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Tiange – Virtual Sales, Zombie Users

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The Basics	
Ticker:	1980.HK
Recent Price:	HK\$6.17
Market Cap:	HK\$8.1bn

Emerson Analytics Forecast
<i>Delisting</i>

Tiange has been fabricating its operating and financial performance from the days it was preparing for its Hong Kong IPO in mid-2014. Our research and investigation show that it has exaggerated the user base of its live video streaming communities by about 6x and inflated its revenue by more than 100%.

According to iResearch, a mainland China industry expert, penetration rate of Tiange's video streaming communities was only 1/8 of that of 6.cn, a peer we regard as most comparable. Tiange derives revenue from selling virtual currency mainly through third-party distributors and their sales agents and in 2013 recognized 44% of total user spending as its revenue. Based on numbers disclosed by Tiange and 6.cn, Tiange's implied TUS in 2013 was 4.3x that of 6.cn.

Sales agents are supposed to transfer payment to the distributor's account. But we have concrete evidence that payment made by sales agents for the purchase of virtual currency goes directly into a Tiange executive's personal bank account. End-user's payment through sales agents also goes directly to a Tiange subsidiary's bank account. If all payments bypass the distributors, they cannot contribute any revenue to Tiange.

Our investigations also reveal that four of the distributors that had existed at the time of Tiange's IPO have since been dissolved. For 2016, the biggest existing distributor reported revenue merely 2.6% of the amount that it supposedly had received from working for Tiange. If one eliminates all the "contributions" from the distributors, Tiange's real revenue over the years amounts to merely 48% of reported numbers in aggregate.

Tiange – Virtual Sales, Zombie Users

We have adopted two different approaches to ascertain the company's user base: by monitoring the total concurrent users of Tiange communities, and by analyzing its bandwidth costs to extrapolate its peak concurrent user base. Different methods lead to one conclusion: Tiange inflates the number of its MAUs by about 6x. Based on assumptions in favor of Tiange, we conclude that the company's revenue in 2013 was at most 41% of its claim.

There is no doubt that the business model and financial statements of Tiange are seriously fraudulent, to the extent that there is simply no need for a valuation analysis. For a long-running case of criminal deception, the only appropriate regulatory action is Delisting.

Tiange – Virtual Sales, Zombie Users

Table of Contents

Part 1 Can One-eighth Users Generate 4x Total Spending?.....	6
1.1 <i>Attributable Revenue Amounts to 44-54% of Total User Spending</i>	7
1.2 <i>Tiange's Implied TUS was 4.3x of its Peer in 2013.....</i>	8
1.3 <i>Tiange 2013 Penetration Rate Only one-eighth of That of 6.cn.....</i>	10
Part 2 Sales Agents Pay Tiange Directly – What About the Distributors?.....	12
2.1 <i>3Q15 Presentation Shows Sales Agents' Cash Goes Directly to Tiange.....</i>	12
2.2 <i>Sales Agent's Payment Transferred to Executive's Personal Bank Account</i>	15
2.3 <i>End-user's Payment through Sales Agent Goes Directly to Subsidiary's Account.....</i>	17
Part 3 Non-existent Distributors	21
3.1 <i>Four Distributors at the IPO Stage Now Dissolved.....</i>	21
3.2 <i>Largest Distributor Had Revenue at Merely 2.6% of Attributable Amount</i>	23
3.3 <i>Another Distributor Had merely Rmb2.7m Revenue in 2016.....</i>	25
3.4 <i>Without Distributors, Tiange Actual Revenue only 48% of Reported.....</i>	26
Part 4 Tiange User Base Way Below Reported Levels	27
4.1 <i>Tiange's Concurrent Users Not Even One-tenth of That of 6.cn in 2016.....</i>	27
4.2 <i>Bandwidth Cost Suggests Actual Users Inflated by 6.6x.....</i>	32
4.3 <i>Three methods lead to one conclusion – MAUs inflated by about 6x</i>	36
4.4 <i>Tiange's Actual 2013 Revenue Less than Half of Reported</i>	37
Part 5 Valuation.....	39
Appendix I: TUS, Revenue and Top Five Distributors' Contribution.....	40
<u>Appendix II: Statistics for Concurrent Users</u>	
<u>Appendix III: Statistics for Bandwidth</u>	

Tiange – Virtual Sales, Zombie Users

List of Exhibits

Exhibit 1 – Tiange revenue breakdown 2011-16	6
Exhibit 2 – Tiange retains 30-40% of TUS for virtual currency sold through distributors	7
Exhibit 3 – According to iResearch, Tiange's TUS was 2.9x that of 6.cn in 2013	9
Exhibit 4 – Penetration rates of leading social video streaming websites/apps – March 2013	10
Exhibit 5 – Distributors' purported roles	12
Exhibit 6 – No major role for distributors in 3Q15 corporate presentation	13
Exhibit 7 – Application for becoming a Sina Show sales agent	14
Exhibit 8 – Relationship among Tiange, distributors and sales agents, myth and reality	15
Exhibit 9 – Sina Show sales agents platform	16
Exhibit 10 – C2C payment goes to Zhu Yue's personal bank account	17
Exhibit 11 – Two ways to pay for virtual currency on 9158 Video Community via a sales agent	18
Exhibit 12 – Paying for virtual currency on 9158 Video Community via payment link	19
Exhibit 13 – Payment for 9158 Video Community's virtual currency goes to Jinhua 9158	20
Exhibit 14 – Hangzhou Xuanni acts as 9158.com's sales company	22
Exhibit 15 – Four Distributors at the IPO Stage Now Dissolved	22
Exhibit 16 – Walrus Network claims it is 9158 Video Community's sole operator	23
Exhibit 17 – Implied revenue of largest distributor at Rmb327m in 2016	24
Exhibit 18 – Walrus Network revenue at only Rmb8.5m in 2016	25
Exhibit 19 – Beijing Ruima revenue merely Rmb2.7m in 2016	26
Exhibit 20 – Actual revenue about 48% of reported amount after excluding distributors	26
Exhibit 21 – Number of Tiange concurrent users	28
Exhibit 22 – Concurrent users of all communities	29
Exhibit 23 – Concurrent users of six video communities by the hour, Day 1	30
Exhibit 24 – Communities with stagnant concurrent users, Day 1	31
Exhibit 25 – Tiange concurrent users just a fraction of 6.cn level	31
Exhibit 26 – Alibaba CDN bandwidth list prices	33
Exhibit 27 – Main categories for monitoring bandwidth consumption	34
Exhibit 28 – Reported bandwidth cost just a fraction of our estimates	35
Exhibit 29 – MAUs summary (in thousands)	36
Exhibit 30 – KPIs reported by Tiange and 6.cn, 2013	37
Exhibit 31 – Actual MAUs suggest Tiange's revenue was only 41% of its claim in 2013	38
Exhibit 32 – TUS, revenue and revenue proportion	40

Tiange – Virtual Sales, Zombie Users

Disclaimer

We are a group of seasoned equities analysts with many years of experience in the research of economic and political trends as well as individual stocks around the world. With background in various international investment banks, we have followed the development of the Chinese equities market right from day one.

We are determined to expose as much of the fraud in the Chinese stock market as we can. The most widespread and serious fraud is probably that undertaken by listed companies, in fabricating non-existent businesses and stealing shareholders money, among other tricks.

In exposing these crimes we challenge the listed companies to prove the integrity of their announcements and financial statements. The listed companies, of course, want everybody to believe that their announcements and financial statements are true. Their auditors, employees, independent directors, lawyers, shareholders and even the general public all hope that these announcements and financial statements are true.

We have made our best effort to ascertain that everything we say in this report is accurate. We have obtained our information from public sources that we believe to be accurate and reliable, or from sources whom we believe are not insiders or connected parties to the companies mentioned herein. However, we are certainly NOT in the business of making investment recommendations. This is not an investment report and should not be regarded as such. Read and use our reports at your own risk. Most important of all, DO YOUR OWN RESEARCH BEFORE YOU COMMIT OTHER PEOPLE'S MONEY.

We and/or our associates/partners may have long or short positions in the equities and/or their derivatives at the time of publication of our reports, and we and/or our associates/partners may maintain or change our positions at any time.

