded by renowned entrepreneur Sam Zell of Chicago.

However, one example that challenges the typologies in Figure 11 is the Postgraduate Diploma in Entrepreneurship at the University of Cambridge. The University of Cambridge is one of the world's leading universities[27] and the city is associated with a well-regarded startup ecosystem, which helps significantly when attracting talent. The Diploma course is a praxis-oriented programme designed specifically for entrepreneurs to nurture their entrepreneurial ambitions and enable new ventures through an academically rigorous but practical learning experience. It is this focus on selecting entrepreneurs already with startup ideas that distinguishes it from many other courses. It includes the opportunity to network and engage with experts, mentors, and peers.

To make this possible it is run on a part-time basis (four workshops and online delivery) and takes place over 12 months, leading to the qualification of Postgraduate Diploma in Entrepreneurship. This course is focused on entrepreneurs typically in the business model discovery phase with the expectation that they develop to an early-stage startup during the 12 month course. The course has grown in popularity demonstrating its value to entrepreneurs regardless of the ~£12,000 fee.

Startup Clinics – data as a form of currency

Startup Clinics are another variation on the academic model. One example is found at Humboldt University – which also features in the world's top 100 leading universities and has a strongly emerging startup ecosystem; perhaps as important is the uniqueness of the Institute for Internet and the support of Google which also creates links to other startup programmes

The Clinics are run by a transdisciplinary group of researchers who seek data in return for offering expertise to entrepreneurs. This knowledge has value to academics, who leverage it for research funding.

Figure 13. **Alexander von Humboldt Institute for Internet and Society**

The Innovation and Entrepreneurship team at the Alexander von Humboldt Institute for Internet and Society is a transdisciplinary group of researchers. Its objective is to establish a platform for practitioners and researchers to better understand and contribute to internet–enabled entrepreneurship. The knowledge base is a video platform where experts and founders share their know–how in short Q&A videos. At startup clinics, PhDs review with founders their business model and guide them to a network of consultants and mentors.

Rocket Internet – changing success ratios in the portfolio?

Active as an investor and internet incubator since 2007, Rocket Internet[28] has expanded from its central Berlin headquarters to have 25 offices across five continents and more than 500 employees. For all its success, Rocket Internet remains controversial in Germany. It is also category–defying, with elements of accelerator, seed fund and corporate adviser as well as incubator.

Its approach, put simply, is to adapt existing, proven internet business models, such as fashion retailers or online consumer sites, to (mainly) developing countries. Its founder and CEO, Oliver Samwer (also co–founder of premium–rate SMS mobile phone content provider Jamba! and Zalando, an online fashion store), has said that it is not betting on technology or globalisation but repeatability.

In addition to obtaining funding for its incubated companies, Rocket Internet itself is the recipient of significant funding from AB Kinnevik (based in Sweden) and Holtzbrinck Ventures (based in Munich), among others. If it can maintain its current success rate, it will improve on the venture capital rule of thumb that four out of five investments fail, more at the seed stage. During interview it was claimed they had achieved a 90 per cent success rate, which flips the usual ratio of venture capital success on its head. This is significant as it affords more options for supporting startups (e.g. high starting salaries which can attract a different type of founder) as well as less reliance on external investment. Documents published as part of its Stock Market listing in October 2014 claimed that at least 11 of its investments are proven winners, with over 50 more live investments in the portfolio so far.

Unlike many programmes for startups, Rocket Internet tends to fit team members to business proposals it has itself originated and resourced, so the entrepreneurs are less like founders than early hires to a new venture. Rocket Internet owns a larger share of the equity than most 'outside' venture funds would. It attracts many candidates from outside Germany and – in line with its statement that it values 'intelligence more than experience' – often hires first time entrepreneurs from backgrounds such as management consultancy. The ratio of women to men is close to 1:1, though men form the great majority at senior management level. Some 50 new employees join every month, but Rocket Internet also loses a handful of people hired away by large corporations for above–average remuneration; Rocket staff are seen as innovators.

Rocket Internet is more operationally involved than most early–stage investors and provides much of the same expertise to its investees that the head office of a corporation might to its subsidiaries: engineering, marketing, CRM, business intelligence, operations, human resources and finance. This in–house expertise is instrumental in achieving its target of launching 80 per cent of new ventures within 100 days.

However, despite raising €1.4 billion it saw its shares decline by 11 per cent on the first day of trading, giving it a market capitalisation of around €6 billion. Rocket Internet is not yet profitable, and its culture is visibly distinct from the consensus–minded norm of corporate Germany, though in exploiting the opportunities provided by 'cloning' proven models it is arguably more incremental and European in its approach than disruptive and Californian.

Attractiveness to startups and potential founders

In this chapter we have identified the business model and stage of intervention in the startup journey as key dimensions for distinguishing between programmes. While these are important considerations if a programme is to remain financially viable, they are of less concern to startups.

In interviews, several startup programmes understandably emphasised the importance of making their programme attractive to startups. Our research did not interact directly with ventures, but programme managers were able to offer some opinions on the appeal of their programme versus others. The ability to attract startups impacts a programme's capacity to be selective, and in one manager's view: *"success comes down to what startups we can attract, not how we select."*

The need to remain attractive to startups puts a limit on some business model activities. For example, at some point fees are perceived as uncompetitive, even unaffordable. Similarly, a programme seeking equity will need to justify the stake it acquires in relation to the value it adds, and when that programme operates over four to six months at the early stage of startup – as many accelerators do – few entrepreneurs will want to give up more than 4–8 per cent of their company.

