|  |  |  |
| --- | --- | --- |
|  |  | H:\shared\Partners-External\Suppliers\China-Europe International Business School (CEIBS)\Logos and Templates\CEIBS-New logo.jpg |

9B17M127

testin: Parternering with multinational corporations

Shameen Prashantham and Liman Zhao wrote this case solely to provide material for class discussion. The authors do not intend to illustrate either effective or ineffective handling of a managerial situation. The authors may have disguised certain names and other identifying information to protect confidentiality.

*This publication may not be transmitted, photocopied, digitized, or otherwise reproduced in any form or by any means without the permission of the copyright holder. Reproduction of this material is not covered under authorization by any reproduction rights organization. To order copies or request permission to reproduce materials, contact Ivey Publishing, Ivey Business School, Western University, London, Ontario, Canada, N6G 0N1; (t) 519.661.3208; (e)* [*cases@ivey.ca*](mailto:cases@ivey.ca)*;* [*www.iveycases.com*](http://www.iveycases.com)*.*

Copyright © 2017, China Europe International Business School Version: 2017-08-22

On March 21, 2017, Beijing Information Technology Co., Ltd. (Testin), an automated cloud-based testing platform for mobile applications (apps), launched one of the world’s most advanced testing systems, the all-performance A/B system. This important milestone followed a funding round of US$30 million[[1]](#footnote-1) in 2016, and built on multiple strategic partnerships established subsequent to its founding in 2011. Reflecting on this achievement, Jun Wang, the founder of Testin, commented, “The success of Testin proves that the stronger your partners are, the more successful your company can become.”

Within five years of being established in 2011 (largely in response to the growth of the mobile Internet market in China), Testin had served over 800,000 app developers by conducting more than 150 million quality and security tests on over 2.5 million mobile apps through its automated Cloud Testin (云测) service (supported by testing labs), and its Crowd Testin (众测) service, which employed part-time qualified testers. Testin had worked hard at building strategic partnerships with global leaders in chip manufacturing and operating systems, such as Intel Corporation (Intel) and ARM Holdings (ARM). By August 2016, Testin had received three rounds of financing totalling over $80 million.

Looking ahead, Wang was concerned that Testin’s rapid growth had attracted the unwelcome attention of large Chinese Internet companies. Wang had resisted being acquired or agreeing to exclusive service deals, as he felt that maintaining neutrality was vitally important. At the same time, he was also keen to ensure that Testin remained agile and that this five-year-old enterprise could “stay hungry and stay foolish.”

Creation of Testin

The Founder: Jun Wang

Wang and his co-founders had identified an entrepreneurial opportunity while working for Pica Corporation (Pica),[[2]](#footnote-2) which Wang had joined in 2006 following stints with one Chinese and one American company. At Pica, Wang was responsible for app testing programs. In 2011, when Pica was acquired by Chinasoft International Ltd., Wang decided to start up a new venture dedicated to solving a problem he had spent countless hours dealing with, namely, ensuring the compatibility of mobile apps with the multiple devices available on the market. It was time consuming to test every device and operating system in the mobile ecosystem; Wang and his colleagues often worked through the night to guarantee the quality of apps. Moreover, producing test reports was a boring, repetitive task. Wang and his co-founders believed there was an opportunity to develop an automated process for mobile app testing that would help developers economize on the time spent on quality assurance (QA) and help optimize the overall process.

In June 2011, Testin was founded in Beijing. Six of its seven founding members had worked for Pica. Wang and his co-founders invested about $1 million of their own savings in Testin. They bought all the mobile phone models they could find, and built the initial version of their cloud testing platform. By the end of 2015, they had amassed over 6,000 devices, including mobile phones, tablets, smart televisions, and other terminals in Testin’s machine room, where the devices occupied several cabinets (32 devices per cabinet). Different tests were run on the devices based on automated testing scripts.