Tiange – Virtual Sales, Zombie Users

Part 1 Can One-eighth Users Generate 4x Total Spending?

Tian Ge Interactive Holdings Limited (Tiange) was listed in Hong Kong in July 2014. It has reported compound revenue growth of 17% per annum from Rmb384m in 2011 to Rmb834m in 2016. However, our investigations reveal that its sales and distribution model is fraudulent, and that it has fabricated its user numbers and financial performance even before its initial public offering (IPO).

At the time of its IPO, Tiange operated eight "many-to-many" live social video streaming communities, including 9158 Video Community and Sina Show, its two primary communities, and one "one-to-many" community, Sina Showcase. Our research and investigation show that these three communities have always accounted for the bulk of Tiange's revenue.

Exhibit 1 below shows Tiange's revenue breakdown during 2011-16. Note that it ceased to provide revenue contribution by communities after its IPO, and from 2015 onward it further combined revenue from live social video platforms and games into a single online interactive entertainment service.

Year end Dec 31 (Rmb m)	2011	2012	2013	2014	2015	2016
Live social video platform	370	437	528	631		
9158 Video Community	152	166	194			
Sina Show	115	191	232			
Sina Showcase	4	13	18			
Other communities	99	67	85			
Games and others	14	19	20	61		
Mobile and online games	3	2	3			
Others	11	16	17			
Total	384	456	548	692		
Online interactive entertainment service	373	440	531	692*	591	759
Others	11	16	17	0	87	75
Total	384	456	548	692	678	834

Source: Tiange

* Including revenue from other businesses

Tiange – Virtual Sales, Zombie Users

1.1 Attributable Revenue Amounts to 44-54% of Total User Spending

Tiange derives revenue from the sale of virtual currency, which can be used to purchase virtual goods on its platforms.

Virtual currency sold but yet to be converted into virtual goods is accounted for as customer advance or deferred revenue. At the end of 2013, Tiange reported Rmb24m of aggregate customer advance and deferred revenue against revenue recognition of Rmb548m for the year. We regard this timing difference as insignificant.

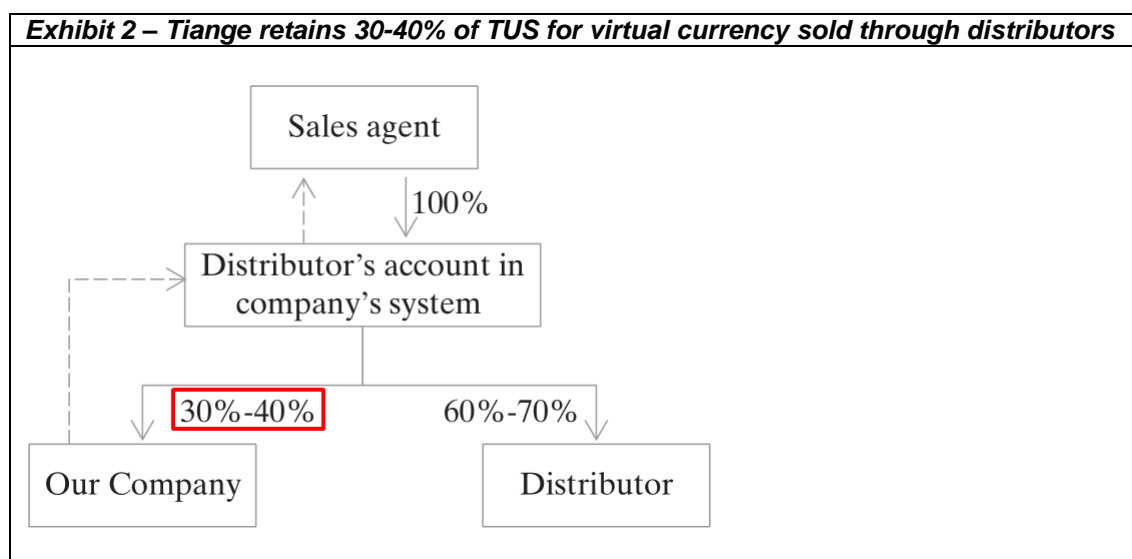
Tiange sells virtual currency (i) through third-party distributors and sales agents and (ii) directly to users.

According to the IPO prospectus dated June 25, 2014, distributors enter into distribution agreements with Tiange, pursuant to which they have the right to purchase virtual currency from the company on a set discounted basis. They then enter into sub-distribution agreements with sales agents, who are responsible for sales to users.

(i) Through third-party distributors and sales agents

For the years ended December 31, 2011, 2012 and 2013, Tiange sold about 85%, 84% and 86%, respectively, of virtual currency through third-party distributors and sales agents.

For virtual currency sold through third-party distributors, Tiange takes a share of 30% to 40% of total user spending (TUS), as shown below in Exhibit 2. In our analysis, we assume an average share of 35%.



Source: Tiange IPO prospectus, p.175

Tiange – Virtual Sales, Zombie Users

(ii) Directly to users

For the years ended December 31, 2011, 2012 and 2013, Tiange sold about 15%, 16% and 14%, respectively, of virtual currency directly to its end-users.

For such sales, naturally Tiange retains 100% of TUS.

Accordingly, we can estimate that Tiange's revenue from live social video streaming communities amounted to about 44% (= 14% * 100% + 86% * 35%) of TUS in 2013. This is in line with the IPO disclosure that "platform operators typically receive approximately 40% to 50% of total user spending"¹.

Over the years, the effective share of revenue that Tiange can recognize from the sale of virtual currency has ranged between 44% and 54%.

For a more detailed discussion of Tiange's sales structure, please see **Appendix I: TUS, Revenue and Top Five Distributors' Contribution**.

1.2 Tiange's Implied TUS was 4.3x of its Peer in 2013

For its IPO, Tiange paid iResearch, an independent industry expert, Rmb385k to prepare a report on the interactive entertainment market in China. The iResearch report, whose date has not been revealed, lists Tiange, YY Inc. (YY.O), Jinhua Changfeng and 6.cn as leaders in the live social video community market in terms of 2013 TUS.

Since 2015, live video streaming has becoming an increasingly popular entertainment in mainland China. Among the major players, we regard 6.cn as most comparable to Tiange. For a better understanding of 6.cn's business, please see [關於宋城股份發行股份及支付現金購買資產並募集配套資金暨關聯交易之獨立財務顧問報告](#) (Independent Financial Adviser's Report on Song City's Proposed Asset Acquisition in Cash and Shares, Related Funding and Connected Transactions, or the 6.cn IFA Report).

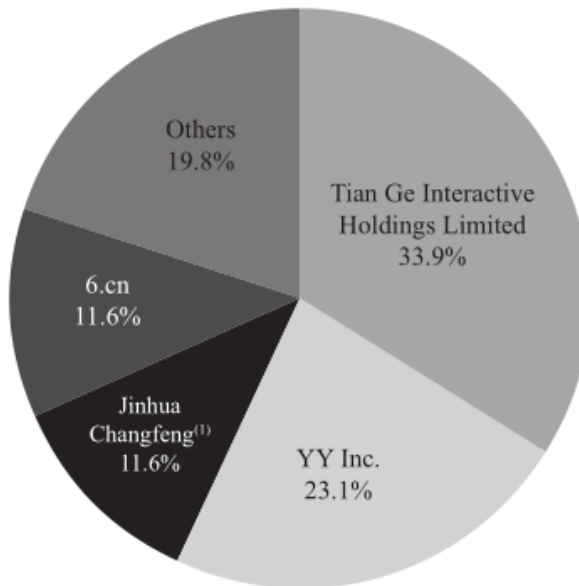
According to the IPO prospectus, iResearch estimates that Tiange had a 33.9% market share in terms of TUS in China's live social video community market in 2013, compared to 11.6% for 6.cn. This implies that Tiange's TUS was 2.9x that of 6.cn.

¹ <http://www.hkexnews.hk/listedco/listconews/SEHK/2014/0625/LTN20140625065.pdf>, p105

Tiange – Virtual Sales, Zombie Users

Exhibit 3 – According to iResearch, Tiange's TUS was 2.9x that of 6.cn in 2013

China's Live Social Video Community Market Share by User Spending in 2013



Note: YY Inc.'s revenue only includes users spending on its online music and entertainment business, as its games business is mostly MMORPGs and web games which are outside of the market scope.

