How Cities and Regions Compete Globally for Tomorrow’s Talents

Implications for Bilbao/Bizkaia/Basque Country

D&L Partners, SA

December 2016

This study was commissioned in late 2015 by Bizkaia Talent with the aims of providing the basis for a local talent competitiveness index based on a robust methodology and readable rankings, and articulating a small number of strategic priorities through which Basque Country could enhance its talent competitiveness. The report builds on the established core methodology that has been at the heart of the Global Talent Competitiveness Index (GTCI).

Bizkaia Talent is a non-profit organisation tasked with fostering and facilitating the implementation of the necessary conditions for attracting, connecting and retaining in Bilbao, the Historic Territory of Bizkaia and the Basque Country in general, highly qualified people in the areas of knowledge and innovation.

D&L Partners is a global strategy consulting firm that specializes in providing innovation, skills and technology advice to governments and multinational organizations.

Note : Bilbao is the capital city of the Basque historical territory of Biscay and the main city of the Basque Country. This territory, represents more than 50% of the population of the Basque Country**.**

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I. Background

This document constitutes the second and final part of the report commissioned in 2015 by Bizkaia Talent with the aims of providing the basis for a local talent competitiveness index based on a robust methodology and readable rankings, and articulating a small number of strategic priorities through which Basque Country could enhance its talent competitiveness. It hence should be read in conjunction with the main report produced for that purpose (**How Cities and Regions Compete Globally for Tomorrow's Talents: A European Exploration**), presented in Bilbao in December 2016.

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In a field of 27 cities representing a disparate cross-section of regions around the EU, Bilbao/Bizkaia's overall index score placed in squarely in the middle of the ranking, both below and above 13 other cities[1].

In the following sections, let us consider the main strengths and weaknesses of Bizkaia's performance along the talent competitiveness dimensions thus far; some of the existing international practices that may be relevant and applicable to Bizkaia's future talent strategy; and specific near- and medium-term action points the region's agencies overseeing issue of talent will do well to take into account.

[1] See, 'How Cities and Regions Compete Globally for Tomorrow's Talents: A European Exploration'. Unless otherwise specified, all other quantitative information contained in the present document can be found is that same report.

II. A snapshot of Bizkaia's main strengths and weaknesses

The middle-of-the-way, approximately EU-average score and ranking that Bilbao earned in the overall index is maintained in three of the index's six pillars. Thus Bilbao placed 15th out of 27 EU cities in the Enable pillar, which reflects a city/region's R&D spending, household ICT penetration and presence of leading international companies; 14th in the Attract pillar representing per-capita GDP and quality-of-live/environment indicators; and 17th within the Grow pillar based on variables such as presence of reputable universities and local rates of vocational and tertiary enrolment.

Pillar I: ENABLE		
1	Copenhagen	67.8
2	Zurich	62.2
3	Helsinki	62.0
4	Dublin	58.4
5	Gothenburg	56.0
6	Berlin	54.9
7	Paris	54.6
8	Eindhoven	54.0
9	Hanover	51.9
10	Tallinn	41.9
11	London	40.0
12	Kiel	39.9
13	Birmingham	39.4
14	Madrid	39.3
15	**Bilbao**	38.6
16	Brno	37.8
17	Vienna	36.1
18	Cardiff	35.9
19	Bologna	34.4
20	Nantes	33.8
21	Barcelona	33.4
22	Turin	31.8
23	Milan	30.1
24	Valletta	28.4
25	Zaragoza	25.1
26	Krakow	24.9
27	Riga	22.7

Pillar II: ATTRACT		
1	Zurich	95.2
2	Paris	81.4
3	Copenhagen	80.4
4	Vienna	80.1
5	Eindhoven	77.0
6	London	76.4
7	Helsinki	74.6
8	Berlin	74.1
9	Gothenburg	70.4
10	Nantes	70.3
11	Zaragoza	69.7
12	Madrid	69.2
13	Cardiff	62.9
14	**Bilbao**	62.3
15	Dublin	60.1
16	Bologna	60.0
17	Birmingham	56.2
18	Brno	52.8
19	Tallinn	46.7
20	Barcelona	46.4
21	Milan	46.2
22	Riga	44.5
23	Valletta	40.4
24	Turin	36.3
25	Krakow	34.8
26	Hanover	26.9
27	Kiel	n/a

Pillar III: GROW		
1	Copenhagen	92.5
2	Helsinki	78.5
3	Madrid	77.7
4	Gothenburg	71.5
5	Cardiff	70.6
6	London	67.3
7	Barcelona	67.2
8	Birmingham	66.1
9	Zurich	62.2
10	Krakow	60.4
11	Milan	58.8
12	Dublin	55.5
13	Paris	54.5
14	Eindhoven	50.7
15	Zaragoza	49.2
16	Bologna	47.1
17	**Bilbao**	46.3
18	Riga	44.0
19	Berlin	43.5
20	Kiel	42.1
21	Tallinn	41.3
22	Turin	40.6
23	Hanover	37.4
24	Brno	35.2
25	Nantes	31.4
26	Vienna	29.7
27	Valletta	25.5

In two other pillars, Bilbao/Bizkaia dramatically outperforms its overall index ranking as well as the majority of other cities/regions in the study, placing Top 3 in both categories. It comes in at no.2 in the Retain pillar/sub-index which captures cost-of-living and health/safety indicators; and no.3 in the Global Knowledge pillar built around tertiary education levels and international connectivity.

The one pillar where Bilbao/Bizkaia's achievements underperform its own overall score as well as the field has to do with Utilizing Skills (Pillar V).

Pillar IV: RETAIN		
1	Vienna	79.0
2	**Bilbao**	77.6
3	Brno	76.3
4	Tallinn	73.1
5	Cardiff	71.5
6	Barcelona	69.9
7	Zaragoza	69.8
8	Krakow	68.9
9	Valletta	68.7
10	Riga	67.5
11	Berlin	66.6
12	Madrid	65.3
13	Kiel	65.2
14	Hanover	64.0
15	Bologna	63.8
16	Helsinki	63.7
17	Copenhagen	63.4
18	Eindhoven	63.3
19	Nantes	62.3
20	Birmingham	61.0
21	Milan	58.2
22	Gothenburg	58.0
23	Turin	56.4
24	Paris	55.7
25	London	51.3
26	Dublin	50.9
27	Zurich	45.2

Pillar V: UTILIZE SKILLS		
1	Brno	100.0
2	Krakow	88.2
3	Kiel	87.7
4	Hanover	85.9
5	Vienna	72.2
6	Riga	70.6
7	Berlin	70.5
8	Tallinn	68.1
9	Nantes	63.6
10	Bologna	59.6
11	Turin	57.7
12	Zurich	57.6
13	Gothenburg	56.6
14	Cardiff	51.5
15	Birmingham	51.2
16	Eindhoven	50.0
17	Paris	48.6
18	Milan	47.9
19	Helsinki	44.5
20	London	41.7
21	Copenhagen	41.0
22	Dublin	34.5
23	Zaragoza	24.5
24	Madrid	23.2
25	**Bilbao**	17.1
26	Barcelona	16.5
27	Valletta	16.0

Pillar VI: BUILD GLOBAL KNOWLEDGE		
1	Copenhagen	76.5
2	Zurich	70.8
3	**Bilbao**	63.3
4	Madrid	63.1
5	Gothenburg	56.1
6	Dublin	54.8
7	Barcelona	54.2
8	Helsinki	53.2
9	Paris	44.6
10	Birmingham	44.1
11	Eindhoven	44.0
12	Tallinn	43.3
13	Nantes	40.8
14	Zaragoza	40.7
15	Cardiff	39.0
16	Vienna	37.1
17	London	35.8
18	Riga	34.5
19	Krakow	32.1
20	Berlin	29.4
21	Hanover	26.1
22	Bologna	24.9
23	Brno	22.3
24	Kiel	22.3
25	Milan	17.0
26	Valletta	17.0
27	Turin	14.7

Some key messages emerge from this pillar analysis, namely :

1. The two pillars' Top-3 placements in a study involving 27 cities across the EU are remarkable achievements, and will serve as logical cornerstones of

Bilbao/Bizkaia's continued efforts to market itself as a European and global talent destination of choice.

2. The ability to retain international talent in an increasingly dynamic and transient talent and migration space naturally lends itself to compelling success stories. These will serve to underpin Bizkaia's branding, marketing and other communication programs.
3. The high ranking along the Global Knowledge dimension of talent competitiveness signals that the city/region is well-prepared and positioned to punch above its weight, and size, in forging and cultivating global knowledge networks, partnerships and other linkages.

