Sizing the EU App Economy

★ Eurapp

FINAL REPORT

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Abstract

Apps running on mobile and social platforms have transformed the global gaming market and disrupted the order of the technology industry. The emerging platforms and business models like app stores and freemium pricing are rippling through — if not ripping apart — enterprise tech sectors. A few Nordic companies are showing tremendous success from beyond Silicon Valley. But will the emerging app economy reboot a struggling Europe, jump-starting job growth and infusing European Union countries with startup energy? This report focuses on sizing and qualifying the EU app ecosystem, with an eye toward revenue generation, jobs supported, and the bottlenecks still facing EU app developers. The report presents the key findings from our analysis, which is based in part on two surveys of developers targeting EU markets.

Executive summary

Apps running on mobile and social platforms have transformed the global gaming market and disrupted the order of the technology industry. The emerging platforms and business models like app stores and freemium pricing are rippling through — if not ripping apart — enterprise tech sectors. A few Nordic companies — including Rovio, King.com, and Supercell — are showing tremendous success from beyond Silicon Valley. But will the emerging app economy reboot a struggling Europe, jump-starting job growth and infusing European Union countries with startup energy? Signs are promising.

This report focuses on sizing and qualifying the EU app ecosystem, with an eye toward revenue generation, jobs supported, and the bottlenecks still facing EU app developers. Key findings from our analysis, which is based in part on two surveys of developers targeting EU markets, include the following:

- EU developers took in €17.5 billion ($23.7 billion) in revenue in 2013, and we forecast that figure will increase to €63 billion ($85.3 billion) in five years. But you might be surprised where a lot of that revenue comes from. In addition to €6.0 billion ($8.1 billion) in app sales, in-app spending for virtual goods, and advertising, EU developers recognised €11.5 billion ($15.6 billion) in 2013 from contract labour. And much of the developer-for-hire business is for companies that aren't really in the app business per se but use apps to support and market their mainstream offerings like financial services, retailing, and packaged goods.

- Fewer than half of the independent developers we surveyed said they were offering services for hire, so that's a potentially untapped market for startups. Similarly, half of the enterprises that did their own in-house development also used third-party developers. And in-house developers are by and large more satisfied in achieving their commercial objectives than independents, many of whom are frustrated by low prices, free products, or barely emerging ad revenues.

- The EU app-developer workforce will grow from 1 million in 2013 to 2.8 million in 2018. Additional support and marketing staff result in total app economy jobs of 1.8 million in 2013, growing to 4.8 million in 2018.

  - For the purpose of this analysis, we define developer workforce as including the developers at independent software companies as well as the in-house developers at other organisations who work full- or part-time on apps. This

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includes hobbyists and others who may not make a living exclusively from app development.

- EU developers face more business than technical bottlenecks. Increasing users' willingness to pay for apps is problematic, but better discovery vehicles could help relieve high customer-acquisition costs. Similarly we see an opportunity for an EU marketplace where companies needing app development could identify, negotiate with, and hire contract developers.

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low prices or free apps
customer acquisition costs
access to capital or financing
platform incompatability
slow 4G adoption
not enough APIs from major platforms
inconsistent regulatory policies
multiple languages
large revenue share to US platforms
hard to compete with US salaries
lack of app dev education

EU app economy workforce

2013
1.8M

developers 1M
support staff 800k

2018
4.8M

developers 2.7M

support staff 2.1M

one out of 10 are female
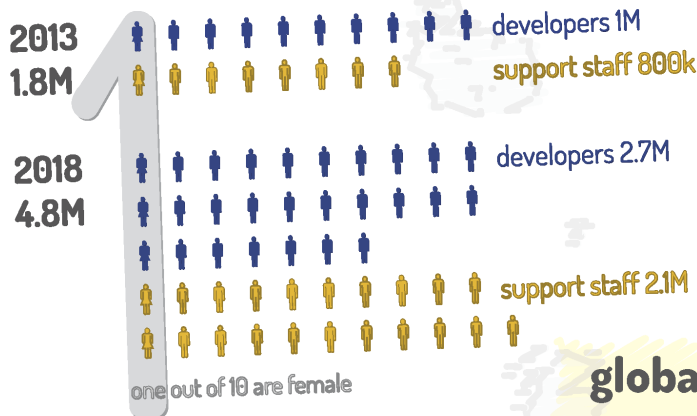
42% of EU app developers do contract work, rising to 65% in 2018

Over 30% of EU app coders and 20% of scripters make €50,000 or more

EU app economy revenues

2013
17.5bn
€€€€€€
€€€€€€€€€€€€

app sales, in-app spending and advertising €6bn
contract dev work €11.5bn

2018
63bn
€€€€€€€€€€
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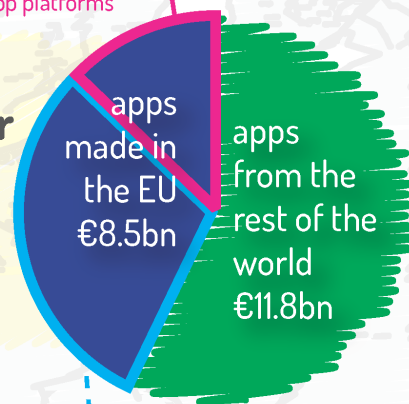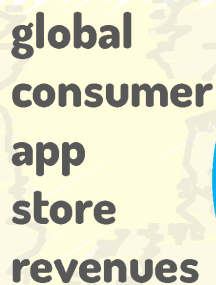app sales, in-app spending and advertising €17bn
contract dev work €46bn

Of the top 50 grossing apps, half of the European-made ones are from just five games companies

Paid app spending represented 52% of total revenues in 2013 but will drop to 36% in 2018 as in-app purchasing increases

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global consumer app store revenues

€2.5bn in fees paid by EU companies to app platforms

apps made in the EU €8.5bn

apps from the rest of the world €11.8bn

94.4bn apps downloaded globally in 2013

global app spending

spending in rest of world €50.6bn

in rest of world €14.2bn

in EU €6.1bn

EU spending €18.7bn

2013

2018
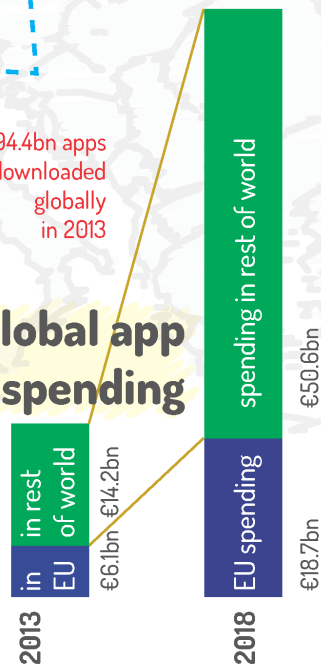
Introduction

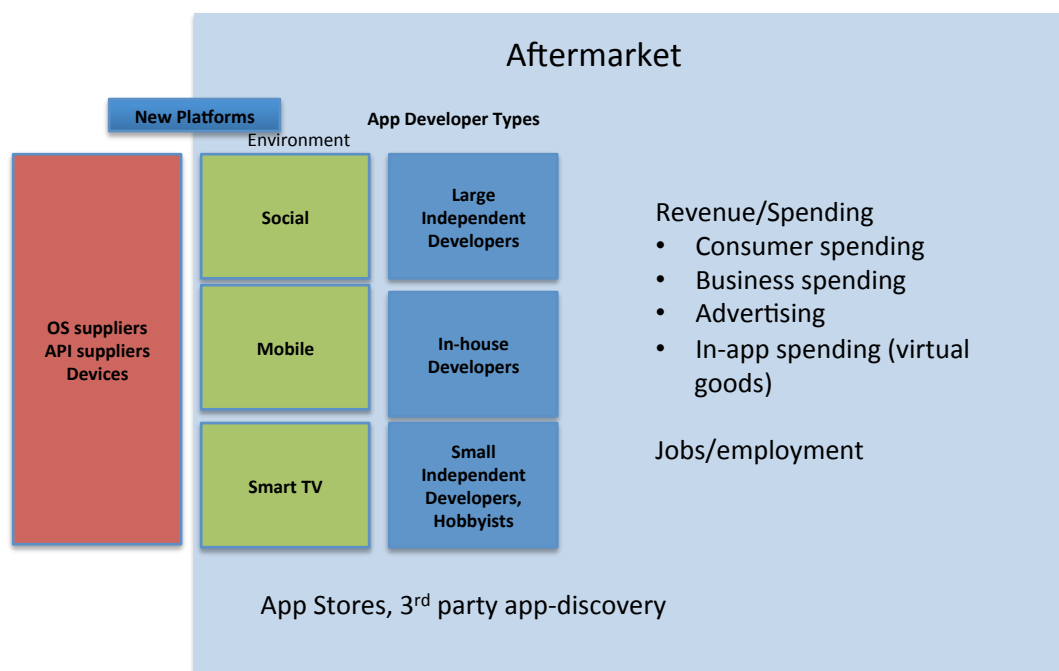The global app economy can trace its origins to the launch of Apple's iTunes App Store in 2008, but it is still a market in its infancy. Many of the current market dynamics have the air of a gold rush in the Wild West. A relatively small number of astute, opportunistic companies have quickly learned how to make the economics of the fledgling app economy work and dominate app store revenues. But companies selling through consumer app stores are just one part of a much broader ecosystem that includes independent developers acting as contractor guns for hire, small and large agencies, and the developer workforce within enterprises. At the risk of exhausting the metaphor, the surest bet in a gold rush is selling shovels.

EU app ecosystem

Aftermarket

New Platforms	App Developer Types

Environment

OS suppliers
API suppliers
Devices

- Social
- Mobile
- Smart TV

- Large Independent Developers
- In-house Developers
- Small Independent Developers, Hobbyists

Revenue/Spending
- Consumer spending
- Business spending
- Advertising
- In-app spending (virtual goods)

Jobs/employment

App Stores, 3rd party app-discovery

Source: Gigaom Research

This report looks at the revenues and jobs that compose the aftermarket of the European app ecosystem. We'll look at the money users and advertisers spend on and in apps that run on the new app platforms: the environments that support smartphones, social networks, and other connected devices like smart TVs. Much of the economic activity is driven by independent developers, including startups and hobbyists, as well as

big companies like *Angry Birds* creator Rovio and enterprise software supplier SAP. But you might be surprised how big a role is played by companies whose primary business isn't apps: companies in financial services, retail, packaged goods, media, and so on.