(1) Operator of Guagua.cn (its major community) and other communities.

Source: iResearch Report

Source: Tiange IPO prospectus, p.106

Based on the numbers disclosed by Tiange and 6.cn, we can conclude that:

- Tiange reported Rmb528m of revenue from live social video streaming business in 2013, implying TUS of about Rmb1,198m (= 528 / 44%).
- According to the 6.cn IFA Report, 6.cn achieved revenue of Rmb281m in the same year. Unlike Tiange, 6.cn does not rely on distributors for its sales. Its reported revenue is therefore the same as its TUS.
- Tiange's TUS in 2013 was therefore 4.3x (= 1,198 / 281) that of 6.cn, higher than the estimate made by iResearch.

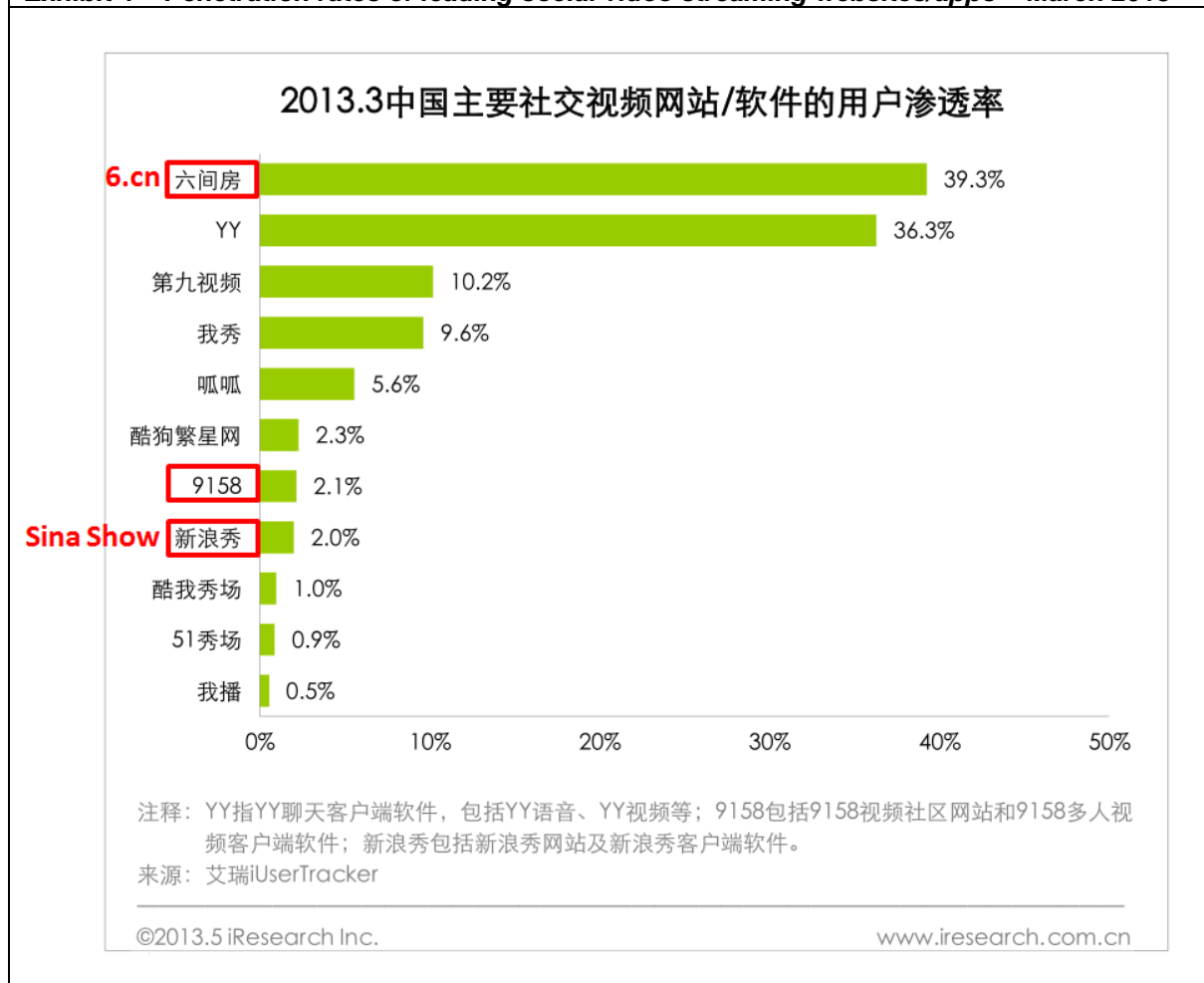
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1.3 Tiange 2013 Penetration Rate Only one-eighth of That of 6.cn

Before taking on Tiange's IPO-related job, iResearch published independently a report entitled 中國社交視頻行業發展研究報告 2013 年 (China Social Video Streaming Industry Development Research Report 2013) in July 2013. According to this report, Tiange's 9158 Video Community achieved a penetration rate of 2.1% in March 2013 while its Sina Show achieved a penetration rate of 2.0% in the same month. A community's penetration rate is calculated as the total number of its unique visitors during the month divided by the total number of unique visitors for all social video streaming communities in the same month.

Tiange reported a year-on-year revenue growth of 21% in 2013, which was much lower than the industry growth rate of 54%². Taking the March 2013 penetration rates as the full year rates is an assumption to the advantage of Tiange.

Exhibit 4 – Penetration rates of leading social video streaming websites/apps – March 2013



Source: <http://www.iresearch.com.cn/report/1988.html>, p.11

² IPO prospectus, p.105

Tiange – Virtual Sales, Zombie Users

We can see from Exhibit 1 above that 9158 Video Community and Sina Show together accounted for 81% of Tiange's live social video streaming revenue in 2013. From this, we can extrapolate that the total penetration rate of all Tiange's video streaming communities was about 5.1% (= 4.1% / 81%). This was only one-eighth of that of 6.cn (5.1% / 39.3% = 12.9%).

Naturally, the question is, how could Tiange achieve TUS equivalent to 4.3x that of 6.cn, with a penetration rate only 12.9% of that of the latter?

Tiange – Virtual Sales, Zombie Users

Part 2 Sales Agents Pay Tiange Directly – What About the Distributors?

From 2011 through 2016, the top five Tiange distributors accounted for 67%, 69%, 68%, 60%, 46% and 48%, respectively, of the company's total cash proceeds received from sales of virtual currency and game coins. However, our investigations reveal that the distributors do not perform any meaningful functions and do not really receive any money from the sales agents.

We have concrete evidence that payment made by sales agents for the purchase of virtual currency goes directly into a Tiange executive's personal bank account. End-user's payment through sales agents also goes directly to a Tiange subsidiary's bank account. **If all payments bypass the distributors, how can they contribute any revenue to Tiange?**

2.1 3Q15 Presentation Shows Sales Agents' Cash Goes Directly to Tiange

Tiange says it works with third-party distributors to manage the sales and marketing of its virtual currency. Distributors manage various aspects of the company's ecosystem, including day-to-day management of sales agents and promotional functions, such as host recruitment and marketing.

Exhibit 5 below, extracted from Tiange's IPO prospectus, shows that distributors supposedly played an important role in the development of their respective and assigned live social video communities.