Meanwhile, the structural and fundamental weaknesses which are reflected in the near-bottom ranking within the 'Utilize Skills' pillar must in an equal measure inform regional public policy and planning. At present, labour and vocational skills have been increasingly recognized around the world as critical to enhancing employment prospects of population cohorts which have been particularly vulnerable in recent years – youth, women and older workers. **A long-term 'employable skills' strategy** closely involving government, labour and industry must be in place to ensure better skills outcomes, improved flexibility and mobility in the labour market, and resilience in the face of an uncertain future.

Relevant international best practices Bizkaia can draw on

Across the EU and globally, stakeholders and public-sector agencies responsible for formulating talent policies and initiatives have been addressing the following fundamental questions:

- ✓ What tools and strategies have worked well so far in developing a city or region's attractiveness for talents?
- ✓ How can business, academia and local authorities build an effective partnership for talent attraction and retention?
- ✓ What can different actors at national, regional and local level do to collaborate in recruiting skilled professionals and creative talent?
- ✓ What types of programs have been successful when it comes to retaining students and visiting researchers after completing their studies or research projects?

In articulating answers to these questions, new and better practices in boosting cities' and regions' talent attractiveness have often coalesced around the following issues and topics:

If we demand data, we need to *collect* data – especially at sub-national levels

- As the centre of gravity in planning and metrics in general keeps shifting from national to sub-national levels, the onus is increasingly on local actors to **expand the scope and granularity of surveys, data collection and analysis**.

- New data sources including **big data** are another useful stream of information that can expand the availability and quality of statistics at regional and city levels. There is a plethora of data to synthesize and translate into strategy. For instance, migration patterns, graduation rates, professional profiles and job ads may yield valuable information on real-time supply and demand in the regional labour market.

- In this pursuit, public agencies can take cues from corporations, who now use an array of public data to study and forecast trends. This includes **data gathered through social media,** which has made a visible leap into the boardroom of many leading companies. A LinkedIn's '*Economic Graph'*, for example, maps open jobs, skills, employers and schools.

- In addition, a number of real-time, bottom-up, self-reporting-based online tools such as Numbeo[2] have emerged recently, and have been quick to make their way into well-established printed indices on national as well as regional/city competitiveness. This trends is complemented by the growing online presence of real-time data aggregator engines such as Knoema[3], which harvest and merge data from international agencies like ILO, ITU and Eurostat.

Regional talent strategy should seek inspiration in organizational strategy

- Talent discourses at organizational level have been around for decades, and share a rich and layered history. As cities and regions come to the forefront in designing innovative talent strategies, they are well-advised to borrow and critically adapt from what has worked and what has been discarded in the way corporations and other organizations compete for talent.

- For instance, Harvard Business Review's seminal 2014 feature on '*Building a Game-Changing Talent Strategy*'[4] emphasized the need to address employees' "anxieties". That is precisely how the majority of international

[2] See https://numbeo.com for details.
[3] See https://knoema.com for details
[4] Downloadable from https://hbr.org/2014/01/building-a-game-changing-talent-strategy

talent view the prospect of relocating to a new location / environment / culture.

- Organizations have also recognized – albeit slowly – that every business landscape comes with multiple narratives. The "official story", typically propagated in a top-down fashion, reflects the management's narrative. There is a second narrative – informal, and built from the bottom up, which is often ignored in how organizations and senior management view their reality. Yet it is precisely this bottom-up narrative that serves as a place for employees to make sense of things, share stories and lessons, create meaning, interact with each other, and relate to their work place. The many dramatic failures we have seen over the past few years of organizational "change management" and "transformation" programs are very much a testament of companies and managers ignoring this "shadow", person-to-person narrative, thus failing to engage their employees' hearts and minds.

- Just like organizations, cities and regions come with their own local narratives, [often unspoken] values and codes of conduct, and general ways of getting things done. If – when facing the outside world including migrant talent – they choose to focus exclusively on the 'official' story as communicated by governments and industry, their talent strategies will inevitably run a substantial risk of repeating the failures mentioned above about the corporate world.

TalentCorp Malaysia

The *Malaysian Returning Expert Programme* (REP) targets very high-skilled Malaysians abroad and provides them with incentives to return to Malaysia. TalentCorp, the central facilitator of REP, recognizes that the returnees' motivations are primarily family-oriented (i.e. after years or decades spent abroad, they seek to be physically closer to their parents), and that despite tax incentives and other monetary measures involved, it is issues of safety, housing and children's education that will typically outweigh all other considerations.

The REP programme has worked with world-renowned, UK-based Malaysian designer Jimmy Choo as its ambassador.

Increasingly, a good business proposition comes with a story

- Today's discourse and general view of business is fast becoming dominated by social perspectives. This is partly in response to decades of what is now seen as generally 'under-socialized' business and management theory. In other words, business is a social place. It is not only about maximizing value and realizing a profit, but just as importantly, about people coming together, engaging with each other and in the process, learning, making sense of things, and creating as well as adapting to new social realities and patterns. For governments, citizens, local communities and many other stakeholders, "business" is synonymous with "business in society".

- In the same vein, organizational theory has put forward the view of organizational behaviour revolving around shared meanings, symbols, group "rituals", and of managers acting as "myth-makers" whose narratives, stories and parables capture the collective imagination and serve as the group's rallying cry. This is an another area where cities and regions have a lot to emulate, in particular along the following lines:
    - If external talents are to establish local roots, they expect to be engaged at all levels, including emotionally. Even through their employment and day-to-day work, they want to be part of a story that transcends the present as well as one's economic and monetary self-interest.
    - Some stories are recent and topical but compelling nonetheless. For example, there are regions (not necessarily urban ones) that rightfully pride themselves on staging a successful economic recovery and reducing unemployment following the financial crisis of 2008 – 2009. Examples are briefly described in the box below.

Popular culture artefacts inspiring global interest

Trinidad & Tobago's pioneering feature-length documentary on the islands' calypso tradition, *Calypso Rose: Lioness of the Jungle*, has enjoyed several international screenings and met with critical acclaim, achieving ground breaking international success. The movie was screened on PBS, the American Public Broadcasting Service, to an audience of a potential 150 million households, inspiring recognition of the country's tourism industry, history, and creative segments.

"Lost in Thailand"

This 2012 Chinese comedy film set in the Thai city of Chiang Mai has established the location as one of the hottest destinations for the fast-growing number of China's international travellers. The Association of Thai Travel Agents expressed confidence that the film which earned nearly US$ 200 million at the Chinese box office, becoming the highest-grossing Chinese film ever, could help increase tourist arrivals from China by 10 per cent in one year.

Belknap on the map

Big cities aren't the only ones in the talent attraction game. Belknap County, New Hampshire, a rural area two hours north of Boston, recently launched a talent attraction initiative. The program aims to "bring home" young professionals who grew up in the area and have moved away.

Building cultural awareness is a key prerequisite for success

- Of course, a vision, a powerful story or a historical myth will not be enough to attract or retain talent if a foundation has not been laid for accepting and integrating newcomers from different cultural backgrounds. It is therefore essential to promote mutual cultural understanding between those who are new to a place and the host population.
- Reciprocity is a key factor: both those who move to a place and the local population (as well as foreign students vis-à-vis local teachers, or incoming employees vis-à-vis local employers) need to improve their reciprocal cultural intelligence. There is a number of cognitive, behavioural and practical bridges to be built, connecting both the commonalities and the gaps and differences between the two cohorts considered.
- Local civil society, media and other stakeholders can play a key role in strengthening cultural awareness, challenging stereotypes and changing prevalent attitudes if necessary, especially in times of slower economic growth.

What happens in times of crisis and downturn?

- Much of management theory and the capitalist system itself is predicated upon continued growth. During times of crisis and slowdown, not only individuals but entire industries, cities and regions can be caught off guard. Without proper crisis planning and communication strategies in place, established dialogs, relationships and general orders of things can unravel quickly, exposing severe cracks and weaknesses in the process.
- Communicating – the right messages, to the right audiences, and the right time – is essential during a crisis. Yet PR and communication muscle can only go that far. It cannot make up for trust and goodwill that should have been built and cemented during times of prosperity but has now come under considerable strain.
- Cautionary tales illustrating what happens to foreign talent during economic downturns are aplenty, and come from all corners of the world. Singapore, for instance, as a small and open entrepôt of global business and trade has been highly vulnerable to boom-and-bust cycles. In the past 10-15 years alone, it has weathered the SARS epidemic, dotcom meltdown and several recessions, some on a scale not seen since achieving full independence in 1965. Although the centralized response to these shocks has generally received praise from the international community, at the individual level the experience was often harrowing: expatriates and other international talents

reported having their employment passes cancelled at 14 days' notice, or applications to renew their permanent resident status rejected.