We have built profiles of and a forecast model for the jobs and revenues generated in the EU app economy aftermarket. In support of those models, we ran two surveys of app developers: one aimed at smaller independents and one of in-house departments that develop apps that support their company's main business. We did extensive interviews of companies in the ecosystem, hosted workshops in Brussels and Berlin, and ran two crowdsourced challenge exercises, seeking insights into how the EC can help build up this marketplace.
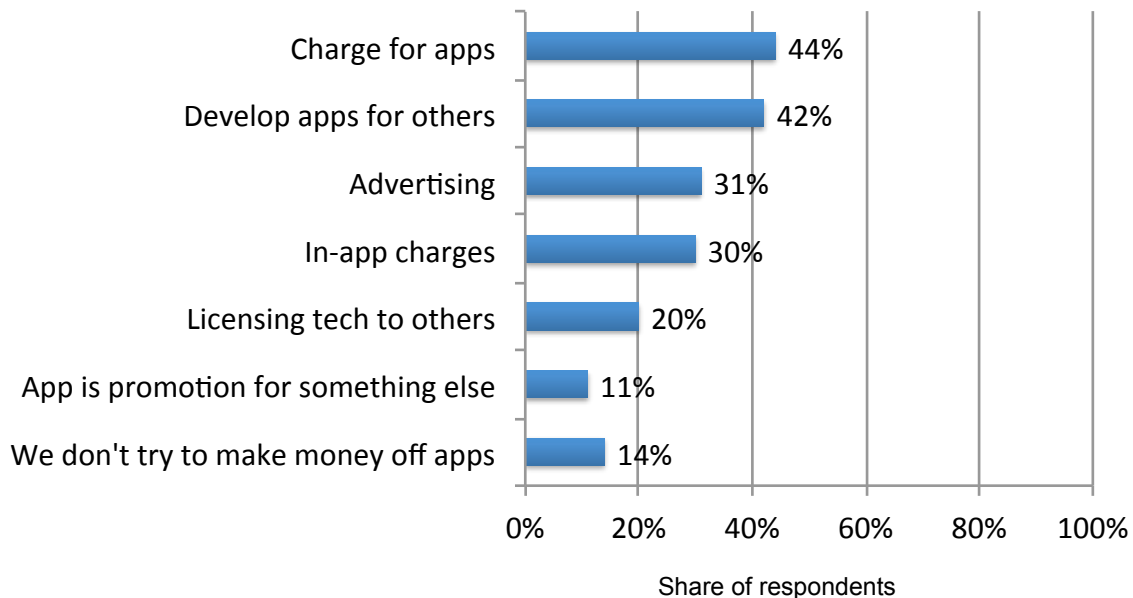
Although most app platforms are North American (Google's Android, Apple's iOS, Facebook's environment) — streaming music services are a notable but niche exception — European Union developers have proved highly successful at monetising the global app economy. EU app companies account for 42 percent of app revenue across the US and EU, the same share as North American app companies. EU developers have successfully leveraged global app platforms as a way of reaching otherwise-hard-to-reach North American and global consumers.

Commercial strategies for EU app developers

As shown below, the independent developers are mainly dependent on users paying for apps or extra features and functions within apps — mostly games. It's not clear that these business models scale well outside gaming and subscription music services. At the same time, the app advertising market is fragmented across a number of ad networks, and Google and Facebook currently dominate global mobile ad revenues. Developing apps for others, the strategy of 42 percent of our survey base, appears to be a more promising avenue.

How does your company try to make money off apps?

Category	Percentage
Charge for apps	44%
Develop apps for others	42%
Advertising	31%
In-app charges	30%
Licensing tech to others	20%
App is promotion for something else	11%
We don't try to make money off apps	14%

Share of respondents

Source: Gigaom Research EU independent developers survey, 4Q 2013 N= 199

One of the reasons we like the opportunity to outsource or develop apps under contract is that potential customers are so happy with their success. The chart below shows that, on average, the in-house developer departments we surveyed are more satisfied with their commercial objectives. The surveys showed that in-house developers and independents are hiring aggressively, but they're probably constrained by capacity. The in-house teams generally use apps to boost their main business rather than try to charge separately for them.

Satisfaction with app objectives
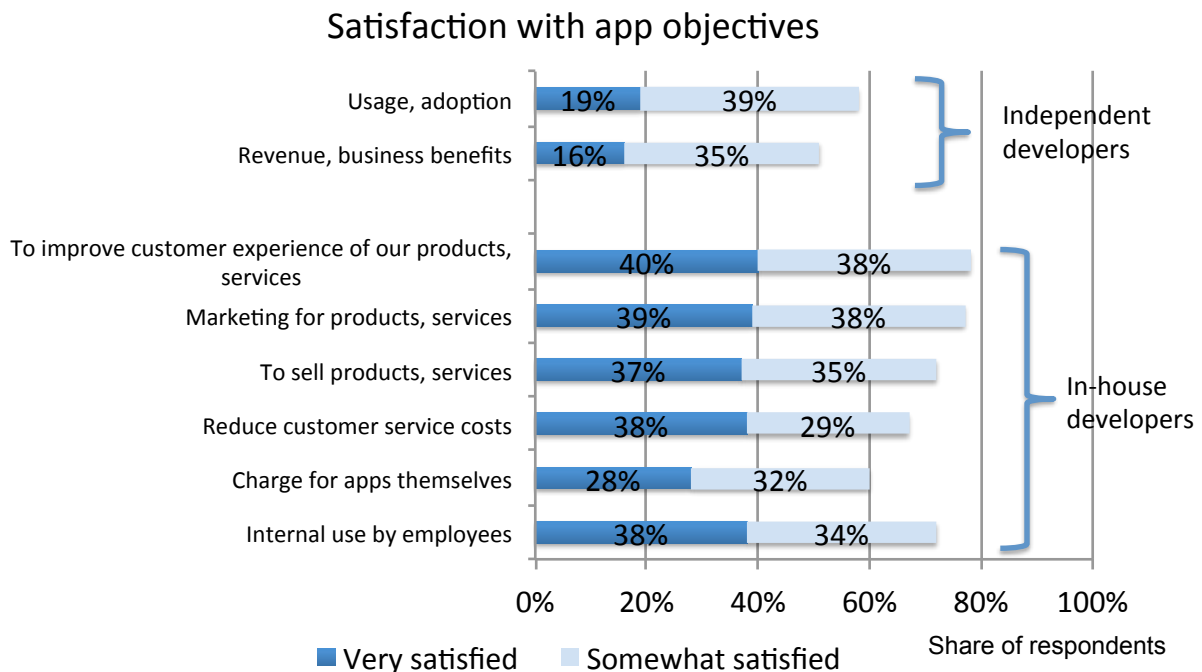
Source: Gigaom Research EU independent developers survey, 4Q 2013 N= 193
Gigaom Research EU In-house developers survey, 3Q 2013 N= 517

EU app market forecast

The app economy to date has been powered by consumer usage of mobile devices and social networks. This consumer behaviour has driven an enterprise and business-to-business halo effect. Recognising the growing amount of time their target customers are spending on connected devices, brands are investing heavily in building apps and mobile-optimised websites to reach them. Service companies are building dedicated apps to help customers to complete tasks more conveniently. Entertainment companies are capitalising on new behaviour to build new products and create new revenue streams. Enterprises are equipping their workforces that have grown accustomed to consumer mobile experiences with mobile apps to bring greater efficiency and productivity. Thus the app economy is consumer-driven at heart but with a far wider economic scope and influence.

A number of behaviour- and market-specific factors will drive continued growth in the app economy, including:

- Growing downloads per user
- Growth of in-app purchases and other new monetisation methods
- A modest spread of app store revenues beyond games
- Growth in number of app developers (including the transitioning of other ICT skills and new entrants)
- Growth of consumer adoption of connected devices in emerging markets

A number of potential risks and growth inhibitors also exist. These include:

- The possibility that the consumer app market will not meaningfully expand outside games
- The deterioration in paid app revenue in favour of in-app purchasing, making it difficult for non-game companies to monetise their apps
- The risk that the app economy is a bubble market that lacks the economic infrastructure for long-term sustainability
- The difficulty of new-entrant developers being discovered by users on the increasingly cluttered app platforms, thus reducing success rates and slowing the influx of capital

EU spending — including user spending and advertising — totalled €6.1 billion ($8.3 billion) in 2013, representing 30 percent of the global total. By 2018 this will have grown to €18.7 billion ($25.3 billion), representing a smaller 27 percent of the global total due to stronger growth rates in later years from other regions. Paid app spending represented the majority of revenue in 2013 but will decline from 52 percent of the total to 36 percent in 2018, with the revenue transitioning to in-app purchasing.

EU app spending, 2013-2018
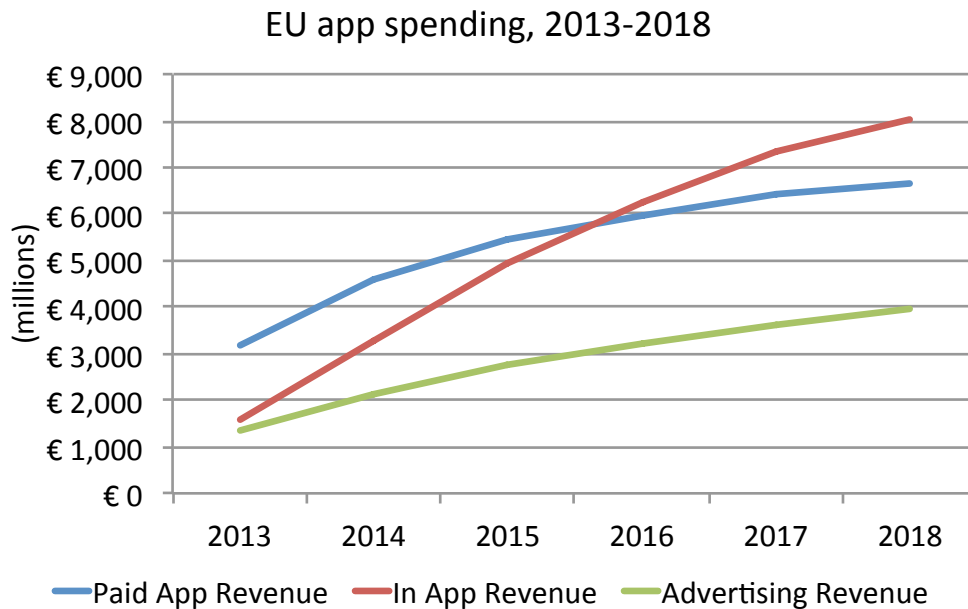
Source: Gigaom Research, 2014

EU developers earned €5.9 billion ($8 billion) in consumer app store revenue in 2013. Although EU developers account for 42 percent of global consumer app revenue and EU consumer spending accounts for just 30 percent of the global total, this results in a modest EU balance trade deficit of -€128 million (-$173 million). This is because of the app platform fees that EU developers pay on revenue earned. In virtually all instances this revenue flows to North American companies.