A One-Stop Cloud-Based Testing Service

Testin’s flagship offering, Cloud Testin, provided a one-stop service over the entire life cycle of an app (see Exhibit 1), including detailed beta testing, functional testing, compatibility testing, crash analysis, and promotion. There were different levels of service. The first (basic) level, which Wang compared to flying economy class, was 90 per cent free, and it provided developers with an automated test report. The next level, likened to flying business class, involved a detailed test report costing ¥15,000–20,000.[[3]](#footnote-3) The final level, akin to flying first class, offered a value-added service with a fee equivalent to 20 per cent of the transaction amount, which typically varied between $200,000 and $500,000. As Wang noted, “By November 2016, the number of our business class and first class developers [was] over 10,000.”

In its first three years, Testin focused on QA tests, the number of which grew exponentially (see Exhibit 2): whereas only 100 tests were run in Testin’s first month, within four years that number had reached 100 million.[[4]](#footnote-4) Wang attributed some of this success to the support Testin had received as a start-up from two large Western multinationals, Microsoft Corporation (Microsoft) and IBM.

Strategic Partners for Early Start-up Development

Microsoft

In 2012, Testin applied to join the new Microsoft Ventures Accelerator (MVA) program at the premises of the Microsoft Asia-Pacific Research and Development Group in Beijing. Testin was admitted to the program in July 2012, and it then went through an intensive six-month program. Testin was able to attract Microsoft’s attention because its innovations were perceived to be novel yet complementary to Microsoft’s own areas of expertise. Moreover, Testin was seen to be addressing a potentially large opportunity at the right time, and its services were likely to be in demand among Microsoft’s clients. “Microsoft intended to build such an ecosystem to test whether the services provided by the start-ups were needed by Microsoft’s clients,” Wang explained. “Testin tried to serve millions of developers, who were clients to Microsoft. Thus, we fit in its ecosystem.”

The MVA program helped entrepreneurs such as Wang meet the challenges of launching a company, finding customers, and expanding to the global market through access to top business mentors, technology and marketing experts, office space, and other resources needed to help scale their business.[[5]](#footnote-5) Testin took advantage of this opportunity and impressed Microsoft with its technology and growth, as evidenced by the fact that Testin won two awards, the MVA Cloud Business Growth Award and the MVA Growth Star Award at Demo Day on December 20, 2012. Microsoft recommended Testin to its clients, and the companies collaborated on an intelligent monitoring system for mobile apps.

IBM

In parallel with its stint in the MVA program, Testin became one of the six start-ups selected (from a pool of over 100 applicants) in August 2012 to join IBM’s SmartCamp program, aimed at empowering start-ups and driving innovation. The program had three parts: a mentoring boot camp, a large-scale networking event, and a global start-up pitch competition. Mentors from within and without IBM supported the start-ups.

According to Wang, Testin was able to attract IBM’s interest for the following reasons:

First, Testin has complementary advantages to IBM, [which] understands that the key players in the mobile Internet ecosystem are not traditional state-owned enterprises or Fortune 500 companies anymore. Second, IBM was adjusting its strategy around 2012, which was called “Mobile First.” It tried to put more focus on mobile Internet, and thus wanted to find good opportunities by working with partners in this industry.

Regarding the support Testin received from IBM, Wang stated, “The biggest benefit was helping us become professional and learn how to provide standardized services. As you know, most new start-ups, especially those following a B2B [business-to-business] model, know very little about professional standards, including the processes, quality control, product delivery, and problem solutions, etc. We gained a lot of know-how from IBM.”

Strategic Partners for Subsequent Business Development

Beyond those initial dealings with Microsoft and IBM, Wang realized the potential of the opportunities he was pursuing. Testin had to establish close partnerships with Western multinationals, such as ARM and Intel, which provided key components, including microprocessors, for mobile phones. Wang explained, “By collaborating with both ARM and Intel, Testin’s services could cover almost all of the mobile Internet industry.”

For a young Chinese firm, building these relationships would not be easy. “Some of the partners are extremely important to our development,” Wang explained. “They have overwhelming superiority in certain areas which are indispensable to us.” Testin therefore worked hard at co-opting strategic partners such as ARM and Intel.