Exhibit 5 – Distributors' purported roles

Participant	Numbers during TRP	Relationships with our Company and other participants	Responsibilities/Activities
Distributors. . .	<ul style="list-style-type: none"> 5, 6 and 4 distributors in 2011, 2012 and 2013, respectively, and 3 distributors as of December 31, 2013 Each community only has one distributor. 	<ul style="list-style-type: none"> All distributors are independent from our Company Enter into annual distribution agreements with our Company 	<ul style="list-style-type: none"> Manage the sales and marketing of virtual currency Hire, train and manage sales agents Recruit hosts and identify profitable genres and content Market and promote our communities and brand

Source: IPO prospectus, p.168

Tiange – Virtual Sales, Zombie Users

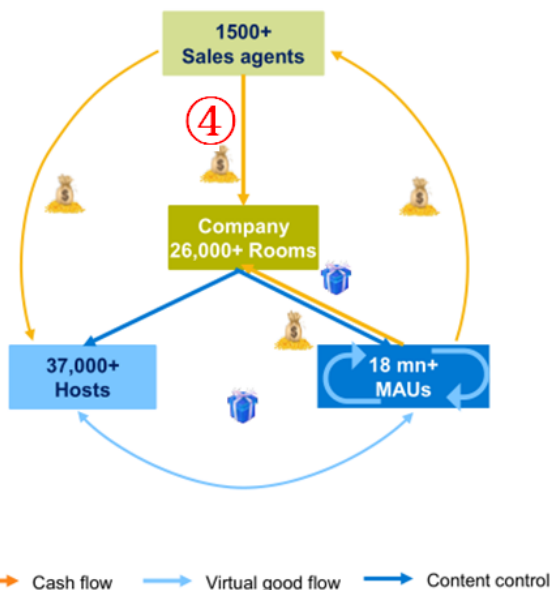
However, about a year after its listing, Tiange more or less expunged the distributors from its 3Q15 corporate presentation. In Exhibit 6 below, the flow chart on the left has no role for distributors in Tiange's cash flow and virtual goods flow. Sales agents feature prominently in this slide, while distributors are merely mentioned briefly in passing as managers of specific communities (red item 1) and buyers of virtual currency (red item 2).

Exhibit 6 – No major role for distributors in 3Q15 corporate presentation

2 Established and Trusted Ecosystem

The participants in our communities and the underlying infrastructure of our platform form an established and trusted social ecosystem with high barriers to entry

Unique ecosystem based on symbiotic relationships



① Each community has an assigned exclusive distributor for the management and distribution of virtual currency in their respective platforms

Sales agent

- Sales agents help to recruit hosts and identify profitable genres and room content
- Sales agents sell virtual currency to users in the room and enable wide geographical coverage of users

Host

- Attract users and promote room interaction and virtual goods consumption
- Users on air often become hosts

Company

- Develop and maintain the technology to support live social video platform
- Sell virtual currency to **distributors** and **arrange sales agents enter rooms** to sell to users
- Monitor the content and ensure a healthy platform



Source: <http://www.tiange.com/Upload/Tiange%203Q15%20PPT%2011.30.2015%E5%8E%BB%20appendix.pdf>, p12

Tiange claims that it is the distributors' responsibility to hire, train and manage sales agents. However, sales agents are actually recruited by Tiange (or its subsidiary) directly. Take Sina Show for example. Its client software carries a "Join as agent (加盟代理)" link (see Exhibit 21 below) that goes to a page shown in Exhibit 7 below.

Tiange – Virtual Sales, Zombie Users

Exhibit 7 – Application for becoming a Sina Show sales agent

新浪SHOW 代理商火热招募
想小投资大收益吗？想坐在家中月薪过万吗？
新浪SHOW给你机会，实现梦想！

代理商盈利优势

新浪SHOW是中国最大的视频语音互动社区，拥有上亿的注册用户，每天在线用户近百万，商机无限！新浪SHOW代理商，可享受**最庞大**的客户资源，**最给力**的销售提成，**最丰富**的奖励政策，**最贴心**的资金支持！可代理U点、秀星、贵族等增值产品，还拥有精品UC靓号配送权。

代理商招聘要求

- 1.要熟悉了解新浪SHOW聊天站，有良好的信誉及积极努力的心态。
- 2.要有长期稳定的在线时间，每天在线时间不低于8小时，有视频，麦克风。
- 3.要具有良好的人际关系，有较强的销售沟通能力。
- 4.要有一定的经济基础及周转资金，在新成为代理商时需准备5000元启动资金。
- 5.招聘对象：有经验的区长、室主或优秀的职业人。
- 6.代理商需有中国工商银行帐号，并开通网银。

代理商申请途径 How to apply

代理商申请联系：

- 2029306252
- 1936105873
- 2367565094
- 2902067866
- 1927764322
- 2263583918

Source: <http://vip.show.sina.com.cn/2010agent/>

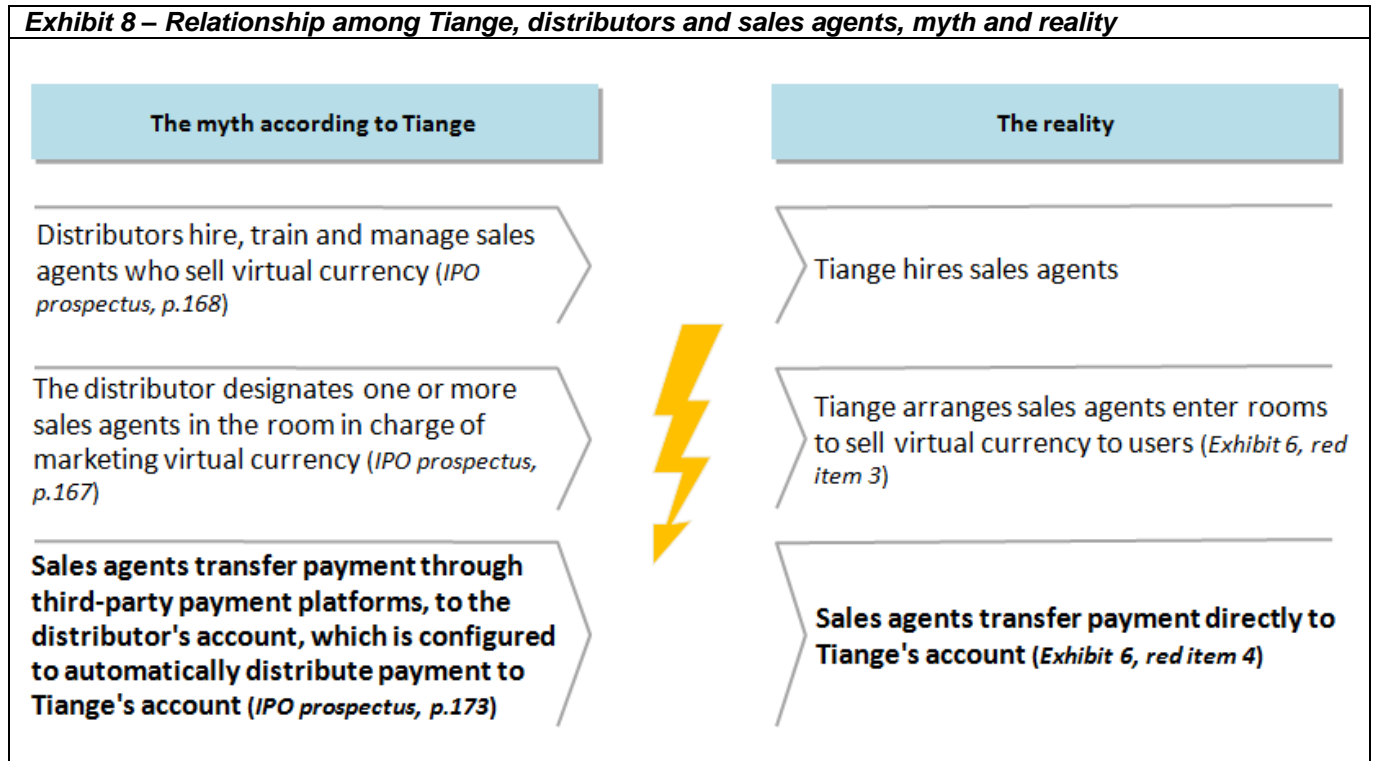
At the bottom of this page are customer service contacts in the form of QQ (an instant message application by Tencent Holdings Limited (Tencent, 0700.HK)) numbers. One such contact claimed to be an employee of Jinhua Xingxiu Cultural Communication Co., Ltd. (Jinhua Xingxiu, 金華星秀文化傳播有限公司), a subsidiary of Tiange and the operator of Sina Show³. We have submitted the relevant information, together with various other evidences, to the Securities and Futures Commission (SFC) of Hong Kong.

In Exhibit 8 below, we contrast the purported and actual relationship among Tiange, distributors and sales agents. Simply put, the company claims that distributors hire sales agents and arrange them to sell virtual currency in various rooms within the community that they manage. Sales agents then transfer payment to

³ IPO prospectus, p.142

Tiange – Virtual Sales, Zombie Users

the distributor's account. In reality, it is Tiange itself (or its subsidiary) that hires sales agents and arranges them to sell virtual currency in various rooms. Sales agents also pay Tiange (or its subsidiary) directly for the purchase of virtual currency.