Over time, most programmes are able to improve their attractiveness to startups through developing and communicating an enhanced understanding of the needs of their clients, and improved market reach. This process is reinforced through success stories from previous programme participants.

Capturing value from startups and/or diversification

As startups mature, a form of natural selection occurs where some survive, some thrive, and some fail depending on their ability to maintain cash flow either through securing investment and/or sales. However, those operating at the early stages of the startup journey run increased risk, as evidenced by the decline in venture capital investment at the seed stage – few produced better than breakeven returns over the past 15 years.

The goal for most supporting startups is to secure some strategic or financial value. The challenge for those involved at very early stages of startup development is that the likelihood of failure is heightened. One way to mitigate risk was for programmes to move towards diversification and vertical integration across the startup journey. For instance, in both Israel and Germany universities are under increasing pressure to develop commercialisation activities. However, this push to capture returns from innovation may encourage research for commercial gain rather than a position entrusted to undertake curiosity–driven research for the common good. Furthermore, this may limit the flow of knowledge from universities into the economy. While such concerns cannot be substantiated in this research, it was evident that universities were developing programmes across the startup journey and some programmes were also responding to similar pressures. For example StartupWeekend are becoming increasingly diversified across the startup journey, with financial opportunity associated with more mature startups. The question is whether the lure of high valuations and exits will end up concentrating too much startup support at the narrow end of the startup funnel, so leaving deal flow vulnerable and a bubble on exits.

4. WHAT ABOUT THE WHERE AND THE WHEN?

Where a programme is located – from the address at the front door, to the country of residence – has an impact on its role in the startup ecosystem. We already know that one of the least controversial findings from academic thinking on incubation is that incubators tends to improve over time as the process becomes more embedded in the local startup ecosystem (Dee et al., 2011). This enables a programme to adapt to the needs of local startups, link to resources, services and networks of value, and connect with other startup programmes addressing different needs.

Country influences

In this section, we offer a country perspective[29] so the reader can place startup programmes in a broad context – though we emphasise that startup ecosystems tend to operate at a city level as geographic proximity provides the cohesion that underlies a functioning ecosystem. We then follow up with a perspective of current trends in startups (the when) and how these have shaped programmes.

Israel

Though Israel is now generally recognised as one of the leading innovation centres in the world, such an outcome would have seemed improbable even in the early 1990s. The story of how it happened is revealing but difficult to apply elsewhere.

For 40 years or longer after its creation in 1948, Israel was predominantly a planned economy in a way that is common among rapidly-industrialising societies. Then, from the early 1990s, several new key drivers emerged approximately simultaneously:

- With the collapse of the former Soviet Union, Israel took in some 900,000 immigrants from Eastern Europe, of whom an estimated 40 per cent had a technical background and 25 per cent higher degrees and/or experience in government sponsored research.
- To help assimilate these new migrants and more specifically turn their technical expertise into marketable opportunities, the government established a national network of technology incubators. Though these were later privatised, the practice of business incubation took root.
- Government noted both the ability of Israeli researchers to originate innovative technologies with potentially extensive applications and the dearth of genuine risk (or venture) capital. From 1992–93, government via the Yozma ('project') scheme effectively created the Israeli venture industry, with generous matched funding inducing leading US investors to graft know-how and culture as well as money into what rapidly became one of the most successful venture sectors in the world.[30]

These critical changes took place in the context of unusual, long-term factors unique to the Israeli economy. Because of its geopolitical isolation, national service in the Israeli Defense Forces (IDF) is undertaken by most school-leavers – men and women – with men

being required to undertake reserve duties into their 40s. Unlike many national armies, the IDF promotes a culture of challenge rather than one of hierarchy, to the benefit of its entrepreneurial ethos:

> *"Israel's reserve system is not just an example of the country's innovation; it is also a catalyst for it. Because hierarchy is naturally diminished when taxi drivers can command millionaires and twenty-three year olds can train their uncles, the reserve system helps to reinforce that chaotic, anti-hierarchical ethos that can be found in every aspect of Israeli society, from war room to classroom to boardroom.*[31]

Israel spends a high proportion of its GDP on defence (5.6 per cent as a share of GDP in 2013, or 13.6 per cent as a share of government spending, versus a global average of 2.3 per cent as a share of GDP and 6 per cent of government spending),[32] much of it targeted on 'smart' systems such as cyber security or electronics. This application-oriented research complemented a long-term commitment to education in general and scientific education in particular; three of its nine institutions of higher education predate the foundation of the state:

- The Technion, or Israel Institute of Technology, was founded in 1912.
- The Hebrew University of Jerusalem in 1925.
- The Weizmann Institute of Science in 1934.

Furthermore, important and well-regarded as these universities are, Israel's real 'Ivy League' is its elite military units such as 8200 (which now even has its own accelerator for alumni and other high-potential entrepreneurs)[33] or Talpiot. This also offers a quick way for startup programmes and investors to screen potential entrepreneurs if they are alumni of such units.

Figure 13 **Israeli Technology Incubator Programme**

High levels of agreement on the definition of an incubator are possible because incubators are a legal concept in Israel, sponsored by government and managed within the Office of the Chief Scientist in the Ministry of Economy: of 20 accredited incubators, 18 are designated 'technology', one a 'technology-based industrial incubator' and the twentieth termed a 'biotech incubator'. First introduced to Israel as a policy response to immigration mainly from the former USSR by scientists without the language, business or cultural skills necessary to turn research into marketable ideas. The incubators were privatised a decade later, with the new owners still benefiting from government funding to run programmes, but seeing the government hand over the equity ownership and management to franchisees.