EU app developer revenue, 2013-2018
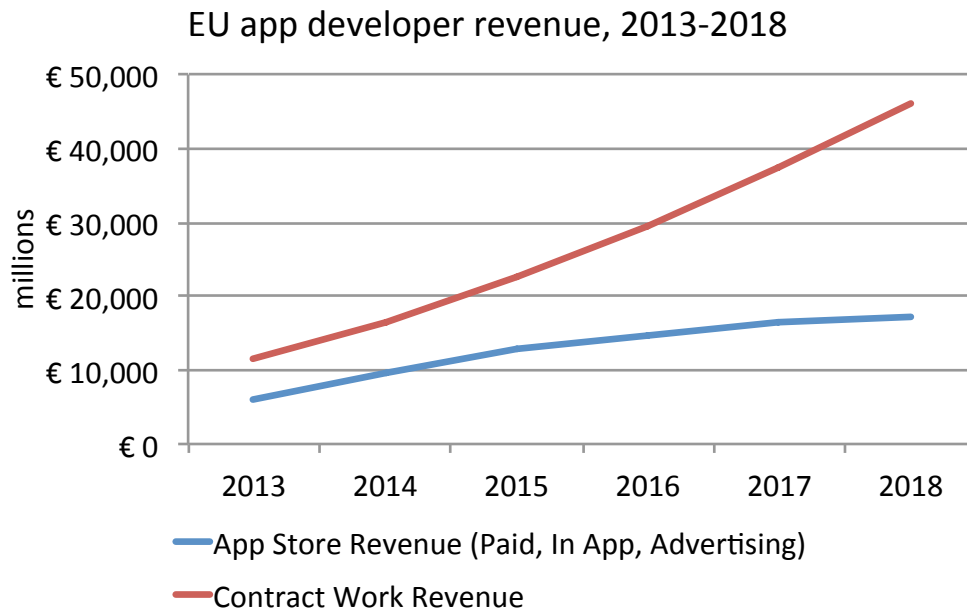
Source: Gigaom Research, 2014

The proliferation of apps beyond gaming, specifically into roles as marketing vehicles or as the means to deliver services like consumer banking and sales force automation, w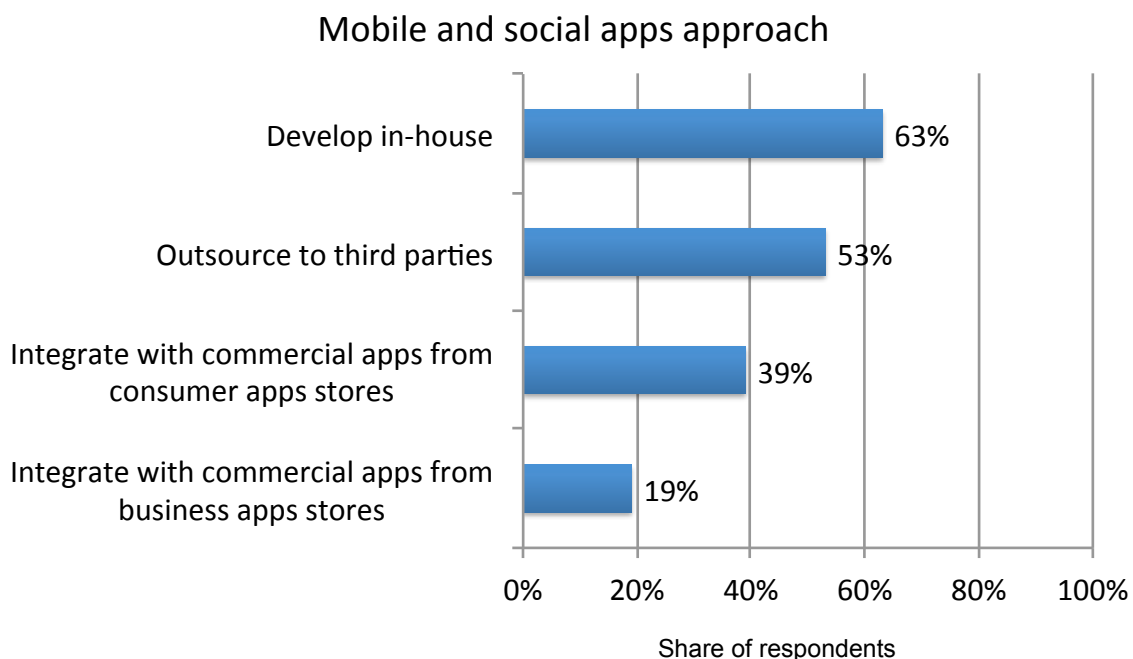ill drive the demand for contract labour. We project that EU developers will take in nearly €46 billion ($62.3 billion) in development work in 2018, up from €11.5 billion ($15.6 billion) in 2013.

EU app economy jobs forecast

The five most successful EU app companies represent 49 percent of the appearances of EU companies in the top 50 grossing apps in the EU and in the US. All of these companies are game companies, reflecting the game bias of the app economy. The first-, second-, and fifth-ranking companies (King.com, Supercell, and Rovio, respectively) are all Nordic, indicative of the tech bias of these countries' economies. The success of EU app companies is not evenly distributed across Europe, with only Germany, France, and the UK having any meaningful number of app companies that are successful outside of their native markets. Some countries such as Italy have no app companies with apps featuring in the top 50 slots outside of their domestic markets.

This naturally creates a drain on regional skills, encouraging developers in other EU territories to relocate to major EU app countries to seek work with the most successful app companies. However, this trend is offset to some degree by the fact that 42 percent of EU developers do contract work, which can often be done remotely. This share will rise to 65 percent by 2018, driven by a larger number of traditional and digital companies requiring regular app development expertise.

Half of in-house developers also use 3rd party developers

Mobile and social apps approach

Category	Share
Develop in-house	63%
Outsource to third parties	53%
Integrate with commercial apps from consumer apps stores	39%
Integrate with commercial apps from business apps stores	19%

Share of respondents

Source: Gigaom Research EU In-house developers survey, 3Q 2013 N= 525

Monitise Create (formerly Grapple Mobile), a UK-based digital agency, builds apps for brands that use them for marketing. It counts NatWest, Barclays, Tesco, McDonald's, and Premier Inn among its customers. Three years ago, Grapple Mobile was a three-person firm. It now has 120 employees and is set to double in size. Similarly, Golden Gekko (based in London with a large Barcelona office) plans to grow its staff 40 percent to 50 percent next year.

One small development agency stated that demand often outstrips his agency's capabilities and that they are paying the price for not yet having invested in a business development headcount.

Just 28 EU companies account for all the appearances of EU apps in the top 100 grossing apps in the EU and US. Large independent developer companies represent the vast majority (86 percent) of the most successful EU developers, with small independent developers accounting for just 9 percent. This bias in the app-market economy toward the superstar poses breakthrough challenges for new entrants that will need to be addressed to prevent this early-stage market from ossifying around a few early success stories.

The EU app developer workforce will grow from 1 million in 2013 to 2.7 million in 2018. By that point 39 percent of developers will be small independent developers, 37 percent large independent developers, and 24 percent in-house developers. Contract work will account for the majority of the revenue for the small, independent developer segment.

EU app economy will support strong, steady job growth

EU app economy jobs, 2013-2018
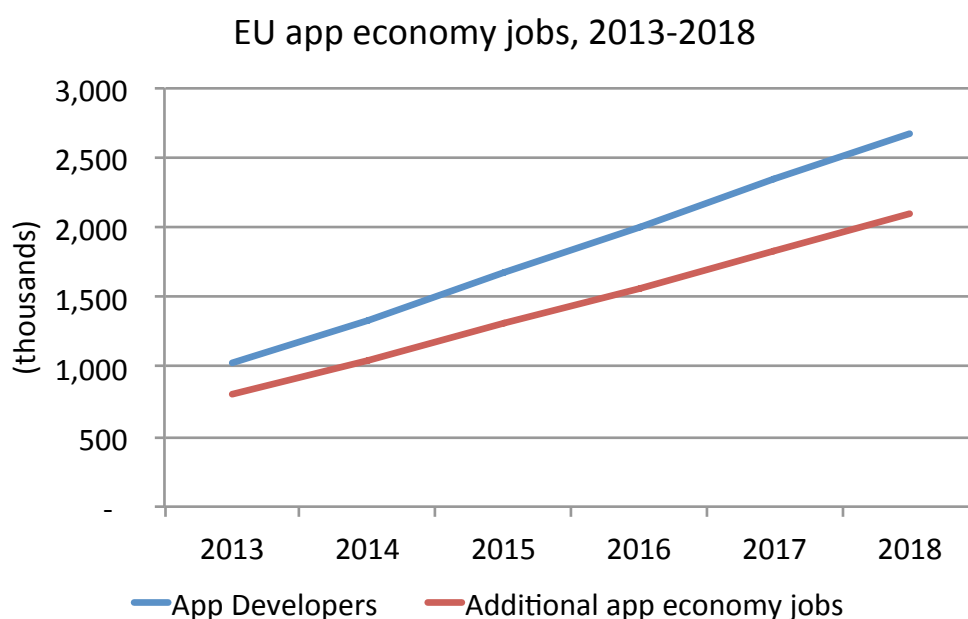
Source: Gigaom Research, 2014

The EU app workforce contains a broad range of roles and skill sets, including developers, testers, designers, and UI and UX experts. A significant amount of additional associated jobs are generated by the European app economy. For small independent developers this might be a single business development and sales executive. Large independent developers have big-company infrastructures, ranging from accounting and HR to management and IT support. Consequently the total EU app

market workforce in 2013 was 1.8 million, including 0.8 million support jobs in addition to those developer jobs. By 2018 the additional jobs figure will rise to 2.1 million, resulting in a total European app economy workforce of 4.8 million.

In modelling the jobs supported by the EU app economy, we drew on public company data, our surveys, and interviews with developers and other stakeholders. The model aims to portray the developers working on apps and the staff supporting apps, even if these jobs are part-time or if the developers in question are hobbyists. It also accounts for jobs within companies whose main business is not selling apps. We expect that, as more and more companies offer apps as part of their product or services, they will refocus in-house and outsourced development increasingly on apps. Therefore some of the jobs modelled here are skills transfers rather than newly created positions.

Some points relevant to the jobs model include:

- 17 percent of the independent developers we surveyed said that they were hobbyists; 25 percent of the smaller independent developers described themselves that way. This group is a foundation for the future: many hobbyists will eventually become professionals.
- Based on the surveys, 16 percent of independent developers and 6 percent of in-house developers are part-time. The surveys suggested that 13 percent of support staff at independents and 4 percent of the jobs supporting in-house development were part-time. Part-time employment is often a career choice for developers.

EU app economy job profiles

The jobs in the app economy are good ones. The figure below summarises what we heard from our survey respondents. The developer category is biased slightly toward highly-educated, experienced coders. Scripters and designers are next in the hierarchy, but even testers do relatively well. This analysis is based on full-time jobs.

Profiles of EU app developer jobs

	Small, independent developers	**In-house developers**
Mix	Over half are coders	Mix of coders, scripters, testers
Experience	Over half have at least three years of experience, including 20 percent with over five years	Sixty percent have at least three years of experience, including 20 percent with over five years
Salary	Over 30 percent of coders and scripters make €50,000 ($67,670) or more	One-third of coders make €50,000 ($67,670) or more, as do over 20 percent of scripters
Education	More than three-quarters of coders and scripters have college or advanced degrees	Three-quarters of coders and scripters have college or advanced degrees
Gender	Over 5 percent are female	Over 10 percent are female

Source: Gigaom Research EU independent developers survey, fourth-quarter 2013, N=193; Gigaom Research EU in-house developers survey, third-quarter 2013, N=517

Our surveys suggested that support staff at the small independents were actually more experienced and better compensated than developers. As noted, at more-established companies, the jobs that support apps are more diversified. On average, fewer than 50 percent had three or more years of experience, although a similar three-quarters had college or advanced degrees.