INTEL

Testin sought to work with Intel, which was keen to make progress in the Chinese mobile telephone market. Intel had been slow to react to the smartphone revolution in Western markets, and Testin found that Intel readily responded to its overtures. At the end of 2012, Intel and Testin jointly held a contest, inviting participants to develop, adapt, and optimize their apps on Intel’s platforms and relevant devices using Testin’s cloud testing service.[[6]](#footnote-6) In 2013, Intel and Testin jointly established the Intel Architecture Platform Mobile App Developer Alliance to popularize Intel’s architecture and help developers transplant their mobile apps onto the Intel platform. In order to empower those developers, the alliance provided a one-stop service as well as technological and marketing support.[[7]](#footnote-7)

In 2014, Testin and Intel launched another program to encourage global developers to test their apps and devices using Intel central processing units on a Testin testing platform. Testin provided all performance, function, and compatibility tests free of charge. In addition, developers had an opportunity to access Testin’s services, worth about $77,000. After the tests, developers could upload and promote their apps, and use the One Button Publishing function to release their apps on Lenovo, AppChina, Aptoide, Meizu, and Crossmo Appstores. By the end of 2015, more than 500,000 tests had been run on the Testin platform.[[8]](#footnote-8)

ARM

Even more desirable as a strategic partner was ARM, the British microprocessing company that had gotten an advantage over Intel in the smartphone market and had worked closely with Apple Inc. Testin’s efforts to build a relationship with ARM began in 2012. To give ARM the opportunity to get to know Testin better, Wang and other top managers took part in important events organized by ARM or in which ARM participated. Wang began a dialogue with ARM’s Chinese branch, and thereafter with ARM’s headquarters in the United Kingdom. Building this relationship took time, since ARM wanted to be sure of the quality and potential of a hitherto unknown Chinese start-up. Moreover, Testin had to adjust to ARM’s characteristically British approach to cultivating trust and developing relationships incrementally.

Of building the relationship, Wang commented, “Rome was not built in a day. It took about two years for Testin to build a partnership with ARM.” Eventually, ARM was convinced of Testin’s capabilities and recognized its strong position in the Chinese market. This market was of vital importance, as ARM supplied the microprocessors used in Apple iPhones. On October 14, 2014, Testin announced a strategic partnership with ARM and the establishment of ARM’s application Testin centre*.* The purpose of the collaboration was to help global developers accelerate their ARM-based mobile app time-to-market in China. ARM’s centre would allow global developers to obtain compatibility and optimization guidance through Testin, while optimizing app performance with ARM technologies.

Wang commented, “Through this partnership, we can now provide more in-depth analysis [at the] system level to optimize the application performance for global developers. We can help them to flourish in China’s fragmented mobile app market by being compatible with multiple silicon vendors’ chips and OEMs’[[9]](#footnote-9) devices.”

Dennis Laudick, vice president of Partner Marketing at ARM, similarly commented,

We [ARM] design the processors that are found in about 95 per cent of the mobile devices in the world today. And of course, we’re very proud of that, but it’s really the developers, and the applications that go on top of that, that bring these devices to life. So that’s why it’s really important to us that we engage with the developer community and support the developer community, and we make it easy for people to be successful in developing applications that users are gonna love. And that’s why we’re happy to be partnering with a company called Testin, who developed a platform that makes it easier to deal with the fragmentation, to deal with some of the problems in getting your devices out to the market. So we’re pleased to be here with them today.[[10]](#footnote-10)

Being able to co-opt Intel and ARM as strategic partners made it easier for Testin to establish other relationships. For instance, Imagination Technologies Group plc, the company that supplied the graphic processor for the iPhone 7, agreed to collaborate with Testin. On November 10, 2015, the two companies jointly launched the Imagination Application Testin Center. Through the centre’s website, developers targeting the Greater China[[11]](#footnote-11) market would be able to upload their applications and games, and run them through automated tests for functionality, stability, user interface, and performance, thus ensuring compatibility with their Imagination-based devices.

# Continuous Growth while Partnering with multinational corporations

## Co-operation with Key Chinese Players

Testin continued to establish strategic partnerships with important Chinese players. For instance, Testin provided value-added services to BAT⎯the three leading Chinese companies in the Internet industry, Baidu Inc., Alibaba Group Holding Ltd., and Tencent Holdings Ltd.⎯ and closely collaborated with many terminal providers, such as Samsung Electronics Co., Ltd., Lenovo Group Ltd., and OPPO Electronics Corp.