Recent changes go a long way to countering criticism that incubators had become a refuge for firms that could not obtain funding in the private sector. In summary:

- Every three years, competitive tenders to run incubators are issued by the Ministry of Economy for eight-year incubator licences.
- Eligible applicants (who can be foreign legal entities) will be for-profit, private legal entities, who will be expected to supply incubatees with an appropriate physical working environment supported by administrative services, technical and business guidance and regulatory services.

- Winning licence holders are eligible to submit grant applications on behalf of innovative startups, enabling them to benefit from two years in the incubator with funding of between $500,000 (digital or hardtech) and $800,000 (bio or medtech), of which 15 per cent is provided by the incubator company and 85 per cent as a government grant (to be paid back with interest if the project is successful via royalties of 3 per cent to 5 per cent of revenues).
- The incentive for the incubator is that its investment, though limited to 15 per cent of approved funding, will represent 50 per cent of equity.

Assumption of risk by the public sector of new technology projects is intended to deliver proposals attractive to the private sector after the initial two years of incubation, a classic example of public intervention to alleviate a market weakness at a particular development juncture. Once uncertainties have been minimised and traction established, the private sector can take up responsibility for investing in firms and providing advice.

Are the restrictions imposed by the incubator programme on sales of investments overseas a commercial hindrance? Put simply, since incubators were originally conceived to create jobs and businesses in Israel, disposal of investments funded through incubators by private fund managers to foreign entities was at best problematic until the reforms brought in between 2009–12. Whereas the 'fine' or proportion of sale proceeds used to be discretionary (introducing a high degree of uncertainty into the value of any disposal), it has now been fixed at three times the original government funding where jobs and IP stay in Israel and six times where jobs and IP leave the country.

The final part of the Israeli jigsaw in moving to an innovation–led economy was a further variation on the theme of making a virtue of necessity. Because of its small domestic population and difficulties in selling to unsympathetic neighbours with generally low GDP per capita, Israel's technology leaders incorporated internationalism into their sales strategy from the outset. Where mid–tier European nations may be lulled into addressing domestic markets, Israeli startups needed to target American, European or Asian markets from the outset to achieve any meaningful scale.

Germany

The recent flowering of accelerators and related high–growth support programmes in Germany is fascinating in itself. But this blossoming of entrepreneurialism is made even more intriguing because of the background against which it emerged. Germany for much of the past century has been a case study in the difference between research on the one hand and innovation on the other, but it is showing signs of significant change.

Germany's research prowess is self–evident. Its pioneering work in the 19th century, effectively creating the research university with graduate schools and research degrees (such as the PhD), was copied early on in the US[34] and only later in Britain. It is therefore somewhat ironic that during the last decade Germany undertook a public debate on creating an 'Ivy League' of internationally competitive universities to enable it to catch up with America.[35]

Furthermore, although generally less active in direct university technology transfer than the US (partly because heavy teaching loads among faculty before the 2006 reforms), Germany did benefit from over 200 research institutes to help promote both basic research and the application of R&D. For instance, the Helmholtz Centres and Max Planck Institutes support new research and the Fraunhofer Societies and Leibniz Institutes are tilted to applied

research. The Fraunhofer concept has recently been adapted to form Catapult Centres in Britain. Major private companies – Siemens, Bosch, Volkswagen – have also long been major generators of research leading to patentable inventions.

To return to the distinction between research and innovation – especially innovation with a disruptive, entrepreneurial bias: for a variety of reasons, over the past 20 years Germany struggled to attract the best graduates into the startup world, or see many startups rise through serial funding rounds to stock market success. This was despite numerous well-funded attempts in the 1990s and 2000s to promote entrepreneurship through government programmes, including DM2.3 billion of privatisation proceeds invested in the Bayern Offensive from 1994. The temptations of working in prestigious industrial corporations, and fears of the career damage associated with working for a failed startup, kept ambitious graduates away from the entrepreneurial world.

This is now changing, in some of the bigger cities at least.

And the macro-economic evidence bears out the transformation Germany has been undergoing: it scored third among EU members for innovation performance in 2014, behind only long-term innovation champions from Scandinavia, Sweden and Denmark – and a significant improvement on its middle-of-the-pack performance in the first EU-wide survey in 2001.

What has changed? Alongside economic reforms such as labour-market liberalisation, in the past few years Germany has seen a series of grass-roots initiatives, mainly private sector though (as with Werk1 in Munich or the public-private seed investor, High-Tech Gründerfonds) also with government support. Venture capital, including corporate venture capital, has increased.[36] Entrepreneurs – such as the founders of Betahaus and Berlin Startup Academy – have established workspaces and programmes to support the next generation, based on their own experience of what was lacking when they launched their own ventures. Germany – especially Berlin – has benefited from that rare combination of affordability, supportive infrastructure, vibrant creative life and perceived 'cool' to attract ambitious, talented young founders from across Europe and beyond. (One of our interviewees pointed out that the Berlin subway line – U8 – on which most of the accelerators are to be found is also the line most used by clubbers.) As well as attracting talent from beyond its own borders, Germany has profited from a concerted focus on overseas markets on the part of influential new-business groups such as Rocket Internet. Betahaus now has associated centres in Sofia and Barcelona as well as Hamburg to complement is original Berlin operation.