Bottlenecks for the EU app economy

Our surveys, interviews, and workshops all confirmed that EU developers face more business challenges than technical challenges. The independent developers told us low prices or free apps were the biggest problem (40 percent of respondents), though customer acquisition costs (30 percent of respondents) also ranked above access to capital or financing (14 percent of respondents).

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Independent EU developers cite business, talent bottlenecks

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Most challenging bottlenecks for independent EU developers

Category	Most difficult	Somewhat difficult
Business & financial	13%	38%
Talent	11%	32%
Technical	8%	28%
Market	5%	22%

■ Most difficult   ■ Somewhat difficult

Share of respondents
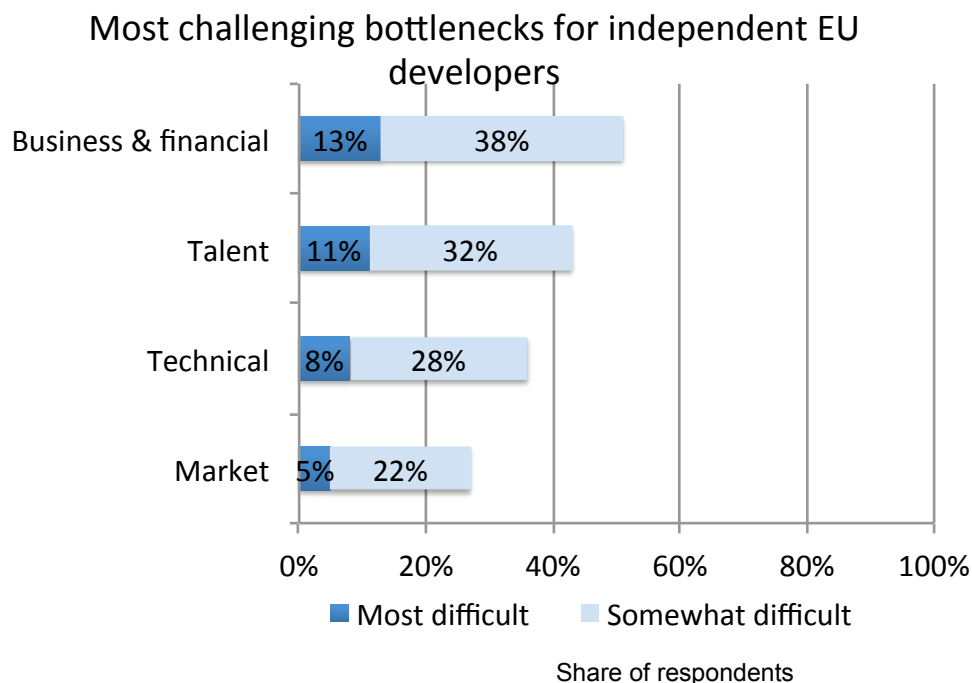
Source: Gigaom Research EU independent developers survey, 4Q 2013 N= 197

Both independent and in-house developers ranked platform incompatibility as the top technical bottleneck. In-house developers wished 4G adoption across Europe was moving faster, and the independents would like to see richer resources in terms of technologies and services available via application programming interfaces (APIs) from the platform providers.

In addition to the difficulty in supporting multiple languages and inconsistent regulatory policies across EU countries, among market bottlenecks, both independent and in-house developers cited US platform domination. That, of course, leads to 30 percent revenue-sharing demands from Apple and Google, and it might be an opportunity for a second-tier platform like Microsoft-Nokia. Its app store takes only a 20

percent cut after the app generates $25,000 and allows in-app payments, third-party payment systems, and in-app advertising. And Nokia has a program it calls a BDK, or business development kit, in homage to the developer's SDK (software development kit). Nokia will integrate operator billing and operates its own advertising exchange.

The concentration of the mobile app economy around iOS and Android leaves a very pronounced dependence on the business strategies of Apple and Google which has helped motivate organisations like Mozilla to champion alternative standards, most notably HMTL5. Mozilla's VP of Apps and Marketplace Rick Fant believes that there is a role for the EU to play in supporting HTML5 and in turn "getting developers better tools."

Being a truly European app success can be a real challenge because of the need to localise across multiple markets, with language the single biggest factor. SoundCloud's Head of Platform Paul Osman stated that "If you're a smaller service you need to be in as many markets as possible and that means as many languages as possible which is a real challenge for startups with scarce resources."

Another interviewee from a large startup shared the view that localisation is a key challenge and added that fragmentation of payment types was just as important as language barriers: "Payment fragmentation in Europe is partly a cultural issue but it is also systemic and there is a role for governments to educate about the importance of single payment standards for a single market."

SwiftKey's CTO Ben Medlock believes that it is harder for European app companies to secure funding than for their US peers: "It is harder to get funding in Europe and that is a result of there not being a technology business culture. We need more technology company executives to migrate into the financial sector to help change happen organically. There is an emergent European tech community but it must continue to grow organically." Another interviewee added that while "Silicon Valley is skyrocketing, Europe is very interesting but lacks the same momentum."

The business issues are reflected by the talent or HR bottlenecks shown by the surveys. Both types of company find it hard to compete with US salaries for developers and wish there were more education and training programs to teach mobile and social networking developer skills. But even the startups acknowledged their own lack of business skills.

Top talent bottlenecks for European apps
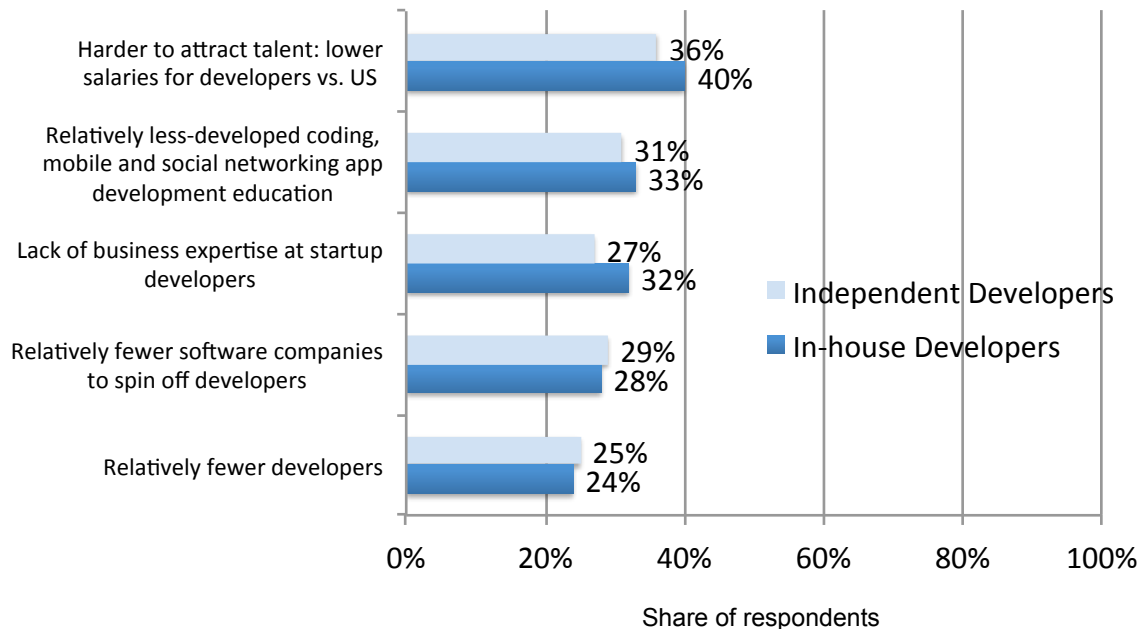
Source: Gigaom Research EU independent developers survey, 4Q2013 N=194,
Gigaom Research EU In-house developers survey, 3Q 2013 N= 522

Potential policy actions based on crowdsourcing exercises and workshops

Another element of the Eurapp project was to crowdsource innovative solutions to the main bottlenecks facing the EU app economy, that could be proposed to policy makers in the EC. However, before the solutions could be produced, those main bottlenecks had to be identified and aligned to those already found in our earlier interviews.

At our first Eurapp workshop in June 2013, we ran a number of participatory sessions to identify the bottlenecks. Nearly 50 participants at the workshop were asked to describe the top problems experienced in Europe by app developers and by companies with a need for apps. The workshop participants were from a wide range of stakeholders in the EU app economy: startups, independent developers, large app platform providers, web companies, non-tech companies, academics, researchers, government officials, members of representative bodies, and more. The table shown below summarises an aggregation of the main bottlenecks identified by participants in our speedboat and fishbowl exercises.

#	Bottleneck	Found in workshop	Noted in interviews	Related to #
1	Funding	Yes	Yes	
2	Mindset and attitude	Yes		
3	Platform and infrastructure	Yes	Yes	
4	Discovery process and organisation	Yes	Yes	
5	Education, skills, talent access	Yes		
6	Fragmentation of market, platforms, players	Yes	Yes	
7	Language and culture fragmentation	Yes	Yes	
8	Regulatory issues	Yes	Yes	
9	Immature market	Yes		
10	EU-wide organisational infrastructure	Yes	Yes	
11	Difficult for developers to find the companies with a need (opportunity for a B2B marketplace)	Yes		
12	App developers have problems with positioning (unmet needs, untapped demographics/verticals) and marketing/promotion	Yes	Yes	4
13	Need mentors from larger companies but fear factor	Yes		
14	Corporates have money and startups have ideas but there is no mechanism to allow corporates to leverage startups and to allow startups to utilise the corporate's resources	Yes		1
15	No good network for connecting developers to other developers	Yes		
16	Not many can 'get everything right' (engagement, churn, loyalty)	Yes		
17	There are effective channels like student ambassadors out there that are largely unused	Yes		
18	Lack of UX (user experience) expertise	Yes		
19	No fail fast, grow fast mentality	Yes		2
20	No results with traditional media advertising	Yes		4
21	Cannot achieve sustainable growth (one-hit wonders) and monetisation	Yes	Yes	

In parallel with workshops, our interviews with companies highlighted many of the same bottlenecks, further reinforcing those in the table as indicated.

Workshop participants noted that the first 10 bottlenecks were EU-wide issues, while the rest of the list consisted of bottlenecks experienced at the company level. We grouped related EU-wide bottlenecks together to form two challenge definitions for the crowdsourcing exercises: those around funding and scaling-up issues (bottlenecks 1, 2 and 4), and those around fragmentation and market conditions (bottlenecks 5, 6, 7, 8 and 10):

Challenge 1: Supporting the EU app economy – funding and scaling-up app companies

"With the increasing adoption of smartphones and social networks, the EU app economy has the potential to create revenue and jobs on a scale similar to that of the United States. But major bottlenecks threaten to hold back that growth: a lack of access to funding for developers and a shortage of business skills and experience at app companies that inhibit their scaling up and sustainability. Focusing on startup app companies, the European Commission (EC) is looking for advice on initiatives focused on supporting app companies in overcoming these barriers and fostering growth. The EC is seeking perspectives broadly - ideas from the high tech/software industry or from any other industry are equally welcome."