Source: Emerson Analytics

Perhaps Tiange will say that the slide in Exhibit 6 contains a few mistakes due to the inexperience of some junior staff. We will, however, present below payment slips showing that sales agents' payment indeed went directly into bank accounts controlled by Tiange.

2.2 Sales Agent's Payment Transferred to Executive's Personal Bank Account

During our investigation into Tiange, an Emerson staff had the opportunity to observe the payment process of a Sina Show sales agent, and found that the money was transferred to the personal bank account belonging to a company executive.

There are two ways for a Sina Show sales agent to pay for the purchase of virtual currency. The first is by E-bank payment, and the second is by C2C payment via Industrial and Commercial Bank of China (ICBC, 1398.HK), as shown in Exhibit 9 below.

Tiange – Virtual Sales, Zombie Users

Exhibit 9 – Sina Show sales agents platform

The screenshot shows the 'Sina Show Sales Agents Platform' interface. At the top, there is a navigation bar with the Sina Show logo and the text '代理商后台' (Agent Backend) and 'Sina Show Sales Agents Platform'. Below the navigation bar, there is a sidebar menu on the left with categories: '账户管理' (Account Management), '点卡管理' (Point Card Management), '业务管理' (Business Management), '借款/转账管理' (Loan/Transfer Management), and '记录查询' (Record Query). The main content area is titled '账户充值' (Account Recharge). It contains a form with fields for '账户:' (Account), '姓名:' (Name), and '账户余额:' (Account Balance). Below these fields is a text input field labeled '请输入你要充值的全额:' (Please enter the full amount you want to recharge:). Underneath the input field, there are three payment options: 'E-bank payment', '网银支付' (Online Payment), and '工行C2C支付' (ICBC C2C Payment). The '网银支付' and '工行C2C支付' options are highlighted with red boxes. To the right of these options is the text 'ICBC C2C payment'. Below the payment options is an orange button labeled '下一步' (Next Step).

Source: <http://sales.show.sina.com.cn/>

If the sales agent chooses to use E-bank payment, he will be taken to a Chinese third-party payment system named IPS. The system shows that name of the merchant is <http://show.sina.com.cn>, and it is not entirely clear where the money has gone. On the other hand, using ICBC's C2C payment system reveals that, after a series of steps such as inputting account number and password, the money goes to the personal bank account of someone named Zhu Yue (朱越).

Tiange – Virtual Sales, Zombie Users

Exhibit 10 – C2C payment goes to Zhu Yue's personal bank account

The screenshot displays the ICBC (Industrial and Commercial Bank of China) online banking interface. The top navigation bar includes the ICBC logo and the text '中国工商银行 金融@家 个人网上银行'. Below this is a search bar and a '系统公告' (System Announcement) section. A main menu lists various services such as '我的账户' (My Account), '定期存款' (Fixed Deposit), '通知存款' (Notice Deposit), '公益捐款' (Public Welfare Donation), '转账汇款' (Transfer/Payment), '私人银行' (Private Banking), '网上贷款' (Online Loan), '银医服务' (Bank-Medical Service), '养老金' (Pension), and '社会保险' (Social Insurance). A secondary menu includes '工行理财' (ICBC Wealth Management), '网上基金' (Online Fund), '账户商品' (Account Product), '账户外汇' (Account Foreign Exchange), '网上贵金属' (Online Precious Metals), '网上债券' (Online Bonds), '结售汇' (Settlement/Exchange), '银证业务' (Bank-Security Business), '网上期货' (Online Futures), '网上保险' (Online Insurance), and '银商银权转账' (Bank-Merchant/Bank-Power Transfer).

The main content area shows a transaction history for '我的账户 > 账务查询 > 明细查询' (My Account > Statement Query > Detailed Query). The transaction details are as follows:

卡号: [Redacted]	交易日期: [Redacted]	记账日期: -
交易场所: 网上银行	摘要: C2C支付	交易国家或地区简称: CN
对方户名: 朱越 Beneficiary: Zhu Yue		
钞汇标志: 钞	资金流向: 支出	余额: [Redacted]
交易币种: 人民币	交易金额: [Redacted]	
记账币种: -	记账金额: -	

A '返回' (Return) button is located below the transaction details. Below the transaction details is a section for '交易提示' (Transaction提示) with a lightbulb icon.

Source: <http://mybank.icbc.com.cn/>

The Jinhua Xingxiu customer service officer has identified Zhu Yue as the company's senior executive.

2.3 End-user's Payment through Sales Agent Goes Directly to Subsidiary's Account

The situation at 9158 Video Community is similar to that at Sina Show. An end-user can buy virtual currency through a sales agent in two ways: one is to pay into the agent's personal bank account, and the other is to pay online via payment link (see Exhibit 11 below).

Tiange – Virtual Sales, Zombie Users

Exhibit 11 – Two ways to pay for virtual currency on 9158 Video Community via a sales agent

杭州★小可 915872277

自助充值网址: <http://pay.9158.com/v/...> 加为好友

资料 相册 动态

个性签名更新:自助充值网址:
<http://pay.9158.com/v/CUP/netPay.aspx?aid=30403>
Payment link

帐 号: 915872277
昵 称: 杭州★小可
备 注: - 添加备注

个人说明

户名: 刘双云
中国: 4563 5130 0032 6913 392
工商: 6222 0232 0203 8856 000
农业: 6228 4800 5164 7798 712
招商: 6225 8827 0634 7033
建设: 6222 8028 7124 1098 795
邮政: 6210 9852 0001 1676 420
交通: 6222 6006 1001 9885 916
Bank accounts information

主 页: <http://pay.9158.com/v/ips/netPay.aspx?aid=30403>
Agent ID

备注信息 您还没有对 915872277 添加备注信息。备注信息可以帮助您记录好友的真实资料、联系方式、事件行为等一系列信息。
添加备注信息

Source: Emerson Analytics

If one pays into the sales agent's personal bank account, one will not know where the money goes next. Fortunately, one can see where the money goes by using the payment link, as shown in Exhibit 12 below.

Tiange – Virtual Sales, Zombie Users

Exhibit 12 – Paying for virtual currency on 9158 Video Community via payment link

The screenshot shows the payment interface for 9158.com. At the top, there is a navigation bar with the 9158.com logo, '充值首页' (Recharge Home), '充值9158币' (Recharge 9158 coins), '升级皇冠' (Upgrade Crown), '靓号' (Nice Number), and a user profile area with '[退出]' (Logout) and '充值帮助' (Recharge Help). Below the navigation bar is a progress bar with five steps: '1.选择业务' (Select Business), '2.选择金额及支付方式' (Select Amount and Payment Method), '3.确认充值' (Confirm Recharge), '4.在线支付' (Online Payment), and '5.充值完成' (Recharge Complete). Step 2 is currently active. Below the progress bar, there are options for '选择充值用户' (Select Recharge User): '自充值' (Self-recharge) and '给他人充值' (Recharge for others). Underneath, there are tabs for '选择充值方式' (Select Recharge Method): '网银快捷' (Online Banking Quick), '网银' (Online Banking), '支付宝' (Alipay), and '微信支付' (WeChat Pay). The '网银快捷' tab is selected. Below the tabs, there are logos for 'UnionPay' and 'ChinaPay' with a red notice: '您仅需要一张银行卡(支持信用卡),输入卡号,即享安全、便捷的支付体验!' (You only need a bank card (supporting credit cards), enter the card number, and enjoy a safe and convenient payment experience!). Below this, there is a section '请选择支付金额:' (Please select the payment amount:). It contains several buttons for different values: '价值3万9158币' (39,158 coins) with '30元' (30 Yuan) selected, '价值5万9158币' (59,158 coins) with '50元' (50 Yuan), '价值10万9158币' (109,158 coins) with '100元' (100 Yuan), '价值50万9158币' (509,158 coins) with '500元' (500 Yuan), '价值100万9158币' (1,009,158 coins) with '1000元' (1,000 Yuan), and '价值200万9158币' (2,009,158 coins) with '2000元' (2,000 Yuan). There is also a '价值20万9158币' (209,158 coins) option with a text input field containing '200' and a note: '200元起充值且都要为10整数递增' (Recharge starts at 200 Yuan and must increase by 10 integer increments). On the left side of the interface, there is a customer service chat window with a woman's face and buttons for '客服中心' (Customer Service Center), '联系客服' (Contact Customer Service), and '投诉建议' (Complaint and Suggestion). At the bottom right, there is a '微信支付' (WeChat Pay) button.