If research turns money into knowledge, that knowledge is now being turned back into money thanks to the entrepreneurial smarts of an internationally-minded generation in Germany, supported by centres, mentors and programmes on a scale not imagined half a generation ago.

United Kingdom

The UK has not always scored among the highest on international league tables of entrepreneurship, but efforts to improve skills, attitudes and opportunities are paying off (the *Global Entrepreneurship Index 2015*, for instance, noted that 'The big surprise is the UK's ranking in 4th place' behind only the US, Canada and Australia, immediately ahead of Sweden and Denmark).[37] The UK pioneered the construction of science parks and incubators in Europe in the 1990s, has introduced a wide range of tax breaks to encourage angel investment (such as the Enterprise Investment Scheme) alongside employee share option schemes and programmes to stimulate research and development (R&D Tax credits, Patent Box). Repeated attempts have also been made by government to increase the

institutional supply of risk capital, first through regional venture capital funds (generally not accounted a success) and more recently through Enterprise Capital Funds – public–private venture investment vehicles averaging £34 million, in which government gears the 'upside' return to private investor, rather than taking first losses.

Today the UK is home to a handful of the most innovative clusters in Europe. The British Venture Capital Association recently analysed five UK clusters outside London (Cambridge, Manchester City Region, Bristol, the Midlands 'Motorsport Valley' and Aberdeen),[38] and noted that many others could have been included 'such as the computer games industry in Edinburgh; biotechnology in Oxford, Nottingham and Norfolk; aerospace in the Home Counties; creative sectors in Manchester and Glasgow; or developing greentech industries in the Northeast of England and Northwest of Scotland.'[39]

One of the BVCA's policy recommendations included 'Be patient and avoid creating excessive hype. Cultural change takes generations, but cynicism is ever present.' That said, one of the most discussed public initiatives in the startup space in recent years has been Tech City, in Shoreditch in East London, which in addition to investment from international firms such as Google, McKinsey, Facebook, Cisco and Intel, has also attracted government sponsorship in the shape of Tech City UK: 'A publicly–funded organisation with a startup mentality, our aim is to accelerate the growth of digital businesses. We achieve this by connecting, informing and advancing the UK's digital ecosystem.'[40]

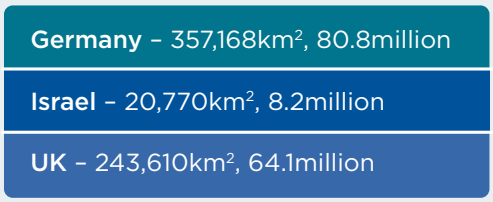
Having been the European pioneer in science parks and incubators 20 years back, the UK more recently was home to the first accelerator in Europe: The Difference Engine, founded in 2009 by Jon Bradford (now Managing Director of TechStars in London), who swiftly went on to form Springboard in Cambridge. By October 2014, the specialist accelerator listing site www.f6s.com noted 316 programmes in the UK.

Startup programmes and ecosystems

So what does this tell us about the connections between startup programmes and ecosystems? Israel demonstrates how important public funding was to stimulating a mechanism capable of engaging under–utilised individuals in startups, and laying the foundations for one of the most successful startup ecosystems in the world.

The size of country also matters. At less than 10 per cent of the size of Germany or the UK (Figure 14), Israel may offer some advantages because of its size. Many interviewees mentioned the ease of networking when most individuals could be accessed via only one or two degrees of separation.

Figure 12 **Comparing country size and population**[41]



An intriguing question is raised when examining the links between startup programmes and ecosystems. For a startup programme to be successful, must it be located in an established startup ecosystem, or does it instigate the emergence of a startup ecosystem? A full value chain of startup activity seems contingent on being able to access enough startups with high growth potential as well as key stakeholders from an ecosystem. Imperial College recently identified 'ecocsystem' accelerators, typically publicly funded, which are designed to build the startup ecosystem (Clarysse, Wright and Van Hove (2015) *A Look Inside Accelerators*). In contrast we spoke

to public bodies in developed startup ecosystems who still provided support, from helping outsiders explore the landscape through access to facts, figures and networks, as well as more direct financial involvement in startups such as that provided in Israel in the incubator programme, or Growth Accelerator activities in the UK. In developed startup ecosystems, public bodies seemed concerned with fitting in with the needs of the startup ecosystem rather than promoting disjointed activity. This is in contrast to the ecosystem accelerators mentioned in the Imperial report, Clarysse, et al., 2015, which instead were proactively trying to stimulate and build a startup ecosystem. In emerging ecosystems like Jerusalem we found such proactive engagement by public and private funds.

Regardless of public support, there was evidence that programmes can overcome some local weaknesses in a startup ecosystem by plugging into ecosystems elsewhere.[42] Israel is a useful example, as it has had to overcome local market challenges[43] by remaining very connected with the US and the resulting opportunities in the US market. When asked if Europe could have filled this void, there were mixed views as Europe is seen as fragmented and therefore hard to penetrate at scale. Similarly there were concerns over the availability of entrepreneurial capital from domestic sources for the growing startup scene, even though this has improved recently in Germany. It was evident many programmes had developed links elsewhere to gain access to investors from other startup ecosystems e.g. between Berlin and Tel Aviv. Even in more established startup ecosystems, like London and Cambridge, there are deliberate links elsewhere e.g. Silicon Valley Comes to UK (SVC2UK). Crowdfunding platforms also contribute to this dynamic, and facilitate engagement between potential investors and entrepreneurs regardless of location. What this means for startup programmes in the future remains unclear, but could mean a startup programme can overcome locational challenges. However, such connectivity between startup ecosystems may be a concern for those investing public money in startup programmes where the value, in terms of economic development, may not be captured locally.