Challenge 2: Supporting the EU app economy – addressing EU market conditions

"The EU app economy has the potential to create revenue and jobs on a scale similar to that of the United States, following the growth in adoption of mobile devices and the popularity of online social networks. However, various characteristics of the EU app landscape threaten to hold back that growth: (1) the natural fragmentation of national and regional markets (compared with the US, China, or Japan) by size, language, culture, etc.; (2) EU and local regulatory conditions (legal complexities, country-specific personal data policies, etc.); and (3) difficulties in finding and retaining a talented, educated and skilled workforce. The European Commission is seeking advice on initiatives it could develop to overcome these "environmental" barriers and foster growth of the EU app economy. The EC is seeking perspectives broadly - proven ideas from the high tech/software industry or from any other industry are welcome."

A number of bottlenecks (11, 12, 13 and 14) were also related to an underutilised but potentially beneficial synergy between independent developers and larger corporates. While a number of participants

highlighted the need for better matchmaking between startups and larger companies that could include them as part of their ecosystem, one participant also observed that big companies are not comfortable working with small developers. They can often be challenged by atomisation – as the developer tendency to develop a "minimum viable product" works against enterprise solutions.

We launched two 'ideation' challenges on the InnoCentive crowdsourcing platform in August 2013, and both challenges ran for five weeks. Solvers from around the world submitted many high-quality ideas.

Challenge 1 (on the bottleneck of funding and scaling-up companies) attracted 287 solvers, out of which 54 full solutions were submitted, and Challenge 2 (on the bottleneck of addressing EU market conditions) attracted 160 solvers, out of which 40 full solutions were submitted.

Word cloud of solutions in Challenge 1   *Word cloud of solutions in Challenge 2*

We filtered all solutions from both of our challenges through a two-stage review process. In the initial phase, we assigned ratings (on a scale from 1 to 5) from two independent reviewers (each reviewer was blind to the other reviewer's scores). We used an average of these ratings to create a shortlist (we selected those that either had an average score of 3.5 or more, or those that had at least a score of 4 by either reviewer - to ensure that no useful solutions were omitted).

In the second phase, we took the shortlisted set of solutions, and with an additional assessor we added a third rating for those shortlisted. We then used an average of the expert ratings to create a second shortlist. These were then assessed by two more reviewers to give a final ranking.

The challenge winners, runners-up and other notable solutions were chosen from this ranked list, and were invited to present their ideas at the second Eurapp workshop in November 2013. These top 10 solutions - from Europe, North America (Canada), Asia and Oceania (Australia, Philippines) - are detailed below.

Solution title and abstract	Main points
European App Centre (EAC) *Challenge 1 Winner* This solution detailed the creation of a European App Centre (in Ireland) that would possess the infrastructure to help companies scale their app products. This comprehensive and multi-faceted approach consisted of four main strands around funding, training, marketing, and data policies.	*Funding* • Target multinationals, not VCs, for funding opportunities • Request that more Horizon 2020 funding and national funding be made available for app innovation *Training and collaboration* • Facilitate sharing of resources and building a community ecosystem • Provide app testing infrastructures • Promote developing talent at both school and college levels *Marketing* • Promote EAC at the Summit and other European tech events • Run a flagship competition with a €100,000 prize • Have a focus on data analytics due to available competencies *Data protection policies (DPPs) and privacy regulation* • Overcome procedural barriers • Bring European DPPs in line with Irish policy as it is already being used successfully by many multinationals with bases there
App Innovation, Development and Training Hubs *Challenge 1 Runner-Up* This solution described publicly-funded bootcamp training programmes for app developers in multiple cities in parallel with the creation of a number of app innovation hubs (incubator-type schemes).	*Bootcamp training programmes in selected cities* • Develop skills, both technical and business • Increase knowledge • Enable networking *App innovation and development hubs* • Form hubs on a competitive basis • Address demand side locally • Provide services through a cloud infrastructure so they can be accessed anywhere, anytime • Bring together developers, entrepreneurs, angels, VCs, researchers, creatives, innovators, legal and business development services *Business plan competitions in the chosen hub regions* • Seek substantive business models from applicants • Look for plans targeting diverse segments of the market • Provide hosting and mentoring to winning

	applicants, as well as travel awards to other renowned app hubs worldwide *Research* • Put in place new Horizon 2020 app-related research programmes
<u>Reality TV Show with App Entrepreneurs</u> *Challenge 1 Runner-Up* This solution proposed running a reality show centred around app developers. This was an interesting idea to generate interest in European app startups, allowing consumers to purchase the winning apps via mobile devices in a similar manner to how music reality shows currently spur viewers on to download music by the winning artists.	The goal of the app development reality TV show is to make app development an engaging, inspiring, and entertaining process where the proposed concept would be a collaboration between diverse people teamed up on the show. The show should directly connect with the audience (consumers), and empower and motivate future app developers. The selection process would begin through social media, followed by auditions, and 20 diverse contestants would be shortlisted and gathered to live together in an app development house. The video shows (online, TV) would begin with the audition process ("meet the app developers"), followed by shortlisting and challenges. The competition element would consist of a weekly challenge – carried out by teams – following which the low performers would be dropped. Challenges could potentially be linked to show sponsors (these would not have to be tech companies; any company with an app requirement could sponsor), with points awarded to the top contestants.
<u>App Conference Hub</u> *Challenge 1 Notable Solution* This solution proposed an event that would match up app developers with sponsors, inspired by a model from the movie domain where filmmakers pitch ideas to movie studios at an annual event.	This would consist of an annual conference for matchmaking app developers and sponsors, which would run in conjunction with an associated contest and app awards. Organisers would facilitate meetings between the developers and sponsors. Sponsors could also be larger companies with a marketing need that could be fulfilled through mutual-benefit app branding (e.g. white labelling a developer's apps). The event would also provide an app presentation (pitch) kit and business development kit to participating app developers – in multiple languages if possible. The event would be broadcast online in its entirety.
<u>App Innovation and Incubation Centres</u> *Challenge 1 Notable Solution* This solution described a framework for creating and running a series of app-focussed innovation and	App IICs (innovation and incubation centres) would be created across the EU, hosted in universities and third-level colleges, to create innovative European app campuses. The app creation process would involve an entrepreneur with an app idea, going to the IIC, and partnering with undergraduates and postgraduates in the university or college that have the appropriate technical and business skills.

incubation centres based in higher education institutions across the EU, focussed on developing and testing app ideas.	The university or college will have a large student population for testing out any developed prototype apps, which are then assessed for potential in a wider market.

Investors would consider funding those tested apps with high potential, with the ultimate aim of an app startup being funded and commercialised. |
| Online Multisided App Team Connection Platform

Challenge 1 Notable Solution

This solution gave a detailed marketplace concept, a CoFoundersLab-like idea for app team member matchmaking in the EU. | An online multisided platform would allow users to create startup teams to realise app ideas and to allow potential investors to connect with these teams.

The platform would also link into relevant regional events of interest to app teams, and would potentially be run by the EC due to their visibility and reliability.

App startup entrepreneurs would be able to find a co-founder or join an existing app team, and then obtain financing to convert ideas into reality. The platform should support passionate but diverse teams that will drive customer adoption of and loyalty to their apps.

Investors could access a list of investment opportunities in teams matching their areas and eventually follow through with investments in these teams. The aim would be to provide risk-adverse investors with the customised information they need about scalable opportunities at a low cost. |
| App Venture Capital Fund and Academy

Challenge 1 Notable Solution

This solution proposed an EC-supported VC and coaching academy for app startups, with attractive investment terms. A professional committee is formed to select startups for funding and coaching. | A common problem in funding is that while a founder may believe they have a super app opportunity for an investor, the investor may in turn be worried about a super flop, especially if they are the sole investor and have to take on all the risk.

This proposed venture capital fund and associated academy will select a group of app startup founders – selected by a committee of professionals – for enrolment into an app developer academy for startups that will eventually be supported by a collective-investment open-ended VC fund.

The key difference with existing funds is that investments will be made over a longer period of time, and this will involve a more gradual payback plan to give app startups more time and flexibility to pivot and achieve success.

The app startups will be supported by a team of professional coaches, a range of networking opportunities, and an extensive portfolio of business plans and strategies. The EC would be expected to contribute to each of these supports. |

Crowdpreneurship *Challenge 1 Notable Solution* This solution described a crowd-based entrepreneurship incubator platform to bring together ad-hoc teams with complementary skills, and to share/exchange skills between teams where appropriate.	The "crowdpreneurship" concept extends current trends in crowdsourcing and crowdfunding in the form of a platform to form entrepreneurial app teams with complementary skills. Team members contribute to an app idea for equity, and investors mainly provide funds for operational expenses but can also join teams for equity. The platform should support know-how exchange between teams where it is mutually beneficial. The framework should have an extensive knowledge base, provide easy contract templates for various startup tasks, support simple accounting procedures (or connect to appropriate tools and services), provide legal security, and facilitate the promotion of completed apps as well as the crowdpreneurship concept itself.
App Resource Repository and Promotion Channels *Challenge 2 Winner* This solution detailed a multi-strand marketing and business development approach that includes an annual app conference and contest, business development kits, a challenge centre and jobs board, and associated online app promotion channels (e.g. YouTube).	Through a combination of online and offline events, this framework would support the EU app economy through the following strands: • An annual app conference, with tutorials on advanced topics • An app promotion channel on YouTube, with translations of promotional videos into various languages • A drive to promote English for the development of apps, given the fact that there are 1.2bn speakers worldwide and 250M speakers in Europe (about half of the total population) • An app development competition for high school students, with national prizes and a grand prize at the EU level • A Kickstarter/Indiegogo-like service for app startups • The integration of tracking/success metrics for any app startups supported by this framework • A "challenge centre" for apps to meet business needs • Copyright vaults for startups to store their IP, in case they go out of business and valuable work is lost by the copyright owners • A standard NDA template for EU app startups
App ECO-SYSTEM *Challenge 2 Runner-Up* This solution describes an app tendering marketplace, the European Apps Tendering System (EATS), which operates as a business go-between. The marketplace	*European Apps Tendering System (EATS)* • Connects app development teams to businesses who need apps • Based on a website with invites to bid on RFQs • Contractual exchange is facilitated through the site • Open to app development teams in the EU only, but RFQs can be submitted from anywhere *EATS Challenge* • Similar to the DARPA challenge, but for apps

would list RFQs (for B2C more so than B2B) and be associated with a subsidised competition.	• A yearly topic is chosen by the EATS organisation • This should be an important topic for the citizenry of the EU, e.g. apps which best improve the lives of seniors *EATS Ventures* • This would be a venture fund managed by the EATS organisation • From the RFQs and tendering system, the fund would have access to thousands of potential developers and customers • EATS would invest in selected app teams
<u>App Entrepreneurs in Residence</u> *Challenge 2 Runner-Up* This solution extends the notion of entrepreneurs in residence to the app ecosystem, by effectively creating innovative European app cities through the 'installation' of experienced app entrepreneurs in various private and public organisations.	Cities like San Francisco have facilitated Entrepreneur in Residence (EIR) programmes by integrating startup founders into their town councils for a fixed time period. App Entrepreneurs in Residence (AEIR) applies this concept to organisations that have various app needs that could be supported and advised upon by an experienced founder. These organisations could be big companies, town councils, governments, or public bodies – as long as they have a requirement for apps, want to develop an app focus, or need to access app skills. The scheme will also benefit entrepreneurs who often have ideas for products but need coaching from industry/government as to exact needs. An annual application process will match entrepreneurs with a variety of applicant organisations, but as the scheme progresses, AEIR will target prioritised areas for various cities/regions. The EC can support this by designing and developing the programme, coordinating its implementation, and by providing funding and marketing supports.