- Meanwhile in the Middle East, during the 2008/2009 crisis, a number of Dubai expatriates found themselves jailed in "debtors' prisons" for negligible amounts of credit card debt.
- Needless to say, ill-conceived and kneejerk measures, especially when targeted at foreigners, stress all the possible tensions already identified in this. In one fell swoop, trust, goodwill and a sense of belonging are instantly destroyed. At the same time, self-perceptions become entrenched among foreign talents as resented and disposable resources whose chief mandate is to contribute to the host country's tax coffers. A city (or country) long-term talent strategy can be permanently damaged instantaneously if economic downturns have not been part of a scenario-planning exercise.

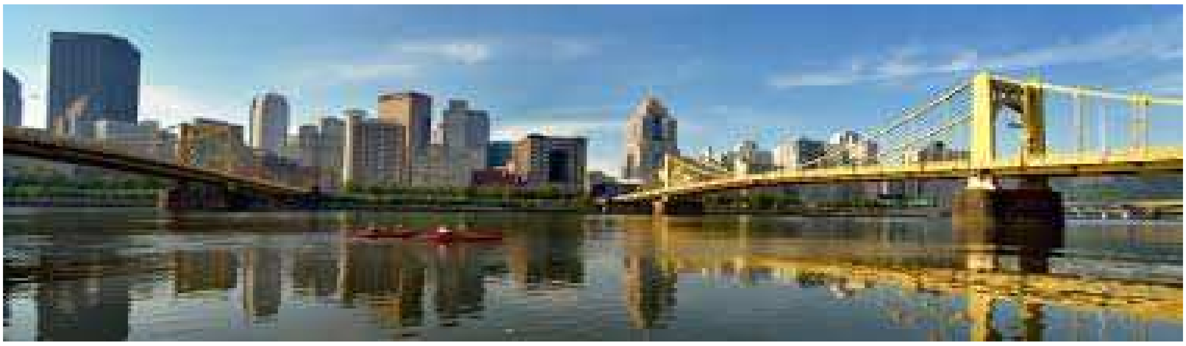
A take of two cities facing hard times

Facing unemployment challenges : Espoo (Finland)

The engagement of the city of Espoo in the retention of the laid-off employees of Nokia was reflected by the creation of the "*Task force for the structural change in the Metropolitan area*". This network-based collaboration model gathered companies, educational institutions and career planning services. The aim of this collaborative action was to survey the skill and recruitment requirements of companies in the metropolitan area in order to provide advices and trainings to Nokia's laid off employees on how to meet those requirements. The success of the initiative is illustrated by the high number of former Nokia employees who found new career paths and employment opportunities thanks to the program.

Imagine Pittsburgh

A powerful job aggregator that continually searches 825 "help wanted" sources for new job openings. The result is an average of 22,000 area jobs posted on the "Imagine Pittsburgh" website.



III. Action points for Bizkaia to grow, attract and retain talent

In view of the analysis outlined in the previous sections of this study, near- and medium-term actionable targets where Bizkaia can achieve fast and visible results include the following:

Expand local data collection efforts

- The more data is systematically collected and published at Bizkaia level, the easier it will be to include and assess the region/city's performance in international indices and comparative studies.
- Events and other initiatives do not automatically result in data capture and aggregation. For example, although Bilbao has been widely recognized as a success story in environmental rehabilitation, and has hosted numerous conferences on the topic, it has not been included in the EIU Green City Index and similar publications. This makes reliable, apples-to-apples analyses and comparisons with other cities and regions difficult.
- In this age of instant, real-time information and online access, a lot can be done at virtually zero cost: online data aggregators such as Numbeo.com, for example, display Bilbao statistics on a number of indicators with a "warning" of "*There is currently not enough information available on Bilbao*", and encourage visitors to consider using national-level data for Spain as a proxy.
- To rectify this situation, local agencies, universities and chambers of commerce can encourage expatriates living and working in Bilbao to make the city's online statistics footprint more robust simply by filling out quick surveys of their perception (of the city's environment, safety, commuting time etc.) and/or, on a very practically level, submitting rental or restaurant receipts or any other data points that reflect the local cost of living. The 'social network' approach mentioned earlier could be effective here.

Map and address the region's skills composition : open data can help

- The skills profile of local population and work force is not amenable to quick change. Nonetheless, local government, through a dialog with industry and the education sector, can intensify and improve **the mapping of local skills availability and diversity**, and explore how this fits into current as well as projected demand-and-supply considerations.

- The availability of **regional skills assessments** is critical to enable education providers to equip local students with the required skill-sets. A necessary ingredient in this type of strategies is the open data policy and approach including open cloud, source, codes, platforms and other defined issues in this space.
- Both of these approaches can efficiently lean on an extended practice of open data, especially from local public authorities (**open gov/data gov**).

Set measurable targets

- An index ranking is an indicator of the effectiveness of ongoing initiatives; it is not the be-all and end-all.
- Nevertheless, the old business dictum of "*what gets measured gets done*" still applies. A regional talent competitiveness strategy calls for a number of macro, micro and also human-centred objectives to be articulated and quantified, for instance:
    - Increase in number of international professionals and researchers
    - Number of international professionals and researchers who will move to our region by year 2017
    - Average length of stay in the region
    - Increase in the number of international full degree Master's students and PhD students in the region
    - Percentage of all skilled foreign nationals stating that they are very satisfied with their arrival experience in Bizkaia

Pick your best practices : one size does not fit all…

- For all the best practices and success stories that a region can emulate, an effective talent strategy is rarely the result of ticking boxes. Indeed, there are multiple pathways to economic/talent competitiveness and prosperity.
- In addition, once-radical concepts such as "*moving up the value chain*" or "*blue ocean*" have become conventional wisdom: strategies that a few years ago were seen as trend-setting and innovative, such as forging partnerships between business and academia; setting up innovation clusters; promoting

virtuous cycles of education and employment, are now commonplace from emerging Europe to Sub-Saharan Africa.

… and therefore, priorities and target segments are key : select yours !

- The EU talent marketplace is not only crowded but historically handicapped by low mobility: according to Eurobarometer, fewer than 10% of EU citizens have worked abroad. The mobility of professionals in general has been similarly unimpressive to date.
- In order to overcome this, specialization (often involving unusual and so-called non-sector markets) will go a long way towards attracting the right talent to Bizkaia. Customized strategies may be required to target talents of specific kinds, and sometimes of specific origins (e.g. Latin American countries which share a language and cultural affinity with Bizkaia).
- Another way to customize the approach is to differentiate between active and passive jobseekers. Initiatives can also be explored in providing a single point of entry / "no wrong door" policy in promoting employment opportunities in the region's clusters.

Continue learning through international cooperation

- Bilbao and Bizkaia's high performance in this study's Global Knowledge sub-index/pillar shows a natural fit with building linkages not only across EU but indeed globally.
- In addition to existing networks and platforms, new models and formats of international cooperation can be forged on the basis of a number of considerations – linguistic (with cities and regions located in other Spanish-speaking countries), cultural/geographic (with neighbouring regions), academic (through universities and institutions of higher learning) and functional/industrial (e.g. building on Bilbao/Bizkaia's expertise and track record in environmental issues).

Draw on demonstrated strengths in the ability to retain foreign talent

- This study has brought out Bizkaia's considerable success in retaining expatriate talent. The task is now to translate this achievement into communication strategies that will help cement what has been accomplished, and generate the 'virtuous cycle' in which success calls for more success, and talent brings more talent.
- It is important to keep regional talent informed about how they are contributing to regional goals, preferably through personable, human-centric messages.
- From there on, this reservoir of human capital and goodwill can be tapped to tackle broader social challenges and foster additional social innovation. The best approach will be to involve the talents themselves in understanding their needs, and designing services and support measures that will make their day-to-day lives in Bizkaia easier and more rewarding.

Use the above as direct input into Bizkaia's branding

- Effective communication strategies/campaigns typically incorporate elements of identity, image and reputation. The arguments they deploy are both rational and emotional, communicating the region's imagery, values and quality of life. The purpose of internal branding and profiling, or identity building, is to make talents residing in the location more proud of the place and, hence, more inclined to stay.
- In this context, it is important to ask the question: what is the story of the Basque Country? How coherent and well-told is it? What does it say about overcoming diversity, tackling challenges and enemies along the way, and emerging stronger, battle-hardened and optimistic about the future?
- If there are chapters in this story that involve a troubled past and periods including violent conflict, the region needs to 'own' them, elaborate on them and continually re-interpret them, rather than seek to sweep them under the rug.
- To that end, it is useful to study successful communication strategies deployed by tourism, hospitality and lifestyle industries. It is also healthy to gauge existing as well as prospective skilled workers and migrants' perception of Bizkaia's history, recent developments and future prospects. These provide guidance and direct input into the region's popular and social media.