Staying in the now

Entrepreneurial opportunities are constantly in flux as revealed by ebbs and flows of startup activity across different sectors, business models, and geographies. Startup programmes have evolved with the changing needs of startups and business environment, and sometimes match the fate of the startups they support.

Particularly illustrative is the identification of 'business accelerators' in 2000 in reference to for-profit, equity-driven incubators (Hansen, Chesbrough et al., 2000). Idealab! was one of the first for-profit incubators (est. 1996 by Bill Gross) in a new wave of over 350 for-profit incubators founded before 2000. These incubators included names like Gorilla Park, Hotbank and BrainSpark. They took equity, lured by the promise of returns from a new wave of internet businesses. Few survived the dot.com bubble, and the news at the time included stories of lawsuits, bankruptcy, and the follies of following the crowd. These 'incubators' shared many of the business model features of today's accelerator programmes, though often their programmes did not offer time-limited support for cohorts. At the time, dot.com businesses were resource-intensive and many sector-specific processes were bespoke. Furthermore, the dot.com crash undermined investor confidence in internet businesses of the time. Valuations and exit opportunities crashed.

The term 'accelerator' might be understood as a reference to a programme's ability to accelerate startups more than other types of startup programmes. However, our work and others (Miller and Bound 2011; Clarysse, Wright and Van Hove, forthcoming) indicates it is the startup's ability to be accelerated rather than the programme's ability to accelerate which is key, especially when the business model is considered. Scope for acceleration has been largely

contingent on the digital sector, which has evolved over the last two decades to enable access to low–cost online platforms and processes, and a rapid route to market. The majority of accelerators focus exclusively on digitally–enabled businesses because of their propensity for rapid scaling relative to more resource–intensive sectors like medtech. The temptation has been for new startup programmes to follow this trend and either focus on digital startups and/or imitate other accelerator programmes so they, too, can take advantage of the relatively quick wins to be gained in digital. This trend reflects a wider market interest in digital ventures from equity investors. However, it should be acknowledged that like all trends, features of the digital sector may not last, and therefore examining the appropriate support infrastructure for longer–term and more capital intensive investments should not be ignored. We believe that a variety of models can spread risk to prevent the future collapse or stalling of a startup ecosystem.

Using this framework, we can start evaluating if the accelerator model could be applied to other sectors. During our research, it was evident that many startup programmes are experimenting with 3D printing and rapid prototyping. These technologies create the possibility of accelerating the developmental journey for startups in hardtech, enabling a faster path between concept and commercialisation. This may permit accelerator models to be applied beyond the digital sector, as indicated by increasing activity in the 'maker movement'. But it is still unlikely that accelerators can be applied meaningfully to medtech and other sectors requiring a longer incubation period for their startups. Further work is needed to examine the rise of accelerators for social and other ventures where development and commercialisation challenges may differ significantly from those experienced by digital startups. Growth driven programmes are particularly at risk when exit options and equity valuations remain uncertain and slow to materialise.

5. CONCLUSIONS – WHAT'S THE DIFFERENCE, AND DOES IT MATTER?

Using qualitative research across a number of cities, this report has produced a working typology of startups' support mechanisms, focussing on those dimensions which vary most between programmes. The research shows how programmes fulfil different roles for startups in startup ecosystems, and there is value in recognising these different roles. Roles are in part determined by the business model that programmes use, which is also influenced by the local startup ecosystem.

First sight of the startup support scene in many established ecosystems often seems chaotic, with numerous competing programmes using similar names apparently vying for the interest of the same cohort of entrepreneurs. However, further analysis of those centres visited in the course of this research suggests that, as often as not, programmes are as much complementary as conflicting.

In larger clusters with greater supply of new firms – and hence demand for services – some overlap is both inevitable and desirable. Despite the confusingly–similar names and branding of adjacent programmes, entrepreneurs on the whole seemed to navigate to the services or centres relevant to them at a particular stage in their journey, interpreting signals from the programmes, other entrepreneurs and advisers. It is unlikely that a Berlin–based founder team with a high need for autonomy and only limited interest in telecoms would prefer Hub:raum to Betahaus, for example.

That said, the more complex and crowded an ecosystem becomes, the more the need for specialisation of programmes emerges, along with the ability of programmes to work together while remaining competitive. This can be seen in Cambridge, for instance, where specialisation by stage and sector is becoming the norm as numbers of incubators increase: the Future Business Centre focuses on cleantech and social enterprise; Babraham on life science; ideaSpace on founders and St John's Innovation Centre on general innovation with a bias to information technology. Our research also showed that startup programmes which were highly networked within the local startup ecosystem could co–operate, by redirecting entrepreneurs if other programmes were more appropriate. We also found examples of an accelerator programme working with a coworking space in a complementary way, as demonstrated by Betahaus. Some coworking spaces also promoted a symbiosis between startups and freelancers; freelancers do not, however, fit with the equity driven accelerator programme.