The top crowdsourced solutions were presented to policy makers from the European Commission at the third and final Eurapp workshop in February 2014.

Conclusions: takeaways and recommendations

There's not much one can do to increase users' willingness to pay for apps. It might be easier to help reduce the cost of finding customers. We see a potential opportunity in third-party discovery platforms outside the Apple and Google app stores. It will be challenging: The once-dominant social game company Zynga (*Farmville*) has struggled to establish its own gaming portal outside Facebook, and it recently announced it would acquire mobile specialist UK-based NaturalMotion for over $500 million. Fiksu, a Boston-based company with a Finnish founder, creates loyalty programs for apps and offers a discovery network that points to app stores; 60 percent of its users come from outside the US.

But perhaps a more critical part of discovery might be less consumer oriented. Since we see such a large opportunity in contract development, there's a need for startups to connect with would-be enterprise customers. A marketplace for matchmaking partners would ease business friction. Such a marketplace would have to enable discovery, qualification (certification for quality and reliability), business negotiations, and contracting. Such a marketplace could potentially be a hub for education and training as well, particularly in business rather than technical skills. Perhaps it could leverage existing university programs.

On the technology side, cross-platform development tools and higher-level abstractions like HTML5 and methodologies like responsive design could alleviate incompatibilities. Those tools and skills need training. For example, fast-growing UK-based contractor Chelsea Apps Factory has an internal 12-week training course to help developers move from web development to mobile. The company has grown its staff from 12 to 23 to 44 over the past three years, and it is adding a team from Accenture.

Appendix A. Forecast model methodology

Eurapp app economy model methodology statement

The Eurapp app economy model sizes the European app economy across three key areas:

- European consumer app revenues
- European app developer revenues
- The number of European app developers
- The total number of European app economy jobs

European consumer app revenues

The following inputs were used to quantify the scale of European consumer app revenues:

- Total installed base of smartphones and tablets in Europe, historical and forecasted categories
- Total size of global app store catalogues (i.e. the number of apps available in each) by each app platform (e.g. iOS, Android)
- Total number of apps downloaded globally from the app stores (these were then used to create European specific numbers) by each app platform (e.g. iOS, Android)
- Total installed base of app users across other app platforms such as Facebook, SoundCloud, Spotify

To arrive at the share of each app platform's audience that is European, Gigaom Research's European forecast models for smartphones and tablets were used, as well as a mix of consumer survey data points and third-party sources such as Nielsen.

European consumer app revenue was split into three sub categories:

1. App purchases
2. In-app purchases
3. App advertising revenue

To arrive at the precise amount of European consumer revenue across each of these three revenue streams, the following sources and approaches were used, in conjunction with those listed above:

- Sources such as Distimo, App Annie and Flurry were used to determine the split in revenue between each of the three above stated revenue streams. These third-party inputs were cross-referenced against a mix of consumer survey data points.
- These same sources - in addition to an extensive Eurapp survey of

European and North American app stores - were used to determine the average prices of apps and of in app purchases. In addition to these sources, advertising-specific sources were used to determine underlying ad revenue dynamics such as the amount of revenue generated per app and the prices at which mobile app ad units are sold to advertisers.

- Once these 'top-down' market-level numbers had been created, a series of 'bottom-up' user-level numbers were created in order to 'stress test' the market-level data. These included exercises such as calculating the average number of app downloads per user, the average number of in-app purchases per user, and then applying the resulting figures to the total installed base of app users. Consumer survey data points were used to inform these assumptions.

European app developer revenues

European app developer revenues come from two key sources:

1. Consumer app revenues (global app revenues of European app company apps)
2. Contract work (app development work carried out for 3rd parties by European app developers)

To determine the share of global app revenue that is earned by European app companies, a comprehensive survey of the leading app stores across worldwide territories was conducted. This survey classified the geographical location of every app developer within the top grossing apps and applied these rankings, filtered by geographic location, to help determine the share of revenue that is European.

Additional sources such as Vision Mobile and Distimo were used to build assumptions about what share of total revenues are accounted for by the most popular apps in each platform and territory. Because the consumer app economy is highly hits driven, with a very pronounced skew towards a small number of successful apps, the top grossing apps account for a disproportionately high share of total revenue (while the long tail of apps contributes a disproportionate amount of income relative to the volume of titles).

All European app revenue was discounted by approximately 30% to account for the fee that platform providers such as Apple deduct from total revenue. In some instances, for specific revenue types on specific platforms, this rate can be lower.

For contract work, the two Eurapp developer surveys coupled with regular developer surveys conducted by Vision Mobile were used to determine:

- What share of developers does contract work
- What sort of contract work they do
- What revenue they earn from contract work

Assumptions that inform future growth include the progressive shift of developer contract work to locations outside of the EU, such as the Ukraine, India and Vietnam. Additionally, the 'halo effect' of a growing community of successful European consumer app companies will both create contract work opportunities and also make European app developers more in demand for contract work from non-European companies.

European app developers

To determine the total number of app developers in Europe, the following sources and approaches were used:

- The two Eurapp developer surveys were used to assess the total number of European app developers as well as factors such as the average number of developers per company, the number of developers that are independent versus in house, etc.
- The Eurapp surveys were also used to determine the average number of apps developed per developer
- App platform reported numbers were used to determine the total number of apps developed per year
- These inputs allowed for the estimation of the total number of active developers. The European share of consumer app revenue was applied to the resulting number to calculate the installed base of European developers
- These numbers were subsequently calibrated against third-party industry sources such as Vision Mobile's annual developer survey
- As a final check, the numbers were compared against total developer numbers reported by the main phone companies (Apple, Google, Samsung, Nokia, etc.). However in all instances these numbers were discounted as each company has a vested interest in making their numbers appear as large as possible

The resulting number of European developers was then segmented by platform (e.g. iOS, Android). The Eurapp surveys were the key input at this stage, using developer responses to quantify what numbers of developers develop for each platform. In many instances multiple platforms were reported for each developer. Therefore the final net total of European developers is smaller than the gross total of developers for each platform.

The European developer numbers were further segmented as follows:

- Small independent (up to 50 employees)
- Large independent (more than 50 employees)
- In house (developers within non-app specialist companies)

The Eurapp surveys were the key input used to drive this developer segmentation.

Within these developer numbers exists a diverse mix of employee status, ranging from hobbyists, through independent contractors, through part-time employees, to full-time employees.

European app economy jobs

In addition to the core app developer jobs – e.g. coder, UI, UX, tester, designers – the European app economy comprises and generates multiple additional jobs. For example within a small independent developer, in addition to a core team of a dozen developers there may also be business development and sales staff, finance and marketing.

To gauge the exact impact of these additional jobs generated by the European app economy, the following sources and approaches were followed:

- The two Eurapp developer surveys were used to determine what share of total employees within app companies are developers. These results were segmented by company size.
- A series of representative 'straw men' company structures were modelled to illustrate the distribution of additional staff. These were multiplied by the number of app companies of each according size.
- Next, given that many of the additional support staff in early stage app companies are likely to be part time – e.g. a part-time financial director – the total number of additional support jobs was discounted accordingly.
- The final resulting numbers were cross-referenced to create an overall job 'multiplier' to apply to the installed base of European app developers. This multiplier was crosschecked against multipliers used in other workforce impact models used in the US and in Europe.

When building the European app economy numbers, the following additional factors were considered:

- *Additional development time:* Building a single app for multiple platforms, versions of OS's and different handsets is a significant resource consideration and generates meaningful additional work for European app developers. The fragmentation of Android across

multiple handsets and versions of the OS is a particular driver of additional development resource requirement. For some apps, the incremental workload is less than that of building an entire new app, but for others the work required to develop and optimise for all handsets on a second OS can be much greater than building an entire new app. Continual support work across multiple OS's, OS versions and different handset models across the lifecycle of the apps was also factored in. Additionally, when considering the total amount of development time required for the apps across all app stores, it is important to note that there are a substantial body of apps, normally developed by smaller developer firms, that are only available in one of the app stores. For example, a small development agency might not be able to afford to develop for multiple platforms, so will instead build for the app store which presents the greatest likelihood of return. In practice this often, but not always, translates into iOS.

- *Superstar economy:* The European app economy is a superstar economy with a small number of app publishers – predominately games publishers – accounting for the majority of revenues. In order to get a reliable insight into this segment of the market, we interviewed a number of these types of developers in the stakeholder interviews as well as those at the other end of the spectrum, namely hobbyists and cottage industry developers. We additionally recruited many of them to the Eurapp workshops run throughout 2013 where we were able to talk in detail about their app output, economics, etc.