Source: <http://pay.9158.com/>

After a series of steps such as inputting account number and amount, we can see that payment for virtual currency goes to the account of Jinhua 9158 Network Science and Technology Co., Ltd. (Jinhua 9158, 金华就约我吧网络科技有限公司). This is the Tiange subsidiary that is responsible for operating the 9158 Video Community⁴.

⁴ IPO prospectus, p.141

Tiange – Virtual Sales, Zombie Users

Exhibit 13 – Payment for 9158 Video Community's virtual currency goes to Jinhua 9158

The screenshot displays a payment confirmation interface from ChinaPay. At the top, there are logos for '银联在线' (ChinaPay Online) and 'ChinaPay 银联电子支付公司'. Below the header, a green checkmark indicates a successful transaction. A table provides the following details:

订单号:	[Redacted]	交易日期:	[Redacted]
金额:	[Redacted]	商户名称:	金华就约我吧网络科技有限公司 (无卡)
交易结果:	交易成功	Merchant name: Jinhua 9158 Network Science and Technology Co., Ltd.	

Below the table, there is a button labeled '直接跳转' (Direct Jump) and a message: '请不要关闭浏览器, 0 秒后系统将自动跳转回商户首页。' (Please do not close the browser, the system will automatically jump back to the merchant's homepage in 0 seconds.)

At the bottom, the ChinaPay logo and contact information are listed:

银联电子支付 CHINAPAY
银联电子支付服务有限公司 沪ICP 备05011014
地址: 上海市东方路800号 宝安大厦29.30楼 | 邮编: 200122
24小时服务热线: 95534-6 | 公司电话: (86-21)60872088 | 传真: (86-21)60872000
官方网站: <http://www.chinapay.com>

On the right side of the page, there is a promotional banner for '掌柜钱包' (Merchant Wallet) with the text '闲钱理财神器' (Idle Money Investment Magic Tool) and '1分钱起购' (Purchase from 1 cent).

Source: <http://payment.chinapay.com/>

So, if sales agents' money is transferred directly to Tiange, where does that leave the distributor?

Tiange – Virtual Sales, Zombie Users

Part 3 Non-existent Distributors

We have shown in Part 2 that the distributors who supposedly account for a significant portion of Tiange's revenue actually do not take up the roles that Tiange assigns to them, and that sales agents deal directly with Tiange.

Our investigations reveal that several of the distributors that existed at the time of Tiange's IPO have since been dissolved. Further, the biggest existing distributor actually had revenue equal to merely 2.6% of the amount that it supposedly had received from working for Tiange.

If one eliminates all the "contributions" from the distributors, Tiange's real revenue over the years amounts to merely 48% of reported numbers in aggregate. This means it has inflated its revenue by at least one time.

3.1 Four Distributors at the IPO Stage Now Dissolved

Tiange had five, six and four distributors in 2011, 2012 and 2013, respectively. At the end of 2013, Tiange cooperated with three distributors who covered its nine communities. However, Tiange has never revealed the identity of these distributors.

Although these distributors don't contribute any real revenue to Tiange, we can still see some "business activities" related to Tiange undertaken by these distributors. We believe these are a smokescreen to help make Tiange's story more convincing.

After searching extensively for "business activities" undertaken by these distributors, combined with information on the distributors' staff movement, we have managed to find a few of the distributors. Among them, the logo behind the reception desk at Hangzhou Xuanni's office suggests that it acted as 9158 Video Community's sales company, as shown in Exhibit 14 below.

Tiange – Virtual Sales, Zombie Users

Exhibit 14 – Hangzhou Xuanni acts as 9158.com's sales company



Source: <http://www.19lou.com/user/album-19289966-200000000103057-2000000003722512-1.html>

The table in Exhibit 15 below lists some of the basic information of six distributors we have found. Four of them, interestingly, had been dissolved one after the other over the years.

Exhibit 15 – Four Distributors at the IPO Stage Now Dissolved

Name	Short form	Chinese name	Date established	Status	Date dissolved
Hangzhou Xuanni Network Technology Co., Ltd.	Hangzhou Xuanni	杭州軒尼網絡科技有限公司	9/12/2005	Dissolved	8/14/2015
Hangzhou Xuanxiu Network Technology Co., Ltd.	Hangzhou Xuanxiu	杭州軒秀網絡科技有限公司	1/24/2011	Dissolved	1/27/2014
Hangzhou Kuni Network Technology Co., Ltd.	Hangzhou Kuni	杭州酷尼網絡科技有限公司	12/20/2012	Dissolved	2/15/2016
Jinhua Ruima Information Technology Co., Ltd.	Jinhua Ruima	金華瑞瑪信息技術有限公司	4/15/2013	Dissolved	8/21/2014
Walrus Network Technology (Hangzhou) Co., Ltd.	Walrus Network	海象網絡科技(杭州)有限公司	1/20/2014	Operating	
Beijing Ruima Times Information Technology Co., Ltd.	Beijing Ruima	北京瑞瑪時代信息技術有限公司	2/10/2014	Operating	

Source: Emerson Analytics

Tiange – Virtual Sales, Zombie Users

3.2 Largest Distributor Had Revenue at Merely 2.6% of Attributable Amount

Tiange was listed on the Hong Kong stock market on July 9, 2014. On the same day, Walrus Network (100% held by an individual named Sun Bin (孫斌)) published on its website an article entitled 海象集團助天鵝互動成功上市 (Walrus Group helps Tiange Interactive listing). The article claims the company was the only entertainment business operator of 9158 Video Community. (The self-proclaimed Walrus Group is in fact Walrus Network itself as information from Enterprise Credibility Information System (ECIS) shows that Walrus Network has no subsidiary).

Exhibit 16 – Walrus Network claims it is 9158 Video Community's sole operator



The screenshot shows the website for Walrus Network Technology Co., Ltd. The header includes the company logo and navigation links: 首页, 集团简介, 业务介绍, 集团文化, 联系我们. The main content area features a large blue banner with the text '集团动态' (Group News) and a globe icon. Below the banner is a news article titled '海象集團助天鵝互動成功上市' (Walrus Group helps Tiange Interactive listing) dated 2014-07-09 00:00:00. The article text states: '2014年7月9日, 海象集團成功幫助天鵝互動有限公司(股票代號: 1980)正式在港交所挂牌上市, 融資超過16億港元, 開盤價5.99港元, 較5.28港元的發行價上漲13.4%。上市後, 天鵝互動總股本達到12.17億股; 按開盤價計算, 天鵝互動市值達73億港元(約合人民幣58億元)。天鵝互動是繼歡聚時代(VV)登錄納斯達克之後, 又一個成功上市的视频互動社區。天鵝互動成功上市表明秀場模式再次得到投資商的認可, 成為草根互聯網登錄資本市場的又一典型樣本, 且再次驗證了优酷土豆、愛奇藝之外的视频行業第二種路徑。許多人并未聽說過天鵝互動, 但其旗下有著“網絡秀場鼻祖”之稱的“9158”和2010年併入天鵝互動的“新浪SHOW”等多個社交視頻平台早已名聲在外。目前, 天鵝互動旗下擁有八個“多對多”實時的社交視頻社區, 以及一個“一對多”社區, 即新浪秀場。' A red box highlights the text '作为9158唯一的娱乐服务运营商' (As 9158's sole operator,). Below this, another red box contains the text 'As 9158's sole operator,'.

Source: <http://www.walrushz.com/index/newsInformation.htm?channelId=18>

According to a hiring advertisement placed by Walrus Network last December on www.chinahhr.com, the company provided, among other things, operational services to 9158 Video Community, Sina Showcase,

Tiange – Virtual Sales, Zombie Users

Tiao58.com and Duoduo Games⁵, all belonging to Tiange. One can therefore safely assume that Walrus Network is Tiange's biggest distributor.