The more the evolution of startup programmes is studied and understood, the easier – in theory – it is for good practice to be more widely adopted in other geographies, or sponsored as tools of economic regeneration by government and major corporates. However, as with many aspects of clusters, accelerators and incubators tend to be successful in the specific geographies for which they were designed; adopting a model elsewhere implies also adapting it. While we interviewed a number of programmes that had deliberately grown out of experience elsewhere (Rocket Internet, The Factory) or had set up operations in other countries (Betahaus), other programme managers referred to the specific circumstances of the cluster in which they operate (Jerusalem Venture Partners, Humboldt Innovation) or mentioned unsuccessful attempts to replicate programmes elsewhere.

In designing the research, we were initially frustrated by the lack of longitudinal data of many programmes, which made analysis of the success of startups over time impossible to undertake on a systematic basis. We expect that as the growth phase of accelerator programmes in particular plateaus, some consolidation will be experienced and the stronger programmes will, as a matter of course, develop a pedigree. However, we now also consider that the relative youth and ephemeral existence of many programmes can be an advantage for startups. New programmes are created in response to a perceived need at a given time; if that need does not persist, the programme is poorly executed or the programme does not morph to meet revised expectations, its time has passed. The Israeli incubator programme is a case in point. First formed as part of an immigrant assimilation programme in the 1990s, it was privatised a decade later and more recently reconfigured as an intensive matched-investment programme with bespoke workspace, often run by venture investors as part of a wider programme of entrepreneurial support (including accelerators and seed funds) to assist investees over several stages of growth.

Further, numbers of programmes and their diversity are an advantage in addressing the varying needs of an inherently diverse range of entrepreneurs, founder teams, phases of firm development, sectors and markets. Entrepreneurship remains the endogenous source of creativity within the economy. Its impact can only be felt once turned into a commercial venture which can trade and interact with a variety of other stakeholders in the business environment.

Our research also cautions against the presumption that all startups are like digital startups, or that support mechanisms that work for digital startups can necessarily be applied elsewhere at this time.

For example, the recent emergence of the 'accelerator' model might suggest it is doing something completely new for startups. However, it does not offer new tools and techniques to accelerate ventures more than some other programmes, but does largely target 'digital' ventures which thereby have an accelerated journey to launching their product in the market: it is sector specific rather than programme specific. But applying this model to non-digital startups may not be appropriate; medical devices, in particular, were seen as problematic by several interviewees.

Moreover, whilst the emphasis among accelerators on digital startups is understandable, it generates the risk of further 'me-too' programmes competing for the same narrow audience of easy-to-help ventures. The risk of saturation – too many programmes, insufficient quality startups – is not negligible. The creativity of pioneering ventures such as NESTech in Haifa and the advice traded for research data of the Startup Clinics at Humboldt University are refreshing alternatives.

Within research universities, fears of an imminent rush to a fully commercial ethos are premature. In both Tel Aviv (StarTAU) and Berlin (Humboldt Innovation) much creative work assisting and inspiring entrepreneurs comes across as a still peripheral activity in which the majority of faculty have limited interest. UnternehmerTUM in Munich (organisationally part of the Technical University, one of the highest-ranked in Germany) is physically domiciled at the city's edge in an incubator building with other early-stage firms. Since entrepreneurship thrives on a sense of being David rather than Goliath (and the skills or attributes of a successful researcher are rarely those also of a business founder), remaining near the margin may be a help rather than a hindrance for university entrepreneurship teams. Technology transfer offices, particularly those specialising in licensing, have a separate function.

For policymakers, the lesson is clear: startups face a range of challenges and opportunities that require help from a variety of programmes. It can be tempting to follow the latest vogue, but this risks overcrowding a small space in a startup ecosystem and undermining other equally valid programmes. Instead, we recommend considering the startup journey as an entire value chain that needs supporting at each point. What startup programmes are able to deliver depends on whether they are operating in an ecosystem that supports their activities and the business models they adopt. Public policy must intervene only when this value chain breaks or to stimulate the emergence of a startup eccosystem, but intervention can also be originated by private investors. We hope the dimensions by which we distinguish between startup programmes provides a lens through which such initiatives can be evaluated. Once this happens, programmes can work together not just in local startup ecosystems, but by forging links internationally to create systemic effects greater than the sum of their parts.

REFERENCES

Clark, P. (2013) Waiting for the Accelerator Bubble to Pop.' Bloomberg Businessweek.'

Dee, N., et al., (2011) 'Incubation for growth: A review of the impact of business incubation on new ventures with high growth potential.' London: NESTA. See: http://www.nesta.org.uk/library/documents/IncubationforGrowthv11.pdf

Hansen, M., et al., (2000) Networked Incubators: Hothouses of the New Economcy.' Harvard Business Review.' September–October: 74–84.

Miller, P. and Bound, K. (2011) 'The Startup Factories: the rise of accelerator programmes to support new technology ventures.' London: NESTA. http://www.nesta.org.uk/publications/startup-factories

Senor, D. and Singer, S. (2009) 'Start–up Nation: The Story of Israel's Economic Miracle.' US: Twelve.

Clarysse, B., Wright, M. and Van Hove, J. (2015) 'A Look inside Accelerators.' London: Nesta.