Methodology appendix: key data logic flows

To get to the headline consumer spend revenue, the following process was followed (all data refer to 2013):

- There were 1.56 billion handset users globally. Source: Gigaom forecast models
- There were 248.8 million EU handset users. Source: Gigaom forecast models
- There were 3.8 million individual apps available across all platforms. Source: app platform reported numbers
- There were 1.4 million new individual apps published across all platforms in 2013. Source: app platform reported numbers
- 94.34 billion apps were downloaded globally. Source: app platform reported numbers
- 28.6 billion apps were downloaded in the EU. Source: calculated using average number of apps downloaded globally per global number of handsets and applying this figure to the EU handset number. Then increasing that share (22% of global total) to 31% based on consumer survey data points and using per capita GDP of EU region versus other global regions

- 9% of apps were paid for up front. Source: multiple third-party sources (Distimo, App Annie, Flurry, Vision Mobile) as well as the Eurapp app tracker study
- 52% of apps were ad supported. Source: multiple third-party sources (Distimo, App Annie, Flurry, Vision Mobile) as well as the Eurapp app tracker study
- 38% of apps had in-app purchases. Source: multiple third-party sources (Distimo, App Annie, Flurry, Vision Mobile) as well as the Eurapp app tracker study
- Gross EU app store revenue €6.2 billion
- Net EU app store revenue (minus 30% for app platforms)
- Total app revenue (gross) €4.3 billion
- Net developer revenue per app download €0.15

To get to the amount of apps being developed and the amount of app economy revenue, we used the following inputs as benchmarks (these all refer to 2013 unless otherwise stated):

- There was an average of 25,000 new Android apps per month. Source: AppBrain
- In 2012 there were 295,000 iOS jobs in the US. Source: Analysis Group of Boston
- In 2011 there were 466,000 app economy jobs in the US: Source TechNet
- There were 675,000 EU mobile developers: Source: Vision Mobile
- 7 apps accounted for 10% of Apple app store revenues. Source: Distimo
- 4 apps accounted for 10% of Google Play app store revenues. Source: Distimo
- 66% of developers publish at least one app of their own. Source: Eurapp developer surveys
- 44% of consumer Apple app revenue came from EU companies. Source: Eurapp app tracker and Eurapp developer surveys
- 38% of consumer Google Play app revenue came from EU companies. Source: Eurapp app tracker and Eurapp developer surveys
- 40% average of global app store revenue came from EU companies. Source: Eurapp app tracker and Eurapp developer surveys
- 24,792 downloads per app globally. Source: Eurapp calculated by dividing total number of apps available by total number downloaded in 2013, taken from app platform reported numbers
- US app store revenue per developer $8,930. Source: calculated using above US sources on US developer landscape and US app economy numbers derived from company sources and applying the same above-stated Eurapp app economy methodology for total consumer app store revenues to the US
- There were 650,000 new individual apps published across all platforms by EU app developers in 2013. Source: app platform

reported numbers, with Eurapp survey results and Vision Mobile data
- There were approximately 0.63 EU apps per EU developer in 2013 (note this number specifically accounts for large app developers with large teams working on a single app). Source: Eurapp survey results, Eurapp stakeholder interviews, calculations based on the total number of apps published by EU developers

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Appendix B. Survey methodology

As inputs into this analysis, Gigaom Research conducted two surveys of app developers targeting EU markets.

In the autumn of 2013, we surveyed over 500 in-house developers across the EU who are developing or outsourcing mobile and social app development to third parties in support of their company's main business. We surveyed across the top five EU markets: Germany, UK, France, Italy, and Spain. We aimed for a fairly even distribution (e.g., UK 112 respondents, Germany 124, Spain 64). We polled a mix of companies by size and industry. Over 30 percent of the respondents worked at companies with more than 500 employees. We used an incentive-based panel from Research Now, a company Gigaom Research works with regularly. Research Now also translated and hosted this survey for us.

The company size breakdown of the in-house developer survey was this:

Q: Before we focus on mobile and social networking apps, how many people work at your company as a whole?		
1-10	51	9.8%
11-30	54	10.3%
31-50	71	13.6%
51-100	84	16.1%
101-500	102	19.5%
501-1,000	58	11.1%
More than 1,000	102	19.5%

N=522

We also surveyed small, independent developers. We were aiming at "cottage industry" developers and startups. We got a few big companies but mostly smaller ones among our 200 respondents. We recruited through incentives, social media, and through developer organisations. Research Now also did some recruiting for us. We got a mix of EU markets, but oversampled in the UK.

The size of company breakdown for the independent developers survey is below. In our analysis, we focused on the smaller companies.

Q: Before we focus on apps, how many people work at your company as a whole? Select one.		
1-2	35	18%
3-5	27	14%
6-10	25	13%
11-30	25	13%
31-50	14	7%
51-100	20	10%
101-500	20	10%
More than 500	33	17%

N=199

We believe these surveys are directionally representative of the EU app economy. Comparing the survey results (once we eliminated some of the outliers) with the third-party reports and sources mentioned earlier, and with our 1:1 interviews, they seemed in line.

Appendix C. Selected 1:1 interview summaries (stakeholders and developers)

1. Facebook

Developer who requested anonymity

Has not moved into non-US markets yet. Evaluating its strategy on how to do that in 2014. Getting demand from multinationals to support their European stores and customers (YOOX Group, American Apparel).

Localisation:

- Language support is first requirement; though most customers also use English.

Privacy:

- Very concerned about privacy standards.
- 8thBridge does a lot of data analytics.
    - It stores its data on its AWS cloud infrastructure in New Jersey, but will have to set up different data storage options by country (e.g., not for France or UK, but for Germany and Italy).
- Hoping to rely on customers like YOOX (Italian) for advice on legal (and tax) advice.

Resources:

- Moving into Europe would require more sales and business development personnel than technologists.
- Team has nine developers in the US.
    - Expanding into Europe would initially require one additional platform engineer, and one localisation (currency, testing) engineer to get into the first 3-5 countries (one would be UK).
    - These are full-time, experienced engineers, not HTML scripters or UI design types.
    - Would likely outsource the language translation.
- Company can do a lot of marketing support for its partners through webinars and trade shows. But it would need local sales operations to recruit new, large local customers.
- Till now, company primarily supported large organisations; it has not focused on working with smaller developers or retailers. But as it builds out a self-support product, that might be what it offers in Europe first, rather than investing heavily in partnerships with larger European retailers and brands.

- Job creation:
  - Approximately 20% increase in engineering staff, possibly 20-30% in sales and support. Larger companies would have more scalable engineering ratios.

Where EC could help:

- Privacy standardisation or templates; personal data storage/access standards.
- Actual funding rather than tax breaks.
- Taxing standardisation or templates.
- Social data access standardisation?

2. Microsoft

Tim O'Brien, General Manager, Developer and Platform Evangelism

Microsoft's evangelism program - part of the Microsoft Developer Network (MSDN) – is not tied to a single platform or technology. It supports Windows, Windows Phone, Azure, with secondary focus on servers, Office, etc.

It is aimed at helping developers and architects build applications and make money off of them (separate programs for technology, architecture, business development, user experience).

Developers that will get more Microsoft attention and support:

- "Microsoft makes general-purpose platforms", yet because there is obvious growth in the areas below, it is putting more resources behind them:
  - Games.
  - Content and media.
  - Line of business applications.
  - Digital customer engagement from non-software companies (e.g., banking, apparel retailers, grocery stores).
  - Enterprise call centre apps.
  - Hobbyists or casual app developers (getting a lot of consumer attention).
- MSDN promotes apps that play up the Microsoft platform features it considers differentiators:
  - Cross-device functionality and integration (Microsoft is self-servingly adamant that this is not a post-PC world: hence the commonalities across PC/phone/tablet in UI, some APIs, code module-sharing).
  - Features that exploit the device:
    - Full use of screen real estate.
    - Touch/swipe interface.

- Shows off Metro UI.
- Live tiles.
- Share and search features.

Differences in hobbyist developer needs (bottlenecks):

- They are younger, less experienced.
- More focused on mobile platforms.
- Need free tools.
- Need easy-to-use tools.
- Perception they can go from app to monetisation rapidly.
- Therefore, need anything that decreases time-to-market.

How Microsoft thinks it can help hobbyist developers better than Apple or Google, removing bottlenecks:

- Easier on-boarding into programs (so they don't go to another platform).
- Flexibility:
    - Payment terms. Apple takes 30%; Microsoft will take 20% after the app generates $25,000.
    - Allows use of third-party payment systems without taking a cut.
    - Allows in-app payments.
    - Allows in-app advertising, even with Google services.

Discovery bottlenecks:

- Microsoft sales force will sell business apps from third-party developers, but this is mostly for big software companies, also Microsoft Partner Network for targeting line of business buyers and SMEs.
- MSDN promotion (to other developers).
- Windows Store is managed separately. But MSDN helps developers with submission process.
- Extensibility points: Bing search, Office.
- "Getting featured in an Apple ad is winning the lottery." 25 companies in the Apple store represent 50% of the revenues. Android generates less revenue because of its focus on cheaper phones - Android users have higher expectations for free apps.
- Developers have to do traditional marketing (hence there are Microsoft programs to educate them on how to do that):
    - Good demos.
    - Offers.
    - SEO.

Relieving bottlenecks (especially business/revenue-oriented ones):

- Helping smaller developer shops and startups learn business acumen.
- Microsoft launched the BizSpark program to support entrepreneurship and help startups grow their business. By providing founders with access to leading technology products, business and technical support, and market visibility, Microsoft is assisting young companies when they need it most. A few global facts:
    - 50,000+ startups in more than 100 countries since November 2008 (interactive map with links to various startups).
    - 2,400+ BizSpark Network Partners assist startups through financial and legal assistance, mentoring, networking and business advice.
    - 35% of these members are in the US, with the remainder based internationally.
- Educational tools for developers.
- Along with the increasing availability of SDK's, Microsoft launched a series of free Developer Camps to provide developers around the globe with in-person trainings for the Windows platform (spanning Windows, Windows Phone, Windows Azure, Office, SharePoint and Web development). In addition to a global calendar of camps, the website features relevant apps and tutorials to check out on demand.

3. AMS-IX

Cara Mascini, Chief Marketing Officer

The Amsterdam Internet Exchange was founded as a not-for-profit organisation offering professional IP exchange services and peering services from international carriers, mobile operators, content providers, hosting and cloud companies, application providers, TV broadcasters and other related businesses. At AMS-IX, Cara is the one who works closest with startups, including smaller developers, especially in mobile gaming, video/social video.

Key bottlenecks for European app economy (relative to the US, especially):

- Lack of revenue growth, inherently smaller markets.
- Local market variability.
- Access to capital:
    - Less aggressive VC culture, very conservative banks.
    - Less tolerance for failure.
- Regulation variability.

Mobile has much more action than smart TV, which has too much hardware platform fragmentation.

Relieving bottlenecks for startups:

- Infrastructure scalability.
- It is difficult, but AMS-IX is trying to facilitate programs for startups to deliver:
    - Consistent terms and conditions across markets and providers.
    - Free or low pricing for peering (though that is controlled by the suppliers in the exchange).
- Less than 10% of AMS-IX resources devoted to startups.

Advice to EC to combat bottlenecks:

- Standardised VAT.
- Although English is widespread, localisation/native language support resources would help.
- Access to capital:
    - Tax breaks especially for angel funding.
    - Insurance or deductions for losses on startup funding.
    - Promote entrepreneurial culture.
    - Education:
        - Business for technologists.

4. Bango

Ray Anderson, CEO, and Anil Malhotra, SVP

Bango is a UK-based mobile payments and analytics infrastructure provider. Bango powers mobile payments for leading app stores, brands, publishers and developers across all devices, networks and connections worldwide. Bango powers mobile analytics for leading content publishers and mobile marketers providing the most accurate measurement of mobile visitors and marketing campaigns. Customers include Facebook, BlackBerry World, Windows Phone Store, Amazon, and major mobile brands including CNN, Cartoon Network and EA Mobile.

Bottlenecks:

- In-app purchasing non-support or regulation by dominant platforms.
- App store payment systems are optimised for credit cards (Bango thinks operator billing is more important; Mozilla, possibly Amazon implementing for lower-cost devices, Eastern European markets); 2% credit card fee, PayPal $6 fee.
- Bango powers Facebook mobile apps payments but there are not many mobile apps for it yet. Facebook is not doing anything to help, or to integrate payments across web and mobile apps.
- Few of the third-party payment companies, even those offered by the carriers, actually cover all of the countries adequately.