In July 2015, LeTV, one of the largest online video companies in China, held a conference with the theme “we are one.” As an important partner of LeTV, Testin was invited to join the conference, at which it and LeTV jointly announced they would collaborate on the LeTV Intelligent Ecosystem Offline Lab.[[12]](#footnote-12) On October 22, 2015, Testin was invited to join the 4th AndroidWorld Global Developers Conference and Global Mobile Internet Leadership Summit, where it provided the official testing platform.[[13]](#footnote-13)

An increasingly important arena for Testin was mobile games. In the previous four years, over 5,000 developers had tested their mobile games through Testin’s platform. Testin thus accounted for 90 per cent of the testing market for mobile games and apps.[[14]](#footnote-14) In order to provide better services to mobile game developers, Testin and Shenzhen Wisdom Spark Technology Co., Ltd. (widely known as DataEye[[15]](#footnote-15)), a large data company focusing on the mobile gaming industry, signed a strategic contract in September 2015, which would allow users to access both DataEye and Testin from the same account. DataEye would offer a professional, in-depth platform for operation data analysis, channel analysis, advertisement monitoring, and technological support, while Testin would provide mobile game developers with function testing, compatibility testing, and crash analysis.[[16]](#footnote-16)

New Labs

In parallel with the relationship building activities described above, Testin expanded its core automated cloud-based service by building a lab in Shanghai in July 2014 to provide developers with helpful information in the fast-changing mobile Internet era.

A year later, it built two more testing centres, in Guangzhou and San Francisco. The Testin labs regularly produced reports on the hundreds of millions of tests run on the millions of apps on its platform, together with data from other labs. Online rankings such as *Android App Index Ranking* and *Android Terminal Index Ranking in China* made Testin more visible in the Internet industry.[[17]](#footnote-17)

In addition, Testin built a joint lab with Beihang University’s School of Software and the Shanghai Real Machine Testing Center in conjunction with Unity Technologies Inc., a leading global game software developer. It also built a testing centre in collaboration with the Chengdu Mobile Internet Association.[[18]](#footnote-18)

Crowd Testin: A Crowdsourcing Platform for App Testing Services

Testin introduced a new initiative in the form of a crowdsourcing platform in March 2015. By the end of 2015, there were more than 160,000 experienced testers registered on this massive testing platform (mtestin.com) to perform QA testing. The platform’s slogan was “let the professionals do what they are specialized in.” By bringing together this community of experts, Testin could provide app developers with Software as a Service (SaaS) easily and quickly. In particular, the experts could provide personalized service. Wang believed that app testing was a highly standardized and repetitive job, which could easily be outsourced.[[19]](#footnote-19) He explained,

Like Uber, Crowd Testin is an open platform with a sharing economy mindset. This massive testing platform provided opportunities to millions of excellent app testers to use their talents and make a profit. In addition, the developers could get quality service and great experience through our platform. Thus, it is a multi-win game for the engineers, developers, and Testin.[[20]](#footnote-20)

Financing and Internationalization

Since its foundation, Testin had attracted many well-known investors. International Data Group Inc., an investor in Pica, where Wang and his co-founders had previously worked, invested $9.9 million in Testin in its series A round of financing in 2011. In 2014, Testin received $25 million in its B round of financing from Banyan Capital and International Data Group. On July 18, 2015, Testin’s fourth anniversary, Wang announced that a B+ round of financing⎯a $20 million investment by Haiyin Capital and others⎯had just been completed. In August 2016, Testin closed its C round of financing from a U.S. dollar fund, attracting another $30 million and increasing its valuation to $840 million (post-money).[[21]](#footnote-21)

Testin planned to apply the latest investment to four areas, namely, updating current services, expanding the talent pool, developing its market, and internationalization. Wang stressed that Testin would provide a one-stop service during the whole life cycle of the apps, including research and development, testing, marketing and positioning, marketing promotion, and relevant analysis—and thus become the biggest ecosystem for app developers around the world.[[22]](#footnote-22)

Over the previous five years, Testin had expanded its overseas network. For instance, many overseas WeChat users had provided feedback on Testin’s platform, which allowed domestic developers to know how to improve their products for the international market. Testin’s operational team in San Francisco had helped over 100 developers based in North America to test their apps and launch them in China. Chinese developers entering overseas markets, including India, Vietnam, Indonesia, Malaysia, Thailand, Russia, Brazil, and Venezuela, encountered several problems. For instance, they discovered that developers and users in other countries worried about terminal devices made in China and about the performance and compatibility of apps made by Chinese developers. As a result, Testin became involved in helping developers address technology problems in many countries.