- Authenticity is a crucial factor – especially given that many regions may soon have come up with their own branding, campaigns and taglines. The authentic approach may draw not only on the historical context but also on elements such as local family businesses and their traditional, often unwritten ('tacit') knowledge and values. Once the approach of authenticity in branding has been identified and established, its products can be transmitted through popular and social media as well as by word of mouth.
- The question at every step of executing on the branding strategy should be: what is the most effective? Push and pull factors need to be considered. A balance needs to be found between 'imported solutions' and 'local innovations'; the former may offer quick fixes through picking among proven best practices, whereas the latter can room for trial-and-error, while creating a higher level of engagement.
- If relevant, actively consider differences in communication styles between rules- and facts-based, linear cultures to relationship-based, multi-active cultures.

Involve champions, ambassadors and diaspora

- The world is coming to Bizkaia – and the Basque diaspora can be a valuable resource in spreading the message. With the proliferation of information and communication technology, Basque Country is no longer considered "far away" – the main factor behind many in the current generation having lost contact with their ancestors' homeland and language.
- In addition to Basque communities in established immigrant societies such as Argentina and West USA, there are pockets of long-standing Basque presence elsewhere, with some enjoying a strong reputation for business acumen and success.
- For instance, in the Philippines, families of Basque origins such as the Ayala and the Aboitiz clans have established the country's leading family-owned business conglomerates. In 2014, the Ayala family, currently in its seventh generation as a business owner, received at a ceremony held in Dubai the prestigious global Lombard Odier Family Business Award. The Philippine capital city Manila's upscale business and residential enclaves include Legazpi, Salcedo, and Urdaneta.

IV. Summary and conclusions

Based on the data and analyses presented on this report, we hence have identified nine areas for action, namely:

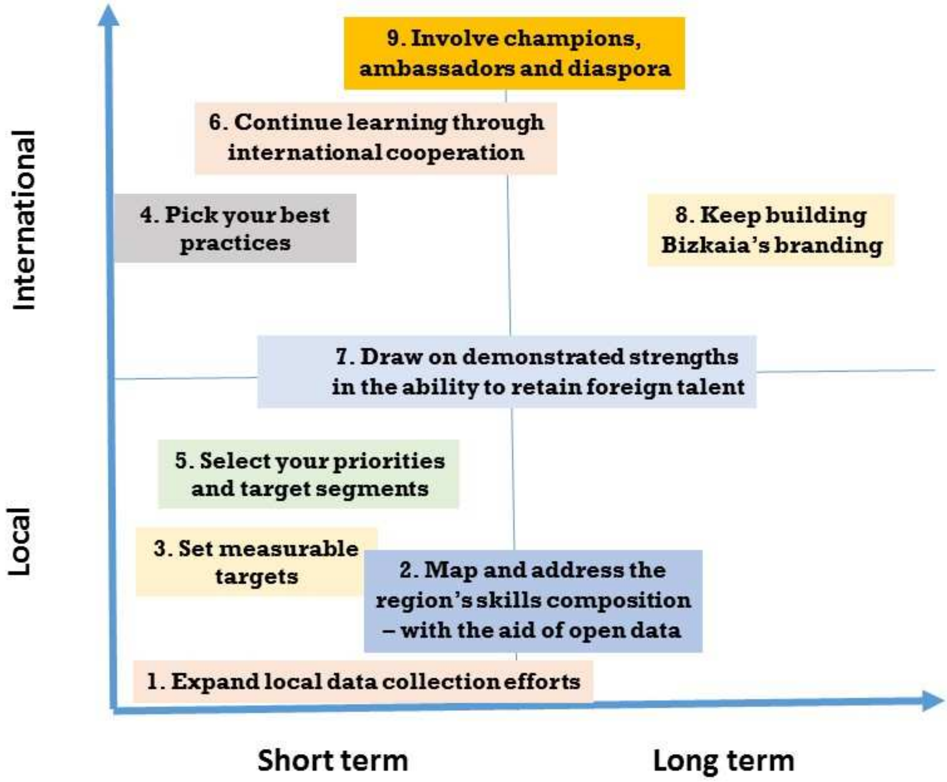
1. Expand local data collection efforts
2. Map and address the region's skills composition – with open data
3. Set measurable targets
4. Pick your best practices
5. Select priorities and target segments
6. Continue learning through international cooperation
7. Draw on demonstrated strengths in the ability to retain foreign talent
8. Keep building Bizkaia's branding
9. Involve champions, ambassadors and diaspora

To enhance local efforts in attracting and retaining talent, relevant players of the Bizkaia region now need to agree on a set of concerted actions. With this objective in mind, it will be essential to sequence actions and initiatives in ways that will ensure optimal implementation and generate best results.

A possible first step to do this is to build a 'roadmap' of required actions, while identifying some 'low hanging fruit' which can help build rapid success, and thus entail further engagement from relevant stakeholders.

The diagram below describes one practical suggestion in this regard. It consists of a simple division between '1) what can be done locally vs what will necessitate 'outreach' and international cooperation (vertical axis), and (2) what should be expected to be feasible (and successful) in the short run vs what will require more time.

In this diagram, 'low hanging fruit' can be identified in the lower left hand part of the 2x2 space proposed, because they can be addressed through local action, and within a relatively short period of time.



Local stakeholders will need to make such decisions by themselves, taking into account their own respective experiences, knowledge, constraints, mandates and objectives. Discussions among them may lead to a different definition of 'low hanging fruit': for instance, efforts already carried out by Bizkaia Talent in terms of outreach and international cooperation might be seen as 'ripe for the picking', and a good basis for additional initiatives vis-à-vis specific geographies or counterparts. Similarly, local stakeholders may very well identify other ways of defining the space (horizontal and vertical axes) in which such actions and their sequencing should be assessed.

The bottom line is that Bizkaia is currently ahead of the curve in terms of developing a local talent strategy. However, other regions and other cities around the world are moving very fast to occupy that same space. Making the best of Bilbao's and Bizkaia's past success and achievements is hence an urgent priority to stay in the lead of talent competitiveness in the coming years.

December 2016

V. Annexes, references

V.A - ECTCI: Data per pillar (ranked according to ECTCI total score)

No.	City	SCORE IN PILLAR ONE: ENABLE	1.1 Gross expenditure on R&D (% of GDP)	Score	1.2 ICT access (% of households with internet access at home)	Score	1.3 Forbes Global 2000 companies	Score
1	Copenhagen	**67.8**	4.95%	100.0	91%	89.1	14.2	41.6
2	Zurich	**62.2**	3.00%	59.9	95%	97.8	29.0	85.0
3	Helsinki	**62.0**	3.98%	80.0	95%	97.8	8.3	24.3
4	Gothenburg	**56.0**	3.66%	73.5	91%	89.1	5.4	15.8
5	Madrid	**39.3**	1.75%	34.2	86%	78.3	5.4	15.8
6	Paris	**54.6**	2.90%	57.8	87%	80.4	25.6	75.1
7	Eindhoven	**54.0**	2.64%	52.9	96%	100.0	9.0	26.4
8	Dublin	**58.4**	n/a	n/a	88%	82.6	34.1	100.0
9	Cardiff	**35.9**	1.17%	22.2	88%	82.6	2.9	8.5
10	Berlin	**54.9**	3.55%	73.0	92%	91.3	0.3	0.9
11	Vienna	**36.1**	1.60%	31.1	84%	73.9	3.4	10.0
12	London	**40.0**	1.00%	18.7	93%	93.5	7.9	23.2
13	Birmingham	**39.4**	1.67%	32.5	89%	84.8	0.9	2.6
14	**Bilbao**	**38.6**	2.09%	41.2	83%	71.7	2.9	8.5
15	Barcelona	**33.4**	1.50%	29.0	81%	67.4	3.8	11.1
16	Brno	**37.8**	2.86%	57.0	76%	56.5	0.0	0.0
17	Tallinn	**41.9**	2.18%	43.0	88%	82.6	0.0	0.0
18	Hanover	**51.9**	2.84%	56.6	92%	91.3	7.8	22.9
19	Krakow	**24.9**	1.30%	24.9	n/a	n/a	0.0	0.0
20	Bologna	**34.4**	1.65%	32.1	79%	63.0	8.0	23.5
21	Nantes	**33.8**	1.22%	23.2	86%	78.3	0.0	0.0
22	Kiel	**39.9**	1.47%	28.4	92%	91.3	0.0	0.0
23	Riga	**22.7**	0.66%	11.7	76%	56.5	0.0	0.0
24	Zaragoza	**25.1**	0.90%	16.7	77%	58.7	0.0	0.0
25	Milan	**30.1**	1.30%	24.9	78%	60.9	4.6	13.5
26	Turin	**31.8**	1.98%	38.9	75%	54.3	2.2	6.5
27	Valletta	**28.4**	0.84%	15.4	81%	67.4	2.5	7.3