Miller, P. and Stacey, J. (2014) 'Good Incubation: The craft of supporting early–stage social ventures.' London: Nesta. See: http://www.nesta.org.uk/sites/default/files/good_incubation_wv.pdf

APPENDIX

Interviewees and contributors

(Ordered according to organisations in alphabetical order)

Name	Organisation	City	Country	Principal Activities
Christoph Räthke	Berlin Startup Academy	Berlin	Germany	Accelerator
Tobias Martens	Berlin Startup Academy	Berlin	Germany	Accelerator
Madeleine Gummer von Mohl	Betahaus	Berlin	Germany	Coworking
Tim Minshall	Cambridge University Entrepreneurs	Cambridge	UK	Competition
Izhar Shay	Canaan Partners and Startup Stadium	Tel Aviv	Israel	Investor and network
Robert Lacher	Deutsche Innovations Fonds	Munich	Germany	Investor
Matt Clifford	Entrepreneur First	London	UK	Accelerator
Matthew Gould	HM Ambassador to Israel	Tel Aviv	Israel	Public sector
Fee Beyer	Hub:raum	Berlin	Germany	Corporate accelerator
Martin Mahn	Humboldt Innovation	Berlin	Germany	Coworking and incubation
Robin Tech	Humboldt Institute for Internet and Society	Berlin	Germany	Business support clinics
Stewart McTavish	ideaSpace	Cambridge	UK	Coworking
Ami Shpiro	Innovation Warehouse	London	UK	Accelerator
Yossi Smoler	Israel Technology Incubator Program	Tel Aviv	Israel	Incubator
Roland Sillmann	IZBM	Berlin	Germany	Incubator
Stav Erez	Jnext	Jerusalem	Israel	Network
Hanan Brand	JVP	Jerusalem	Israel	Incubator
Ayelet Ben Arav	NESTech	Haifa	Israel	Incubator
Nimrod Cohen	Plus Ventures	Tel Aviv	Israel	Incubator
Andreas Winiarski	Rocket Internet	Berlin	Germany	Investor and incubator
David Urry	Science and Innovation, Foreign and Commonwealth Office (FCO)	Berlin	Germany	Public sector

Hannah Boley	Science and Innovation, Foreign and Commonwealth Office (FCO)	Berlin	Germany	Public sector
Tom Genossar	SOSA	Tel Aviv	Israel	Coworking
David Gill	St John's Innovation Centre	Cambridge	UK	Incubator
Oren Simanian	StarTAU	Tel Aviv	Israel	Courses and competitions
Yael Weinstein	Tel Aviv Global	Tel Aviv	Israel	Public sector
Hila Oren	Tel Aviv Global	Tel Aviv	Israel	Public sector
Inbal Safir	Tel Aviv Global	Tel Aviv	Israel	Public sector
Jeremy Bamberg	The Factory	Berlin	Germany	Incubator, coworking, campus
Nitzan Cohen-Arazi	the junction	Tel Aviv	Israel	Accelerator
Nir Tarlovsky	TheTime	Tel Aviv	Israel	Incubator
Ella Mayhew	Unilever Sustainable Living Young Entrepreneurs Awards	London	UK	Competition
Nicola Dee	Unilever Sustainable Living Young Entrepreneurs Awards	Cambridge and London	UK	Competition
Joanna Mills	University of Cambridge Entrepreneurship Diploma	Cambridge	UK	Course
Mike Peirce	University of Cambridge Institute for Sustainability Leadership, partner of the Unilever Sustainable Living Young Entrepreneurs Awards	Cambridge	UK	Competition
Martin Hanauer	UnternehmerTUM GmBH	Munich	Germany	Incubator, coworking, investment
Thomas Münch	UnternehmerTUM GmBH	Munich	Germany	Incubator, coworking, investment
Deborah Rippol	UP Europe Startup Weekend	London	UK	Courses, competitions
Gil Ben-Artzy	UpWestLabs	Palo Alto (interviewed in Tel Aviv where entrepreneurs are sourced)	US	Accelerator
Ori Choshen	VLX	Jerusalem	Israel	Incubator
Franz Glatz	Werk 1	Munich	Germany	Coworking
Anat Segal	Xenia Venture Capital	Tel Aviv	Israel	Investor