# Challenges along the Way

## Being Competitive

Wang was clear that there were many competitors, both at home and abroad, offering compatibility testing, functionality testing, and load testing services. Though giants like BAT had also built a cloud testing platform, Wang had confidence in Testin, which had over 40 patents.[[23]](#footnote-23)

Compared with international competitors, who usually focused on a specific function, Testin aimed to offer a platform that provided integrated services. In addition, the free model (about 90 per cent of Testin’s services were provided free of charge) was popular in China and was difficult for Western companies to compete with.

Compared to other domestic competitors, which included huge companies such as Baidu Inc., Testin could not only undertake a comprehensive range of tests but also provide cross-platform comparisons that revealed the nature and extent of bugs. Moreover, Testin could advise developers about the bugs most commonly encountered by other developers and offer advice on how to fix them.

## Maintaining Neutrality

Through working with strong partners, Testin had grown to be a leading provider of cross-platform cloud-based automated testing solutions. The goal of Testin was to benefit all developers, whether small or large. This intention had never changed.

In the first three months after Testin was founded, a number of big companies seemed intent on acquisition. Later on, BAT communicated a desire to invest in Testin. However, Wang and his team believed that it was important to maintain neutrality and thus avoided the overtures of these Internet giants.[[24]](#footnote-24)

Early in 2012, a prominent multinational corporation offered Testin a large amount of money to provide exclusive data and services. Wang decided to say no, explaining, “We want to grow along a public development path. Although this happened in our early stage[s], we chose not to accept such an offer to provide quality service for only [a] few big clients, because we would lose the opportunity to collaborate with many other outstanding and promising partners.”

## More to Do

Wang understood that there would be many other challenges going forward. For him, it was critical to balance growth and profits—a challenge for any company. Wang understood that it was important to stay ahead of the competition in a rapidly changing industry. He believed that Testin needed to remain the leading provider of testing solutions and to maintain its competitive advantages through innovation. How could Testin continue to pursue strategic partnerships without compromising its neutrality?

**Exhibit 1: Testin’s One-Stop Service over the entire app Life Cycle**

Build

***Good Enough***

* Beta Test
* Remote Manual Test
* Functional Test
* Usability Test
* Compatibility Automation
* Network & Localization Test
* Loading Test
* Security Test

Trial & Release

***Confidence***

* Acceptance Test
* A/B & Sustainability Test
* Seed User Engagement

Analyze

***Reliable & Intelligent***

* AppBase Synergy Analytics
* User Performance Cognition
* Security Advisory
* Private Cloud
* Human Engagement

Machine Learning

Artificial Intelligence

Big Data

Source: Company documents.

Exhibit 2: Number of quality assurance Tests Run since testin’s Foundation

Source: “Testin: Growth of the Originator of Cloud Testing Service of Mobile Apps,” July 27, 2015, accessed February 23, 2016, http://tech.it168.com/a2015/0727/1749/000001749656.shtml.