No.	City	SCORE IN PILLAR TWO: ATTRACT	2.1 GDP per capita (USD)	Score	2.2 Quality of life	Score	2.3 Environmental quality	Score
1	Copenhagen	**80.4**	49,019	58.6	82.5	82.7	87.3	100.0
2	Zurich	**95.2**	82,410	100.0	88.0	92.2	82.3	93.5
3	Helsinki	**74.6**	51,454	61.6	76.6	72.4	79.3	89.7
4	Gothenburg	**70.4**	41,354	49.1	78.7	76.1	76.5	86.0
5	Madrid	**69.2**	41,554	49.3	83.5	84.4	67.1	73.9
6	Paris	**81.4**	59,611	71.7	87.1	90.6	73.2	81.8
7	Eindhoven	**77.0**	44,412	52.9	86.1	88.9	78.9	89.1
8	Dublin	**60.1**	55,270	66.3	67.7	57.0	54.0	56.9
9	Cardiff	**62.9**	31,470	36.8	86.1	88.9	n/a	n/a
10	Berlin	**74.1**	37,701	44.5	85.9	88.6	79.0	89.3
11	Vienna	**80.1**	47,307	56.5	86.2	89.1	83.3	94.8
12	London	**76.4**	54,383	65.2	83.5	84.4	71.6	79.7
13	Birmingham	**56.2**	32,396	38.0	75.0	69.7	57.1	60.9
14	**Bilbao**	**62.3**	38,047	45.0	80.7	79.5	n/a	n/a
15	Barcelona	**46.4**	36,125	42.6	66.3	54.6	42.4	41.9
16	Brno	**52.8**	27,276	31.6	74.3	68.5	55.1	58.3
17	Tallinn	**46.7**	18,783	21.1	71.3	63.3	53.0	55.6
18	Hanover	**26.9**	45,189	53.8	n/a	n/a	n/a	n/a
19	Krakow	**34.8**	25,997	30.0	61.0	45.4	32.4	29.0
20	Bologna	**60.0**	47,670	56.9	74.5	68.8	52.0	54.3
21	Nantes	**70.3**	37,082	43.8	90.7	96.9	n/a	n/a
22	Kiel	**n/a**	n/a	n/a	n/a	n/a	n/a	n/a
23	Riga	**44.5**	21,103	24.0	60.9	45.2	59.6	64.2
24	Zaragoza	**69.7**	33,587	39.4	92.5	100.0	n/a	n/a
25	Milan	**46.2**	57,074	68.6	58.9	41.8	31.9	28.3
26	Turin	**36.3**	38,237	45.2	62.0	47.1	22.7	16.4
27	Valletta	**40.4**	22,780	26.0	67.2	56.2	40.2	39.1

No.	City	SCORE IN PILLAR THREE: GROW	3.1 Major universities	Score	3.2 Vocational enrolment (%)	Score	3.3 Tertiary enrolment (%)	Score	3.4 % of individuals in social networks	Score
1	Copenhagen	**92.5**	35	90.0	34.2%	93.6	98.8%	88.8	71%	97.4
2	Zurich	**62.2**	20	100.0	34.6%	94.7	36.4%	30.3	43%	23.7
3	Helsinki	**78.5**	67	80.0	23.9%	65.0	97.2%	87.3	65%	81.6
4	Gothenburg	**71.5**	151	60.0	31.0%	84.7	62.2%	54.5	67%	86.8
5	Madrid	**77.7**	12	88.0	23.9%	65.0	110.8%	100.0	56%	57.9
6	Paris	**54.5**	36	90.0	19.7%	53.3	58.3%	50.8	43%	23.7
7	Eindhoven	**50.7**	301	40.0	16.5%	44.4	63.1%	55.3	58%	63.2
8	Dublin	**55.5**	151	60.0	16.2%	43.6	71.2%	62.9	n/a	n/a
9	Cardiff	**70.6**	151	60.0	36.5%	100.0	47.7%	40.9	65%	81.6
10	Berlin	**43.5**	301	40.0	18.9%	51.1	61.6%	53.9	45%	28.9
11	Vienna	**29.7**	151	60.0	10.8%	28.6	19.5%	14.5	40%	15.8
12	London	**67.3**	18	100.0	9.7%	25.6	61.9%	54.2	68%	89.5
13	Birmingham	**66.1**	101	70.0	35.6%	97.5	45.5%	38.9	56%	57.9
14	**Bilbao**	**46.3**	401	30.0	19.7%	53.3	90.4%	80.9	42%	21.1
15	Barcelona	**67.2**	16	84.0	18.3%	49.4	89.5%	80.1	55%	55.3
16	Brno	**35.2**	0	0.0	15.3%	41.1	87.8%	78.5	42%	21.1
17	Tallinn	**41.3**	0	0.0	19.3%	52.2	76.7%	68.1	51%	44.7
18	Hanover	**37.4**	301	40.0	17.5%	47.2	42.4%	36.0	44%	26.3
19	Krakow	**60.4**	301	40.0	28.0%	76.4	73.2%	64.8	n/a	n/a
20	Bologna	**47.1**	201	50.0	20.8%	56.4	80.5%	71.6	38%	10.5
21	Nantes	**31.4**	0	0.0	23.1%	62.8	54.1%	46.9	40%	15.8
22	Kiel	**42.1**	151	60.0	14.5%	38.9	41.7%	35.3	47%	34.2
23	Riga	**44.0**	0	0.0	25.3%	68.9	65.1%	57.2	53%	50.0
24	Zaragoza	**49.2**	401	30.0	20.2%	54.7	78.7%	69.9	50%	42.1
25	Milan	**58.8**	25	75.0	36.0%	100.0	62.5%	54.8	36%	5.3
26	Turin	**40.6**	151	60.0	22.2%	54.7	54.8%	47.6	34%	0.0
27	Valletta	**25.5**	0	0.0	6.7%	17.2	41.2%	34.8	53%	50.0

No.	City	SCORE IN PILLAR FOUR: RETAIN	4.1 Personal safety score	Score	4.2 Physicians per 1,000 people	Score	4.3 Monthly expenses for four-person family (EUR)	Score	4.4 Rent per month, 3-bedroom apt city centre	Score
1	Copenhagen	**63.4**	84.4	90.0	4.4	51.5	3,157	46.9	2,119	65.3
2	Zurich	**45.2**	76.6	77.0	5.0	60.3	4,994	0.0	3,168	43.4
3	Helsinki	**63.7**	77.0	77.7	4.4	51.5	2,884	53.9	1,803	71.8
4	Gothenburg	**58.0**	60.0	49.4	3.9	44.1	2,829	55.3	1,264	83.1
5	Madrid	**65.3**	65.8	59.1	4.4	51.5	2,296	68.9	1,326	81.8
6	Paris	**55.7**	71.3	68.2	4.0	45.6	3,162	46.8	2,268	62.2
7	Eindhoven	**63.3**	80.6	83.7	2.3	20.6	2,443	65.2	1,238	83.6
8	Dublin	**50.9**	52.8	37.4	n/a	n/a	2,993	51.1	2,169	64.2
9	Cardiff	**71.5**	65.5	58.6	n/a	n/a	2,328	68.1	1,041	87.7
10	Berlin	**66.6**	66.6	60.4	4.9	58.8	2,444	65.1	1,312	82.1
11	Vienna	**79.0**	83.8	89.0	6.9	88.2	2,536	62.8	1,603	76.0
12	London	**51.3**	77.4	78.4	n/a	n/a	3,169	46.6	3,871	28.8
13	Birmingham	**61.0**	51.5	35.3	n/a	n/a	2,409	66.0	1,337	81.5
14	**Bilbao**	**77.6**	88.6	97.0	4.9	58.8	2,301	68.8	1,127	85.9
15	Barcelona	**69.9**	78.4	80.0	4.2	48.5	2,354	67.4	1,235	83.7
16	Brno	**76.3**	77.9	79.2	3.7	41.2	1,527	88.6	628	96.3
17	Tallinn	**73.1**	82.5	86.9	3.3	35.3	1,995	76.6	750	93.8
18	Hanover	**64.0**	67.4	61.7	3.5	38.2	n/a	n/a	824	92.2
19	Krakow	**68.9**	73.0	71.0	2.3	20.6	1,466	90.1	742	93.9
20	Bologna	**63.8**	65.3	58.2	4.1	47.1	2,540	62.7	1,059	87.3
21	Nantes	**62.3**	69.9	65.9	2.8	27.9	2,440	65.2	930	90.0
22	Kiel	**65.2**	n/a	n/a	3.9	44.1	n/a	n/a	1,108	86.3
23	Riga	**67.5**	68.5	63.6	3.1	32.4	1,953	77.7	630	96.3
24	Zaragoza	**69.8**	n/a	n/a	3.9	44.1	2,301	68.8	612	96.6
25	Milan	**58.2**	70.9	67.6	3.6	39.7	2,721	58.1	2,018	67.4
26	Turin	**56.4**	50.1	32.9	3.5	38.2	2,444	65.1	963	89.3
27	Valletta	**68.7**	78.3	79.9	3.5	38.2	n/a	n/a	1,033	87.9