In 2016, Tiange reported online interactive entertainment service revenue of Rmb759m, of which 23% came from its largest distributor. This works out to Rmb176m (= 759 * 23%). Given the distributor's 65% revenue share in TUS, the largest distributor should have achieved revenue of Rmb327m, as shown below in Exhibit 17.

Exhibit 17 – Implied revenue of largest distributor at Rmb327m in 2016	
Year end Dec 31 (Rmb m)	2016
Online interactive entertainment service	759
x Largest distributor's contribution	23%
= Revenue from largest distributor	176
/ 35%	35%
= TUS	503
x 65%	65%
Revenue of largest distributor	327

Source: Emerson Analytics

However, a search into ECIS shows that Walrus Network had revenue of merely Rmb8.5m last year, or a miniscule 2.6% of the amount that it was supposed to have achieved. This is another convincing evidence that distributors provided no revenue to Tiange.

⁵ <http://www.chinahr.com/job/19881460226948.html>

Tiange – Virtual Sales, Zombie Users

Exhibit 18 – Walrus Network revenue at only Rmb8.5m in 2016

序号	股东 Shareholder	出资额 (万元)	认缴出资时间	认缴出资方式	实缴出资额 (万元)	实缴出资时间	实缴出资方式
1	孙斌 Sun Bin	1000	2014年1月20日	货币	1000	2014年1月20日	货币

共查询到 1 条记录 共 1 页

对外投资信息 共计 1 条信息

杭州仟米投资管理合伙企业 (有限合伙)
· 统一社会信用代码/注册号: 91330101088889659G

企业资产状况信息

资产总额	148.290155 万元	所有者权益合计	-495.32747 万元
Revenue 营业总收入	854.584225 万元 Ten thousands Yuan	利润总额	-430.07931 万元
营业总收入中主营业务收入	854.584225 万元	净利润	-430.07931 万元
纳税总额	60.245814 万元	负债总额	643.617625 万元

Source: ECIS

3.3 Another Distributor Had merely Rmb2.7m Revenue in 2016

A similar situation can be found in Paopao8.cn's distributor.

In a hiring advertisement on December 12, 2013, Jinhua Ruima claimed to be the operator of Paopao8.cn⁶. This company existed for just 16 months, from April 15, 2013 through August 21, 2014, and was 90% controlled by Zhu Jun (祝军) and 10% by Duan Qiuyu (段秋雨).

On February 10, 2014, Zhu Jun set up a wholly-owned company Beijing Ruima. On December 31, 2015, Zhu Jun transferred 99% of his shareholding to Duan Qiuyu and retained only 1%.

The operator of Paopao8.cn then changed from Jinhua Ruima to Beijing Ruima⁷.

ECIS data show that Beijing Ruima had revenue of merely Rmb2.7m in 2016.

⁶ <http://www.ganji.com/gongsi/20816649/>

⁷ <http://www.ganji.com/gongsi/33419843/>

Tiange – Virtual Sales, Zombie Users

Exhibit 19 – Beijing Ruima revenue merely Rmb2.7m in 2016

Beijing Ruima Times Information Technology Co., Ltd.	
企业名称	北京瑞玛时代信息技术有限公司 万元 Ten thousands Yuan
年报年度	2016
资产总额	338.1
负债总额	304.4
营业总收入 Revenue	269.01
其中主营业务收入	268.93
利润总额	-15.46
净利润	-15.46
纳税总额	9.1512
所有者权益合计	33.7

Source: ECIS

Clearly, Walrus Network and Beijing Ruima can never provide the kind of revenue that Tiange claims to get from its distributors.

3.4 Without Distributors, Tiange Actual Revenue only 48% of Reported

We have shown that revenue from the so-called distributors is almost non-existent. If we simply take out their "contributions" in one clean swoop, as shown below in Exhibit 20, Tiange will be left with only 48% of reported revenue.

Exhibit 20 – Actual revenue about 48% of reported amount after excluding distributors

Year end Dec 31 (Rmb m)	2011	2012	2013	2014	2015	2016	Total
Online interactive entertainment service - Tiange's claim	373	440	531	692	591	759	3,386
x (1 - top 5 distributors' contribution)	34%	31%	32%	40%	54%	52%	
Online interactive entertainment service - Our estimate	125	136	168	277	321	394	1,420
+ Others	11	16	17	0	87	75	206
Total	136	152	185	277	408	469	1,627
Our estimate as % of Tiange's claim	36%	35%	35%	40%	69%	62%	48%

Sources: Tiange, Emerson Analytics

Tiange – Virtual Sales, Zombie Users

Part 4 Tiange User Base Way Below Reported Levels

As presented in Part 1, Tiange's penetration rate in 2013 was only one-eighth of that of 6.cn. We have adopted two different approaches to ascertain its user base: by monitoring the total concurrent users of all Tiange communities, and by analyzing its bandwidth costs to extrapolate its peak concurrent user base. We are convinced that Tiange exaggerates its user base by about six times!

We further studied the number of Tiange's monthly active users (MAUs, or someone who logs in at least twice in a particular month) and monthly paying users (MPUs). Using the average revenue per paying user (ARPU) reported by Tiange, we conclude that the company's actual revenue in 2013 was at most 41% of its claim.

4.1 Tiange's Concurrent Users Not Even One-tenth of That of 6.cn in 2016

Generally speaking, Tiange's live social video communities can be accessed via Internet browsers, client software installed on computers, or mobile devices. One can readily see the number of concurrent users from Tiange's client software. Exhibit 21 below shows where the number of concurrent users for various communities is displayed in the client software. Note that the user count shown in client software includes all end-users.

Tiange – Virtual Sales, Zombie Users

Exhibit 21 – Number of Tiange concurrent users



Source: Emerson Analytics

Notes: - 9158 Video Community data exclude users of "10-person rooms (10人房)" which have few visitors and little activity
 - Within the 9158 Video Community, the "Recommended zone (推荐专区)" and "Best locations (最佳现场)" are extracted from various sub-categories, which implies double-counting

At the time of its IPO, Tiange had three major live video streaming communities - 9158 Video Community, Sina Show and Sina Showcase. To find out if the smaller communities had grown, or if the company had created any new communities, we monitored all its communities some time during the first half of 2016.

Tiange – Virtual Sales, Zombie Users

Exhibit 22 – Concurrent users of all communities

Name of Community	Streaming mobile applications	Concurrent Users
Happy88.com (歡樂吧)	Happy Live Broadcasting (歡樂直播)	311,852
Sina Show (新浪秀)	Feng Broadcasting (瘋播)	188,380
Paopao8.cn (心意吧)		179,791
9158 Video Community (9158 視頻社區)	9158 Live Streaming (9158 在線直播)	163,337
Tiao58.com (跳舞吧)		163,337
Sina Showcase (新浪秀場)	Miao Broadcasting (喵播)	53,119
WannaChat (真想聊)	Crystal Live Broadcasting (水晶直播)	48,059
99cu.com (久久明星交友)		48,951
Popsong zone (天歌人氣區)		20,054
Tangguo100.com (糖果社區)		11,578

Source: Emerson Analytics

Notes - Tiao58.com is actually the same as 9158 Video Community. There is simply one community with two names
 - Likewise, WannaChat is really the same community as 99cu.com. The number of concurrent users for 99cu.com differs from that of WannaChat because of a slight difference in the timing of screen capture
 - Popsong zone is a mirror image of one sub-category within the WannaChat/99cu.com community

We were surprised to find that the little-known Happy88.com turned out to rank number one while Paopao8.cn ranked number three in our concurrent users count.