1. All currency amounts are in U.S. dollars unless otherwise specified. [↑](#footnote-ref-1)
2. Pica stood for Personalized Information and Communication Assistant. Pica Corporation was founded in September 2004, to develop mobile phones apps and provide related services. [↑](#footnote-ref-2)
3. This price was applicable since it was set up in 2014; ¥ = CNY = Chinese yuan; US$1 = ¥6.14, ¥6.23, and ¥6.64 in 2014, 2015, and 2016, respectively. [↑](#footnote-ref-3)
4. “Testin: Growth of the Originator of Cloud Testing Service of Mobile Apps,” IT168, July 27, 2015, accessed February 23, 2016, http://tech.it168.com/a2015/0727/1749/000001749656.shtml. [↑](#footnote-ref-4)
5. Microsoft Accelerator, accessed February 29, 2016, https://www.microsoftaccelerator.com/. [↑](#footnote-ref-5)
6. “Intel and Testin Jointly Hold Android App Contest,” CCIDNET.com, March 1, 2013, accessed January 18, 2017, http://miit.ccidnet.com/art/32559/20130301/4766797\_1.html. [↑](#footnote-ref-6)
7. “Intel and Testin Cloud Testing Jointly Build IA Platform Mobile App Developer Alliance,” August 27, 2013, accessed February 24, 2016, http://tech.163.com/13/0827/11/979GONIN00094N7V.html. [↑](#footnote-ref-7)
8. “The 4th Cooperation: Testin and Intel Jointly Launch a Developer Support Plan,” July 30, 2014, accessed February 24, 2016, http://power.qudong.com/2014/0730/180505.shtml. [↑](#footnote-ref-8)
9. OEM stands for original equipment manufacturer. [↑](#footnote-ref-9)
10. “ARM Talks Testing,” Testleo.com, March 5, 2015, accessed July 12, 2017, http://en.testleo.com/archives/2584. [↑](#footnote-ref-10)
11. The Greater China market included Mainland China, Hong Kong, Macau, and Taiwan. [↑](#footnote-ref-11)
12. “Testin Cloud Testing Would Build LeTV Intelligent and Ecological Offline Lab,” July 16, 2015, accessed January 18, 2016, http://news.163.com/15/0716/17/AULMBMRQ00014AED.html. [↑](#footnote-ref-12)
13. “Testin Becomes the Official Testing Platform of AndroidWorld Global Developer’s Conference,” October 22, 2015, accessed January 18, 2016, http://tech.163.com/15/1022/10/B6HARNQV00094PDU.html. [↑](#footnote-ref-13)
14. “Discovering How Testin Seized 90 Percent of the Mobile Game Market,” April 27, 2015, accessed February 23, 2016, http://games.ifeng.com/mobilegame/chanye/detail\_2015\_04/24/41021801\_0.shtml. [↑](#footnote-ref-14)
15. DataEye was a statistical analysis platform launched by Shenzhen Wisdom Spark Technology Co., Ltd. [↑](#footnote-ref-15)
16. “Testin Cloud Testing and DataEye Sign a Strategic Collaboration Agreement,” sohu.com, September 11, 2015, accessed January 18, 2016, http://www.sohu.com/a/31460657\_114795. [↑](#footnote-ref-16)
17. “Testin Announced to Set Up a Lab to Become the ‘Idea Bank’ for Chinese Mobile App Developers,” July 3, 2014, accessed March 1, 2016, www.cctime.com/html/2014-7-3/2014731813173443.htm. [↑](#footnote-ref-17)
18. Ibid. [↑](#footnote-ref-18)
19. “Testin Mass-testing: Changing the Traditional App Testing Industry,” March 24, 2015, accessed January 18, 2016, http://games.qq.com/a/20150324/042453.htm. [↑](#footnote-ref-19)
20. “Testin Officially Launches a Crowd-sourcing App Testing Service ‘Testin Mass-testing,’” March 10, 2015, accessed January 18, 2016, www.doit.com.cn/article/2015-03-10/6180577.shtml. [↑](#footnote-ref-20)
21. Post-money valuation was the value of a company after an investment was made. This value was equal to the sum of the pre-money valuation and the amount of new equity. [↑](#footnote-ref-21)
22. “Testin Receives 54.9 Million Dollar in Financing and Launches One Package Service of App Testing,” July 23, 2015, accessed January 18, 2016, http://news.163.com/15/0723/21/AV86LC7700014AED.html. [↑](#footnote-ref-22)
23. “Testin: The ‘All-purpose Adapter of Developers,” June 22, 2013, accessed January 18, 2016, http://finance.sina.com.cn/roll/20130622/002715878122.shtml. [↑](#footnote-ref-23)
24. “Testin Cloud Testing: Searching for Pain Points and Business Opportunities during Testing Apps,” September 17, 2014, accessed January 18, 2016, http://tech.sina.com.cn/i/2014-09-17/16099617134.shtml. [↑](#footnote-ref-24)