No.	City	SCORE IN PILLAR FIVE: UTILIZE SKILLS	5.1 Labour force with 2ndary education	Score	5.2 Population with 2ndary education	Score
1	Copenhagen	**41.0**	36.4%	40.8	35.6%	41.1
2	Zurich	**57.6**	49.3%	62.0	42.8%	53.2
3	Helsinki	**44.5**	39.4%	45.7	36.9%	43.3
4	Gothenburg	**56.6**	46.5%	57.4	44.4%	55.8
5	Madrid	**23.2**	25.7%	23.2	24.9%	23.2
6	Paris	**48.6**	43.6%	52.6	37.7%	44.6
7	Eindhoven	**50.0**	42.0%	50.0	40.9%	50.0
8	Dublin	**34.5**	37.1%	41.9	27.2%	27.1
9	Cardiff	**51.5**	44.2%	53.6	40.5%	49.3
10	Berlin	**70.5**	57.8%	76.0	49.9%	65.0
11	Vienna	**72.2**	54.2%	70.1	55.4%	74.2
12	London	**41.7**	42.9%	51.5	30.0%	31.8
13	Birmingham	**51.2**	43.9%	53.1	40.5%	49.3
14	**Bilbao**	**17.1**	21.8%	16.8	21.4%	17.4
15	Barcelona	**16.5**	22.1%	17.3	20.4%	15.7
16	Brno	**100.0**	72.4%	100.0	70.8%	100.0
17	Tallinn	**68.1**	53.0%	68.1	n/a	n/a
18	Hanover	**85.9**	62.8%	84.2	63.4%	87.6
19	Krakow	**88.2**	64.0%	86.2	64.9%	90.1
20	Bologna	**59.6**	48.6%	60.9	45.8%	58.2
21	Nantes	**63.6**	50.4%	63.8	48.9%	63.4
22	Kiel	**87.7**	63.7%	85.7	64.6%	89.6
23	Riga	**70.6**	58.7%	77.5	49.1%	63.7
24	Zaragoza	**24.5**	26.7%	24.8	25.4%	24.1
25	Milan	**47.9**	46.7%	57.7	33.7%	38.0
26	Turin	**57.7**	47.8%	59.5	44.4%	55.8
27	Valletta	**16.0**	31.0%	31.9	11.0%	0.0

No.	City	SCORE IN PILLAR SIX: BUILD GLOBAL KNOWLEDGE	6.1 Tertiary-educated workforce	Score	6.2 Tertiary-educated population	Score	6.3 Airport connectivity	Score
1	Copenhagen	**76.5**	43.8%	65.7	48.1%	95.2	47.3	68.7
2	Zurich	**70.8**	34.3%	47.6	34.8%	64.8	68.6	100.0
3	Helsinki	**53.2**	47.5%	72.7	27.3%	47.7	27.3	39.2
4	Gothenburg	**56.1**	37.0%	52.8	50.2%	100.0	11.3	15.6
5	Madrid	**63.1**	49.0%	75.5	47.2%	93.2	14.8	20.7
6	Paris	**44.6**	33.7%	46.5	26.0%	44.7	29.5	42.4
7	Eindhoven	**44.0**	32.1%	43.5	33.2%	61.2	19.3	27.4
8	Dublin	**54.8**	41.5%	61.3	21.5%	34.5	47.3	68.7
9	Cardiff	**39.0**	36.5%	51.8	33.1%	61.0	3.5	4.2
10	Berlin	**29.4**	28.1%	35.9	26.0%	44.7	5.9	7.7
11	Vienna	**37.1**	31.0%	41.4	29.1%	51.8	13.1	18.3
12	London	**35.8**	38.1%	54.8	24.3%	40.9	8.6	11.7
13	Birmingham	**44.1**	33.4%	45.9	38.8%	74.0	9.2	12.5
14	**Bilbao**	**63.3**	51.3%	79.9	47.0%	92.7	12.4	17.2
15	Barcelona	**54.2**	39.4%	57.3	37.0%	69.9	24.8	35.5
16	Brno	**22.3**	23.7%	27.5	23.3%	38.6	1.3	0.9
17	Tallinn	**43.3**	37.2%	53.1	37.2%	70.3	5.0	6.3
18	Hanover	**26.1**	22.8%	25.8	23.0%	37.9	10.7	14.7
19	Krakow	**32.1**	31.0%	41.4	27.3%	47.7	5.5	7.1
20	Bologna	**24.9**	20.1%	20.7	18.7%	28.1	18.4	26.0
21	Nantes	**40.8**	33.0%	45.2	30.4%	54.8	15.9	22.4
22	Kiel	**22.3**	23.2%	26.6	23.4%	38.8	1.7	1.4
23	Riga	**34.5**	31.1%	41.6	28.8%	51.1	8.1	10.9
24	Zaragoza	**40.7**	38.3%	55.2	35.7%	66.9	0.7	0.0
25	Milan	**17.0**	17.9%	16.5	12.8%	14.6	14.2	19.9
26	Turin	**14.7**	17.9%	16.5	16.2%	22.4	4.1	5.1
27	Valletta	**17.0**	20.9%	22.2	11.9%	12.6	11.7	16.2

V.B - ECTCI: Data per pillar (ranked according to pillar score)

No.	City	SCORE IN PILLAR ONE: ENABLE	1.1 Gross expenditure on R&D (% of GDP)	Score	1.2 ICT access (% of households with internet access at home)	Score	1.3 Forbes Global 2000 companies	Score
1	Dublin	**91.3**	n/a	n/a	88%	82.6	34.1	100.0
2	Zurich	**80.9**	3.00%	59.9	95%	97.8	29.0	85.0
3	Copenhagen	**76.9**	4.95%	100.0	91%	89.1	14.2	41.6
4	Paris	**71.1**	2.90%	57.8	87%	80.4	25.6	75.1
5	Helsinki	**67.4**	3.98%	80.0	95%	97.8	8.3	24.3
6	Eindhoven	**59.8**	2.64%	52.9	96%	100.0	9.0	26.4
7	Gothenburg	**59.5**	3.66%	73.5	91%	89.1	5.4	15.8
8	Hanover	**56.9**	2.84%	56.6	92%	91.3	7.8	22.9
9	Berlin	**55.1**	3.55%	73.0	92%	91.3	0.3	0.9
10	London	**45.1**	1.00%	18.7	93%	93.5	7.9	23.2
11	Madrid	**42.8**	1.75%	34.2	86%	78.3	5.4	15.8
12	Tallinn	**41.9**	2.18%	43.0	88%	82.6	0.0	0.0
13	**Bilbao**	**40.5**	2.09%	41.2	83%	71.7	2.9	8.5
14	Birmingham	**40.0**	1.67%	32.5	89%	84.8	0.9	2.6
15	Kiel	**39.9**	1.47%	28.4	92%	91.3	0.0	0.0
16	Bologna	**39.5**	1.65%	32.1	79%	63.0	8.0	23.5
17	Vienna	**38.3**	1.60%	31.1	84%	73.9	3.4	10.0
18	Brno	**37.8**	2.86%	57.0	76%	56.5	0.0	0.0
19	Cardiff	**37.8**	1.17%	22.2	88%	82.6	2.9	8.5
20	Barcelona	**35.8**	1.50%	29.0	81%	67.4	3.8	11.1
21	Nantes	**33.8**	1.22%	23.2	86%	78.3	0.0	0.0
22	Turin	**33.2**	1.98%	38.9	75%	54.3	2.2	6.5
23	Milan	**33.1**	1.30%	24.9	78%	60.9	4.6	13.5
24	Valletta	**30.0**	0.84%	15.4	81%	67.4	2.5	7.3
25	Zaragoza	**25.1**	0.90%	16.7	77%	58.7	0.0	0.0
26	Krakow	**24.9**	1.30%	24.9	n/a	n/a	0.0	0.0
27	Riga	**22.7**	0.66%	11.7	76%	56.5	0.0	0.0