ENDNOTES

1. We did not include research institutes and science parks in our study which can also offer some space and services to startups.
2. Israel was also included because of the overall reputation of entrepreneurial activity in a country of just over eight million people and because of the density of programmes: according to one leading map of high-tech activity, at the time our interviews were conducted (July 2014) Israel hosted 38 accelerators. http://mappedinisrael.com accessed 28/7/2014
3. Some accounts attribute the term incubator to the first tenant of the building – a chicken incubator company.
4. Stross, R. (2007) 'The Wizard of Menlo Park.' New York NY: Crown Publishers.
5. This is the working definition used by Nesta, which expands on Steve Blank's widely accepted definition of startups as organisations formed to search for a repeatable and scalable business model. The emphasis on young firms was added to emphasise that startups are different from SMEs, as research suggests that different sets of policies are required to support young versus small firms. See for example: http://mpra.ub.uni-muenchen.de/57384/1/1001675-Small-Business-Innovation-and-Tax-Policy-A-Review.pdf
6. Israel was also included because of the overall reputation of entrepreneurial activity in a country of just over eight million people and because of the density of programmes: according to one leading map of high-tech activity, at the time our interviews were conducted (July 2014) Israel hosted 38 accelerators. http://mappedinisrael.com accessed 28/7/2014
7. http://www.entrepreneur.com/article/227832
8. In parallel with this research, Dr Nicky Dee also supervised a student, Tom Fry, studying the role of accelerators in South Africa for a masters dissertation at the University of Cambridge (ISMM).
9. And prompting questions over the financial viability of the accelerator business model: Clark, P. (2013) Waiting for the Accelerator Bubble to Pop. 'Bloomberg Businessweek.' 14 March 2013.
10. www.growthaccelerator.com
11. See further Miller and Bound 2009 p9: an open, competitive application process; seed investment in exchange for equity; focus on teams not individuals; time-limited support, with programmed events and intensive mentoring; assistance in cohorts; and – often – concluding with a 'demo day'.
12. Miller, P. and Stacey, J. (2014) 'Good Incubation: The craft of supporting early-stage social ventures.' London: Nesta.
13. It should be noted that Miller and Bound did not suggest time limited support was exclusive to accelerators, but part of a package of characteristics that seem to apply to accelerator programmes.
14. Cambridge University Entrepreneurs (CUE) took the unusual step in 2005 of having a finalists pitching event where investors made live commitments at the time, much in the style of Dragons Den. Even though the event raised £150,000 (£100,00 from one fund, £10,000 from five angels), subsequent years used a pre-determined prize fund which was then allocated to finalists by investors (S. McTavish – president of CUE at the time, personal communication 5 December 2014).
15. Prizes can be significant. In the US, Rice University Business Plan Competition proclaims it is the world's richest and largest graduate-level student startup competition. This is the 14th year for the competition. In that time, it has grown from nine teams competing for $10,000 in prize money in 2001, to 42 teams from around the world competing for more than $1.3 million in cash and prizes (Source: http://alliance.rice.edu/about_rbpc/).
16. http://www.bvca.co.uk/Portals/0/library/Files/News/2013/RIA_2012.pdf
17. http://www.cbinsights.com/blog/wp-content/uploads/2014/04/top10q1exits1.jpg Although healthcare made up 63 per cent of Q1's record setting IPO tally, not a single healthcare IPO made the top ten in terms of exit size (valuation).
18. WorkSpace (http://www.workspace.co.uk/) is owned by a leading provider of commercial space in London, UK.
19. Nitzan Paldi, founder of Beeologic, which develops products to restore bee health and which was sold to Monsanto in 2011.
20. Note also that further along the same street is another coworking space, Hamifal. See: www.coworkisrael.com/#!hamifal/ccy6
21. cf The 2000 movie of that name in which each person to whom a favour is done is asked not to 'pay it back' but 'pay it forward' to three other people, with a similar condition imposed on each of them.
22. Compare EasyJet's innovations in air travel, where passengers only paid for what they needed, including baggage and food.
23. Dell Social Innovation Award, Walmart Better Living Business Plan Competition, Rolex Awards.
24. https://www.microsoftventures.com/accelerators/telaviv/faq
25. Another exception identified in prior work by Nesta is Startup Studios – http://www.nesta.org.uk/event/startup-studios
26. They have had 274 graduates and 68 ventures (sourced 6 Oct 2014 – http://portal.idc.ac.il/en/zell_entrepreneurship/welcome/pages/home.aspx).
27. Fifth on the Times Higher Education World University Rankings
28. www.rocket-internet.com
29. Also see Telefonica (2014) 'The Accelerator and Incubator Ecosystem in Europe.' For another perspective on how different European countries approach acceleration and incubation. www.lisboncouncil.net/component/downloads/?id=897
30. Gill, D., et al., (2002) 'Israel and the Virtues of Necessity.'
31. Senor, D. and Singer, S. (2011) 'Start-up Nation.' Twelve. p50.
32. Stockholm International Peace Research Institute. See: www.sipri.org/research/armaments/milex/milex_database/milex_database
33. http://www.eisp.org.il/
34. First by Yale in 1861: Porter, M. (1990) 'Competitive Advantage of Nations.' London: Macmillan.
35. This resulted in the German Universities Excellence Initiative from 2006, with 11 universities (out of 140) awarded 'excellence' status in 2012. Additional funding and higher status are intended to make the award-winners more competitive with foreign research universities. International prizes, another proxy, for educational excellence, bring Germany a tally of 102 Nobel prizes (including literature and peace, but with a formidable list of physicists, chemists and physiologists – including Stefan Hell, co-winner of the 2014 prize in chemistry for the development of super-resolved fluorescence microscopy), nine since 2000 alone.
36. 'Wall Street Journal.' 1 August 2014.
37. Acs, Z. J., Szerb, L. and Autio, E. (2014) 'The Global Entrepreneurship Index 2015.' Washington DC: The Global Entrepreneurship and Development Institute. Pp.18–20.
38. Clark, J. (2013) 'Tech Country – Looking Beyond London in search of Britain's technological future.' London: BVCA.
39. Ibid p44.
40. www.techcityuk.com/about_us
41. http://en.wikipedia.org/wiki/List_of_countries_by_population
42. South Africa is not known for having a well-developed startup ecosystem especially in regard to startups with high growth potential. In the last couple of years accelerator programmes have been started e.g. 88mph. 88mph has an international management team based in Europe that transfers to South Africa for the duration of the programme. These individuals then form part of the mentoring and coaching team, however, approximately 70 per cent of the programme mentors are locally based serial entrepreneurs (Murray Fry, T. (2014) 'A study of the seed accelerator programme landscape in South Africa.' Dissertation for the Master of Philosophy in Industrial Systems, Manufacturing and Management at the University of Cambridge Institute for Manufacturing.)
43. A recent post by Steve Blank (author of the Lean Start-Up) suggests that as a rule of thumb, B2C startups should target a population of more than 100 million. (Source: http://steveblank.com/2014/10/31/born-global-or-die-local-building-a-regional-startup-playbook/)

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