- The operators' and handset companies' development support resembles what used to happen in PCs: and who wants to develop only for Dell?

Bango maintains it is not that the payments market is fragmented: it is that app developers do not want to pay another fee, especially if that is on top of the app store revenue-sharing requirements.

Bango has pulled away from supporting small developers. Prefers to work with companies that generate $50,000 in margin a year (at least $1 million in sales).

Advice for the EC:

- Conceivably could legislate platform compatibility: less about technologies and more about standard terms and conditions.
- Conceivably could legislate open access: published business rules that discourage operators and platforms from dealing directly with preferred developers in search of exclusives and special deals.

Job creation/resources:

- 20 engineers.
- 10 doing the collection and distribution of payments.
- Thinks the bigger developers Bango works with have one person dedicated to payments technology, and one to monitoring taxes, collecting fees, etc. (accounting).

Perception of app economy evolution:

- Carriers would be kingmakers.
- Ads will pay for everything. So Google will dominate.
- Apple App Store dominates.

5. Nokia

Yannick Debaupte, Head of Developer Experience, Europe

Business Development Kit (like an SDK):

- To help long-tail developers make a sustainable business (they need way more help here than with tech).
- Payments. Nokia handles operator billing. Promises global coverage. 159 operators in 58 countries. Also advises when credit card billing makes sense.
- Advertising. The Nokia Advertising Exchange (NAX) supports and integrates over 20 ad networks in 200 countries. Single interface, single reporting system. Revenue share is similar to other payments

systems (30%).

- Promotion/Discovery. Microsoft Marketplace. Some pre-loading. Popularity, ratings, editorial curation (e.g., Polish news apps are popular) and developers' own editorial content. Working on creating localised app stores. Working on, but not finished yet: social promotion infrastructure. Lumia enables APIs for third-party discovery apps.
- AppCampus joint effort Nokia, Microsoft, University of Aalto. Grants to startup developers. Over 2,000 submissions so far.

How developers can get Nokia's attention, emphasise and optimise for these features (Nokia has SDKs for each):

- Optics, camera, image capture/share.
- Localisation and mapping/directions. The "Here" maps, augmented reality.
- Music.

Job creation/resources:

- Nokia was not forthcoming on details of resources behind BDK vs. SDK. "Tech resources get leveraged internally as well." Would estimate its SDK vs. BDK ratio at 10 to 1 or 2. But that is a lot - "evangelism is a big cultural change." Would not be surprised if Nokia has as many developer resources in Europe as Microsoft does, and that is probably more than any of the OS platforms or Facebook.
- NAX and BDK have staff in eight European countries, including UK, Germany, France, and Russia.

6. Salesforce.com

Adam Spearing, AVP of Platforms EMEA

Objectives/success metrics for Salesforce via apps:

- New market sectors (penetrate beyond sales automation and customer service):
    o So seeking additional ERP apps (HR, etc.).
    o New focus on marketing tech apps.
- Direct engagement with customers.
- Number of supported ISVs and design wins (for platform).
- Time to market.
- Unique technologies that let less skilled developers make apps.

Some of Salesforce's platform is written in a Declarative Environment (rather than a programming language like C or scripting like HTML): it wants people with business but not technical expertise to build apps.

Then Salesforce can publish the app, manage the shopping cart, manage provisioning (can provision via Apple App Store), integrate its other apps, and integrate Chatter. One group it thinks is promising are the business analysts that used to do Lotus Notes apps. Estimates at 120,000 customers, 70% do declarative, 30% do coding.

Primary European target markets: UK, France, and Germany.

Mobile is focus for new apps (re-porting existing functions to mobile is a lower priority). To get into the Salesforce AppExchange, developers that are building native apps must support iOS and Android. 1700 ISVs.

Salesforce will help customers build their own app stores (via AppExchange):

- Enterprise IT managed stores.
- Systems integrator managed stores.

Salesforce has some limited funding for developers. But it will enable access to its own sales force, and will resell apps. Its sales people get a commission on reselling that is based on revenue sharing (which is less than 30%) so it is not hugely attractive except in big deals.

Bottlenecks/EC advice:

- Thinks its platform helps relieve the shortage of IT developers relative to US. But would like to see universities teach more courses in this style of development.
- Needs some way to diminish the effort it takes to do native language support. Not just a cost issue but a time-to-market issue as well.
- Would like to see the EC promote the concept that cloud-based apps and data are secure (not privacy, but security). Some regulations prohibit that too.

7. mBlox

Damian Cowell, Director of Product Marketing, and Jonas Ingelstrom, Director of Strategic Sales

mBlox makes messaging services and infrastructure for mobile marketing, primarily based on SMS. Getting into push messaging via geotargeting.

Works with 800 operators in over 180 countries, mBlox claims to process billions of messages a year to 6 billion mobile devices worldwide.

Customers include financial institutions, retail, transportation firms, entertainment and media companies, and consumer brands.

Bottlenecks:

- "Developers are developers everywhere, but apps are farther along in the US." Driven by smartphone adoption.
- US developers can target a larger, more concentrated market:
  - That means that upfront investment to create and market an app is more scalable.
- Mobile advertising started as banners/branding, will ultimately be "lower on the marketing funnel", but people do not understand that yet. Thinks Google is making a big push to promote that (more than Apple).
- Fragmented wallets/payment systems. Makes offer-based mobile marketing difficult, and brands will resist handing over customer relationships to Google/Apple.
- Apple is discouraging single-function or one-time throwaway marketing apps. Do not do a guidebook app for a city, do one with multiple city downloads. This will be good for sustainability in the long run, but it is challenging for small developers to start.

Job creation/resources:

- Has sales offices in Italy, Spain, France, Germany, Nordic, UK.
- Needs to add consulting expertise. Push marketing and rich messaging are new, need strategic consulting support as well as tech support.
- In messaging, the ratio of tech support resources to consulting/business support is 10-20:1.

mBlox wants its own business model to resemble that of a technology provider, rather than a consulting company or agency. So it is unwilling to build out too much of that capability. Possibly looking to partners or subcontractors for that role.

Advice to the EC:

- Create platform layer above the OS platforms. HTML5 is very viable for e-commerce apps.
- Support those development tools companies that build cross-platform tools.

8. Bash Gaming

Sumit Gupta, CEO

Bash Gaming is an established social/mobile game developer (casino games and bingo) that is launching real-money bingo gambling in the UK.

Some comments on bottlenecks:

- High cost of customer acquisition. He claims real-money gaming (poker, sports, casino games) spend a huge $150 average cost per customer. TV advertising. CPC on Google is $4. (Of course he thinks he can spend only $3-5 by migrating some of his existing base, and taking advantage of established Bingo brand.)
- European mobile customer acquisition. Also challenging. Fragmented advertising coverage: lots of small, unsuccessful ad networks, carriers, etc. "Like the early days of the web before consolidation." 20 big players, 100 small ones. No cross-platform marketing/usage measurement standards.
- European payments infrastructure. Apple approves real-money gaming where it is legal, but does not participate much in the payment infrastructure: therefore app developers have to work out deals with a fragmented group of 20-50 payments companies (including PayPal). Need back-end infrastructures that are licensed and regulated. He said, however, that it is turning out to be a little easier than he thought to do that, and do the integration, since the companies are eager for partners.
- Mobile experience. It is easy to make a good mobile sports betting and poker app. Harder to deliver multiplatform, multiuser, social game experiences. (Of course Bash is good at it.)

Other data points:

- Bingo Bash has 7 million MAU, 2 million daily. 20% Europe. Almost 2 million MAU in UK.
- Expecting much less than 3% conversion rate to real-money bingo.
- Bingo spending should be $10-20/month if it mimics offline (bingo halls) patterns. (Much less than poker apps.)

9. Netbiscuits

Daniel Weisbeck, CMO and Chief Product Officer

Supplies framework/platform and development services for building web and hybrid mobile sites (they call them apps, but they are anti-native app, very pro HTML5).

HQ in Kaiserslautern, Germany, but most customers are US-based multinationals. Offices in NY, SF, UK, etc.

150 employees, very small training team.

Works with eBay, Coke, Diageo, CBS, MTV Networks, Axel Springer, Spiegel, hotel.de, Kraft, L'Oreal.

Dabbles in B2B, almost no resources devoted to it.

Netbiscuits has been around since 2000. Did a lot of initial work around feature phones.

Claim to fame: library of devices, can test mobile website performance against thousands of phones. API for that library.

Started as an agency but really wants to be a software company.

Outsourcing the actual implementation work as much as possible directly to customers or their agencies/systems integrators. Big SIs like Accenture do not get it yet, mostly Netbiscuits works with agencies like Sapient Nitro or Mindtree.

European conditions:

- Competition mostly from US (e.g., Appcelerator).
- Mobile momentum starting UK, Germany, Nordic.
- Lots of the European activity is starting around B2B (B2E he calls it) IT, but companies like IBM and SAP are clueless about adapting user experiences - which is driving mobile - onto their apps For example, Netbiscuits has done a SharePoint "wrapper" for one of its beverage customers because adoption was so low.
- Market/country fragmentation is increasing. Mandates web > native strategy (of course).
- Dramatic decline in paid native apps.

The HTML5, responsive design pitch:

- Native apps = social media, games.
- "Responsive design" is the new buzzword, even more than HTML5.
- They are both methodologies at heart, require training, lots of the people doing either one are doing it badly.
- European (and US) developers are still doing both badly. They are not ready for APIs, etc., yet; still need to learn how to do the core methodology. Not ready for standardised components, etc.
- RESS - REsponsive design plus Server Side components/services, including handling images, video, etc.
- Facebook was very public. Still believes in HTML5 but it wasn't ready yet.
- Basic skills = HTML, XML, maybe HTML5.
- Only takes three days training to learn their platform.

Success metrics that Netbiscuits' clients are looking for:

- Multi-device, multi-region coverage.
- Increased engagement:

- o Time spent with the site/app.
- o Some kind of conversion (to purchase, registration, etc.)
  - ▪ So Netbiscuits tries to make the case that, for conversions, it is all about app performance (speed of download, response time, etc.)

Netbiscuits and discovery:

- Not really what they do. Don't advise on ad spending, search spending, etc. It is not that there is no equivalent to apps stores for website discovery, it is just that is not what Netbiscuits does.
- Netbiscuits advises on user experience.
- Has seen clients' marketing departments take charge on mobile because they looked at search spending and the spenders were not realising that lots of searches originated from mobile devices and therefore had much lower conversion rates. Bad $ spending allocation.

What the EC could do:

- Build up education and communities (of expertise) around HTML5 and responsive design.
- Especially around B2B space, which could help establish European leadership. (Assumption: US will dominate consumer games, etc., and US companies like IBM are missing the boat. Salesforce.com is not, however.)

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