No.	City	SCORE IN PILLAR TWO: ATTRACT	2.1 GDP per capita (USD)	Score	2.2 Quality of life	Score	2.3 Environmental quality	Score
1	Zurich	**95.2**	82,410	100.0	88.0	92.2	82.3	93.5
2	Paris	**81.4**	59,611	71.7	87.1	90.6	73.2	81.8
3	Copenhagen	**80.4**	49,019	58.6	82.5	82.7	87.3	100.0
4	Vienna	**80.1**	47,307	56.5	86.2	89.1	83.3	94.8
5	Eindhoven	**77.0**	44,412	52.9	86.1	88.9	78.9	89.1
6	London	**76.4**	54,383	65.2	83.5	84.4	71.6	79.7
7	Helsinki	**74.6**	51,454	61.6	76.6	72.4	79.3	89.7
8	Berlin	**74.1**	37,701	44.5	85.9	88.6	79.0	89.3
9	Gothenburg	**70.4**	41,354	49.1	78.7	76.1	76.5	86.0
10	Nantes	**70.3**	37,082	43.8	90.7	96.9	n/a	n/a
11	Zaragoza	**69.7**	33,587	39.4	92.5	100.0	n/a	n/a
12	Madrid	**69.2**	41,554	49.3	83.5	84.4	67.1	73.9
13	Cardiff	**62.9**	31,470	36.8	86.1	88.9	n/a	n/a
14	**Bilbao**	**62.3**	38,047	45.0	80.7	79.5	n/a	n/a
15	Dublin	**60.1**	55,270	66.3	67.7	57.0	54.0	56.9
16	Bologna	**60.0**	47,670	56.9	74.5	68.8	52.0	54.3
17	Birmingham	**56.2**	32,396	38.0	75.0	69.7	57.1	60.9
18	Brno	**52.8**	27,276	31.6	74.3	68.5	55.1	58.3
19	Tallinn	**46.7**	18,783	21.1	71.3	63.3	53.0	55.6
20	Barcelona	**46.4**	36,125	42.6	66.3	54.6	42.4	41.9
21	Milan	**46.2**	57,074	68.6	58.9	41.8	31.9	28.3
22	Riga	**44.5**	21,103	24.0	60.9	45.2	59.6	64.2
23	Valletta	**40.4**	22,780	26.0	67.2	56.2	40.2	39.1
24	Turin	**36.3**	38,237	45.2	62.0	47.1	22.7	16.4
25	Krakow	**34.8**	25,997	30.0	61.0	45.4	32.4	29.0
26	Hanover	**n/a**	45,189	53.8	n/a	n/a	n/a	n/a
27	Kiel	**n/a**	n/a	n/a	n/a	n/a	n/a	n/a

No.	City	SCORE IN PILLAR THREE: GROW	3.1Major universities	Score	3.2 Vocational enrolment (%)	Score	3.3 Tertiary enrolment (%)	Score	3.4 % of individuals in social networks	Score
1	Copenhagen	**92.5**	35	90.0	34.2%	93.6	98.8%	88.8	71%	97.4
2	Helsinki	**78.5**	67	80.0	23.9%	65.0	97.2%	87.3	65%	81.6
3	Madrid	**77.7**	12	88.0	23.9%	65.0	110.8%	100.0	56%	57.9
4	Gothenburg	**71.5**	151	60.0	31.0%	84.7	62.2%	54.5	67%	86.8
5	Cardiff	**70.6**	151	60.0	36.5%	100.0	47.7%	40.9	65%	81.6
6	London	**67.3**	18	100.0	9.7%	25.6	61.9%	54.2	68%	89.5
7	Barcelona	**67.2**	16	84.0	18.3%	49.4	89.5%	80.1	55%	55.3
8	Birmingham	**66.1**	101	70.0	35.6%	97.5	45.5%	38.9	56%	57.9
9	Zurich	**62.2**	20	100.0	34.6%	94.7	36.4%	30.3	43%	23.7
10	Krakow	**60.4**	301	40.0	28.0%	76.4	73.2%	64.8	n/a	n/a
11	Milan	**58.8**	25	75.0	36.0%	100.0	62.5%	54.8	36%	5.3
12	Dublin	**55.5**	151	60.0	16.2%	43.6	71.2%	62.9	n/a	n/a
13	Paris	**54.5**	36	90.0	19.7%	53.3	58.3%	50.8	43%	23.7
14	Eindhoven	**50.7**	301	40.0	16.5%	44.4	63.1%	55.3	58%	63.2
15	Zaragoza	**49.2**	401	30.0	20.2%	54.7	78.7%	69.9	50%	42.1
16	Bologna	**47.1**	201	50.0	20.8%	56.4	80.5%	71.6	38%	10.5
17	**Bilbao**	**46.3**	401	30.0	19.7%	53.3	90.4%	80.9	42%	21.1
18	Riga	**44.0**	0	0.0	25.3%	68.9	65.1%	57.2	53%	50.0
19	Berlin	**43.5**	301	40.0	18.9%	51.1	61.6%	53.9	45%	28.9
20	Kiel	**42.1**	151	60.0	14.5%	38.9	41.7%	35.3	47%	34.2
21	Tallinn	**41.3**	0	0.0	19.3%	52.2	76.7%	68.1	51%	44.7
22	Turin	**40.6**	151	60.0	22.2%	54.7	54.8%	47.6	34%	0.0
23	Hanover	**37.4**	301	40.0	17.5%	47.2	42.4%	36.0	44%	26.3
24	Brno	**35.2**	0	0.0	15.3%	41.1	87.8%	78.5	42%	21.1
25	Nantes	**31.4**	0	0.0	23.1%	62.8	54.1%	46.9	40%	15.8
26	Vienna	**29.7**	151	60.0	10.8%	28.6	19.5%	14.5	40%	15.8
27	Valletta	**25.5**	0	0.0	6.7%	17.2	41.2%	34.8	53%	50.0

No.	City	SCORE IN PILLAR FOUR: **RETAIN**	4.1 Personal safety score	Score	4.2 Physicians per 1,000 people	Score	4.3 Monthly expenses for four-person family (EUR)	Score	4.4 Rent per month, 3-bedroom apt city centre	Score
1	Vienna	**79.0**	83.8	89.0	6.9	88.2	2,536	62.8	1,603	76.0
2	**Bilbao**	**77.6**	88.6	97.0	4.9	58.8	2,301	68.8	1,127	85.9
3	Brno	**76.3**	77.9	79.2	3.7	41.2	1,527	88.6	628	96.3
4	Tallinn	**73.1**	82.5	86.9	3.3	35.3	1,995	76.6	750	93.8
5	Cardiff	**71.5**	65.5	58.6	n/a	n/a	2,328	68.1	1,041	87.7
6	Barcelona	**69.9**	78.4	80.0	4.2	48.5	2,354	67.4	1,235	83.7
7	Zaragoza	**69.8**	n/a	n/a	3.9	44.1	2,301	68.8	612	96.6
8	Krakow	**68.9**	73.0	71.0	2.3	20.6	1,466	90.1	742	93.9
9	Valletta	**68.7**	78.3	79.9	3.5	38.2	n/a	n/a	1,033	87.9
10	Riga	**67.5**	68.5	63.6	3.1	32.4	1,953	77.7	630	96.3
11	Berlin	**66.6**	66.6	60.4	4.9	58.8	2,444	65.1	1,312	82.1
12	Madrid	**65.3**	65.8	59.1	4.4	51.5	2,296	68.9	1,326	81.8
13	Kiel	**65.2**	n/a	n/a	3.9	44.1	n/a	n/a	1,108	86.3
14	Hanover	**64.0**	67.4	61.7	3.5	38.2	n/a	n/a	824	92.2
15	Bologna	**63.8**	65.3	58.2	4.1	47.1	2,540	62.7	1,059	87.3
16	Helsinki	**63.7**	77.0	77.7	4.4	51.5	2,884	53.9	1,803	71.8
17	Copenhagen	**63.4**	84.4	90.0	4.4	51.5	3,157	46.9	2,119	65.3
18	Eindhoven	**63.3**	80.6	83.7	2.3	20.6	2,443	65.2	1,238	83.6
19	Nantes	**62.3**	69.9	65.9	2.8	27.9	2,440	65.2	930	90.0
20	Birmingham	**60.9**	51.5	35.3	n/a	n/a	2,409	66.0	1,337	81.5
21	Milan	**58.2**	70.9	67.6	3.6	39.7	2,721	58.1	2,018	67.4
22	Gothenburg	**56.4**	50.1	32.9	3.5	38.2	2,444	65.1	963	89.3
23	Turin	**56.4**	50.1	32.9	3.5	38.2	2,444	65.1	963	89.3
24	Paris	**55.7**	71.3	68.2	4.0	45.6	3,162	46.8	2,268	62.2
25	London	**51.3**	77.4	78.4	n/a	n/a	3,169	46.6	3,871	28.8
26	Dublin	**50.9**	52.8	37.4	n/a	n/a	2,993	51.1	2,169	64.2
27	Zurich	**45.2**	76.6	77.0	5.0	60.3	4,994	0.0	3,168	43.4

No.	City	SCORE IN PILLAR FIVE: UTILIZE SKILLS	5.1 Labour force with 2ndary education	Score	5.2 Population with 2ndary education	Score
1	Brno	**100.0**	72.4%	100.0	70.8%	100.0
2	Krakow	**88.2**	64.0%	86.2	64.9%	90.1
3	Kiel	**87.7**	63.7%	85.7	64.6%	89.6
4	Hanover	**85.9**	62.8%	84.2	63.4%	87.6
5	Vienna	**72.2**	54.2%	70.1	55.4%	74.2
6	Riga	**70.6**	58.7%	77.5	49.1%	63.7
7	Berlin	**70.5**	57.8%	76.0	49.9%	65.0
8	Tallinn	**68.1**	53.0%	68.1	n/a	n/a
9	Nantes	**63.6**	50.4%	63.8	48.9%	63.4
10	Bologna	**59.6**	48.6%	60.9	45.8%	58.2
11	Turin	**57.7**	47.8%	59.5	44.4%	55.8
12	Zurich	**57.6**	49.3%	62.0	42.8%	53.2
13	Gothenburg	**56.6**	46.5%	57.4	44.4%	55.8
14	Cardiff	**51.5**	44.2%	53.6	40.5%	49.3
15	Birmingham	**51.2**	43.9%	53.1	40.5%	49.3
16	Eindhoven	**50.0**	42.0%	50.0	40.9%	50.0
17	Paris	**48.6**	43.6%	52.6	37.7%	44.6
18	Milan	**47.9**	46.7%	57.7	33.7%	38.0
19	Helsinki	**44.5**	39.4%	45.7	36.9%	43.3
20	London	**41.7**	42.9%	51.5	30.0%	31.8
21	Copenhagen	**41.0**	36.4%	40.8	35.6%	41.1
22	Dublin	**34.5**	37.1%	41.9	27.2%	27.1
23	Zaragoza	**24.5**	26.7%	24.8	25.4%	24.1
24	Madrid	**23.2**	25.7%	23.2	24.9%	23.2
25	**Bilbao**	**17.1**	21.8%	16.8	21.4%	17.4
26	Barcelona	**16.5**	22.1%	17.3	20.4%	15.7
27	Valletta	**16.0**	31.0%	31.9	11.0%	0.0

No.	City	SCORE IN PILLAR SIX: BUILD GLOBAL KNOWLEDGE	6.1 Tertiary-educated workforce	Score	6.2 Tertiary-educated population	Score	6.3 Airport connectivity	Score
1	Copenhagen	**76.5**	43.8%	65.7	48.1%	95.2	47.3	68.7
2	Zurich	**70.8**	34.3%	47.6	34.8%	64.8	68.6	100.0
3	**Bilbao**	**63.3**	51.3%	79.9	47.0%	92.7	12.4	17.2
4	Madrid	**63.1**	49.0%	75.5	47.2%	93.2	14.8	20.7
5	Gothenburg	**56.1**	37.0%	52.8	50.2%	100.0	11.3	15.6
6	Dublin	**54.8**	41.5%	61.3	21.5%	34.5	47.3	68.7
7	Barcelona	**54.2**	39.4%	57.3	37.0%	69.9	24.8	35.5
8	Helsinki	**53.2**	47.5%	72.7	27.3%	47.7	27.3	39.2
9	Paris	**44.6**	33.7%	46.5	26.0%	44.7	29.5	42.4
10	Birmingham	**44.1**	33.4%	45.9	38.8%	74.0	9.2	12.5
11	Eindhoven	**44.0**	32.1%	43.5	33.2%	61.2	19.3	27.4
12	Tallinn	**43.3**	37.2%	53.1	37.2%	70.3	5.0	6.3
13	Nantes	**40.8**	33.0%	45.2	30.4%	54.8	15.9	22.4
14	Zaragoza	**40.7**	38.3%	55.2	35.7%	66.9	0.7	0.0
15	Cardiff	**39.0**	36.5%	51.8	33.1%	61.0	3.5	4.2
16	Vienna	**37.1**	31.0%	41.4	29.1%	51.8	13.1	18.3
17	London	**35.8**	38.1%	54.8	24.3%	40.9	8.6	11.7
18	Riga	**34.5**	31.1%	41.6	28.8%	51.1	8.1	10.9
19	Krakow	**32.1**	31.0%	41.4	27.3%	47.7	5.5	7.1
20	Berlin	**29.4**	28.1%	35.9	26.0%	44.7	5.9	7.7
21	Hanover	**26.1**	22.8%	25.8	23.0%	37.9	10.7	14.7
22	Bologna	**24.9**	20.1%	20.7	18.7%	28.1	18.4	26.0
23	Brno	**22.3**	23.7%	27.5	23.3%	38.6	1.3	0.9
24	Kiel	**22.3**	23.2%	26.6	23.4%	38.8	1.7	1.4
25	Milan	**17.0**	17.9%	16.5	12.8%	14.6	14.2	19.9
26	Valletta	**17.0**	20.9%	22.2	11.9%	12.6	11.7	16.2
27	Turin	**14.7**	17.9%	16.5	16.2%	22.4	4.1	5.1

V.C - ECTCI: Definition and sources of variables

PILLAR	VARIABLE	SOURCE
Enable	1.1 Gross expenditure on R&D (% of GDP)	Eurostat, OECD, Knoema, national statistical bureaus, other local sources
	1.2 ICT access (% households with internet access at home)	Eurostat, Knoema
	1.3 Presence of Forbes Global 2000 companies	Forbes
Attract	2.1 GDP per capita	Eurostat, Global Metro Monitor, Oxford Economics, Moody's Analytics
	2.2 Quality of life	EIU Best Cities, Numbeo Quality of Life Index
	2.3 Environmental quality	EIU Best Cities, Numbeo Pollution Index
Grow	3.1 Major universities*	Times Higher Education (THE), Financial Times ranking of global MBA programmes / business schools*
	3.2 Vocational enrolment (%)	Eurostat, with GTCI scores used as a proxy where necessary
	3.3 Tertiary enrolment (%)	Eurostat, GTCI, national statistical bureaus
	3.4 Individuals in social networks (%)	Eurostat, Knoema
Retain	4.1 Personal safety score	EIU Safe Cities Index, Numbeo
	4.2 Physician density (physicians per 1,000 people)	WHO, Eurostat, OECD
	4.3 Monthly expenses for four-person family (normalised in euros)	Numbeo
	4.4 Rent per month, three-bedroom apartment in city centre (normalised in euros)	Numbeo
Utilise Skills	5.1 Workforce with secondary education (%)	Eurostat, GTCI
	5.2 Population with secondary education (%)	Eurostat, GTCI
Build Global Knowledge	6.1 Workforce with tertiary education (%)	Eurostat, GTCI
	6.2 Population with tertiary education (%)	UNESCO
	6.3 Airport connectivity (largest airport servicing the city; adjusted by population)	Airports Council International

* Cities that are hosts to universities ranked 1–25 in the world were awarded 100 points; 26–50: 90 points; 51–100: 80 points; 101–150: 70 points; 151–200: 60 points; 201–300: 50 points; 301–400: 40 points; 401–500: 30 points. In addition, business schools received points equal to (100 – Financial Times ranking). See http://rankings.ft.com/businessschoolrankings/global-mba-ranking-2016.