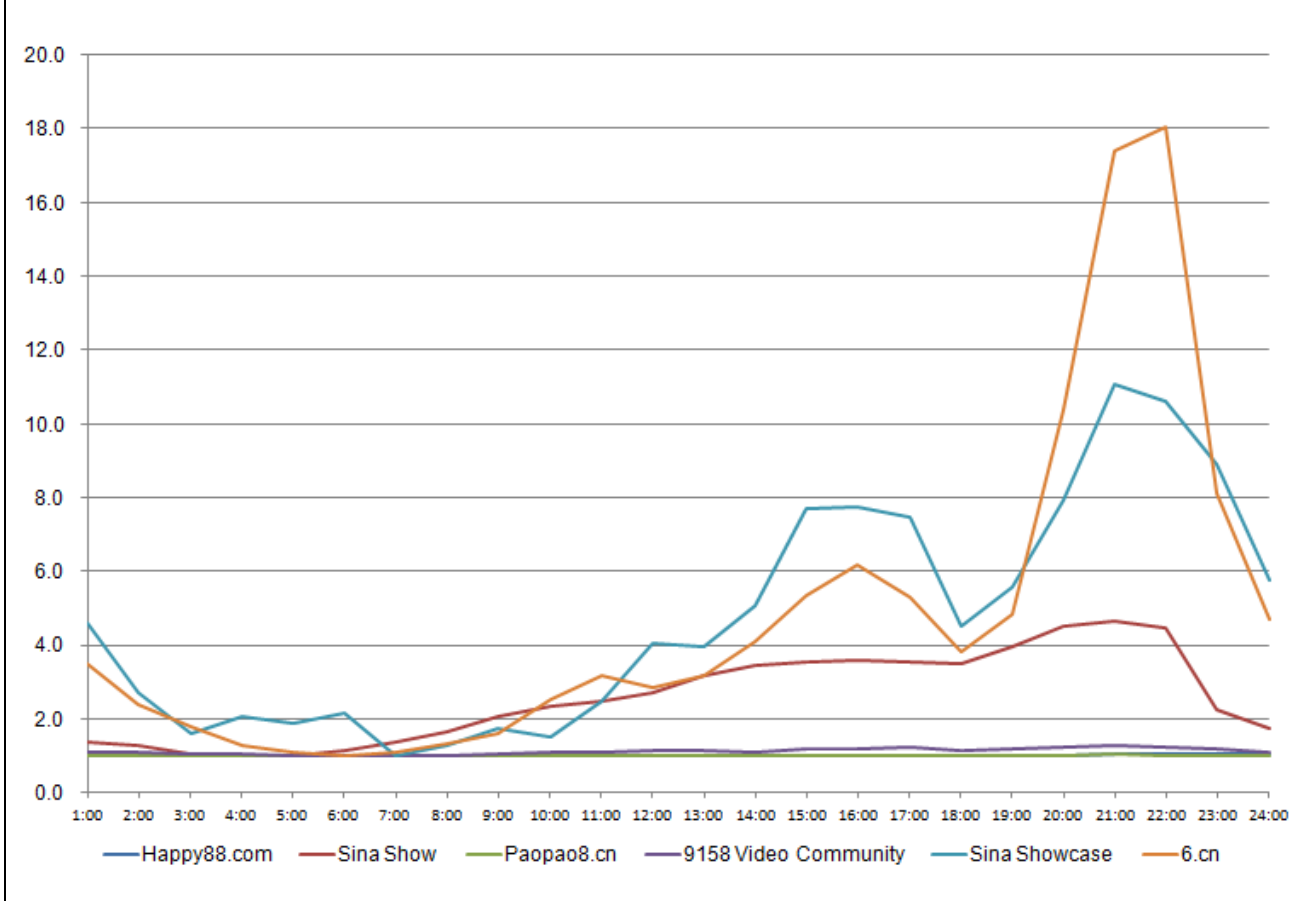
To ascertain the truth behind Tiange's user base, we conducted on two occasions 24-hour monitoring of these two communities as well as the three major ones at the time of the IPO, and did the same to 6.cn at the same time.

We did our monitoring on a weekend (**Day 1**) and a weekday (**Day 2**) in 2016, and the results are presented in [Appendix II: Statistics for Concurrent Users](#). The results are in line with our frequent observations of these communities in more than one year, and we believe are representative of Tiange's actual performance.

Exhibit 23 below charts the number of concurrent users of the six communities throughout the 24 hours in Day 1. Given the significant differences in the number of concurrent users for the different communities, we have converted the numbers into an index by setting the lowest number of users of each community at one and then calculating the number of users at different times as its multiples. (The trend for Day 2 is similar and is therefore omitted here).

Tiange – Virtual Sales, Zombie Users

Exhibit 23 – Concurrent users of six video communities by the hour, Day 1



Source: Emerson Analytics

The pattern of live video streaming viewership is similar to that we have seen in the good old days of fixed-line telephony all the way through the early days of cellular telephony and narrow-band Internet access. From 19:00 Beijing time, users begin to increase rapidly to peak levels in late night. After midnight, the user count declines and usually bottoms around dawn.

We can see from Exhibit 23 that 6.cn, Sina Showcase and Sina Show achieve peak viewership at 18.0x, 11.1x and 4.6x of their respective trough values.

We can also see in Exhibit 23 and Exhibit 24 that Happy88.com, Paopao8.cn and 9158 Video Community are very static, with the former two being stagnant.

Tiange – Virtual Sales, Zombie Users

Exhibit 24 – Communities with stagnant concurrent users, Day 1

	Happy88.com	Paopao8.cn	9158 Video Community
Average	347,775	177,371	175,043
Max	355,904	180,216	198,607
Min	344,492	175,617	156,363
(Max - Min) / Average	3%	3%	24%

Source: Emerson Analytics

Anyone who bothers to observe Happy88.com and Paopao8.cn for just 15 minutes will see that there is really no interaction between the "hosts" and "users". The so-called users are really fictitious or zombie accounts. In fact, Paopao8.cn no longer exists and any attempt to access Paopao8.cn will land in Happy88.com.

In our subsequent analysis, we will exclude these two communities from Tiange's live video streaming concurrent users. Then there are three duplicated communities (Tiao58.com, 99cu.com and Popsong zone) plus two others (WannaChat and Tangguo100.com) that are really quite dead. We will, therefore, only analyze user data for 9158 Video Community, Sina Show and Sina Showcase.

For 9158 Video Community, we assume there is no real user at the trough (that is, the number of zombie accounts equals to the lowest number of users during the 24-hour period), and arrive at the number of real users by deducting this minimum from the hourly numbers. Accordingly, we can calculate the daily average.

As can be seen in Exhibit 25 below, the number of Tiange's concurrent users turned out to be significantly less than that of 6.cn. On Day 1, it achieved merely 8.5% of 6.cn's concurrent users count, and on Day 2 it was 9.3%, resulting in an average of 8.9%.

Exhibit 25 – Tiange concurrent users just a fraction of 6.cn level

	Day 1	Day 2
9158 Video Community	18,680	17,306
Sina Show	124,546	153,205
Sina Showcase	104,738	108,295
Total	247,964	278,806
6.cn	2,904,797	2,998,019
Tiange's truth/6.cn	8.5%	9.3%

Source: Emerson Analytics

Tiange – Virtual Sales, Zombie Users

4.2 Bandwidth Cost Suggests Actual Users Inflated by 6.6x

Bandwidth cost is a key expense item for video streaming websites. In 2016, Tiange reported total bandwidth and server custody costs of Rmb30.6m.

At the time of its IPO, Tiange had about 1,000 servers throughout China. In 2016, Tiange claimed it had 78% more MAUs than in 2013. This implies more servers. Based on our understanding of the unit cost of server custody, we believe Tiange's server custody cost probably amounted to 10% of the total bandwidth and server custody costs. This implies some Rmb27.6m bandwidth cost in 2016.

The cost of bandwidth depends on the volume of peak bandwidth and the unit price of bandwidth. The former in turn depends on the number of peak concurrent users and the video bitrate.

(1) Average peak concurrent users and bandwidth unit cost

According to Tiange's IPO prospectus, the company had average peak concurrent users of approximately 635k⁸ in the fourth quarter of 2013. Subsequently, Tiange reported total MAUs of 19,235k for 2016, up from 10,819k in 2013. We believe it is reasonable to assume that its average peak concurrent users also increased proportionally to 1,129k (= 635 * 19,235 / 10,819) in 2016. **For a live video streaming website with more than a million average peak concurrent users, an annual bandwidth cost of merely Rmb27.6m is unbelievably low.**

Websites pay for access either according to traffic volume or bandwidth volume. For websites with huge traffic flow such as live video streaming websites, it is usually more economical to pay by bandwidth volume. Alibaba Group Holding Limited (Alibaba, BABA.N) and Tencent are two main suppliers of bandwidth to content delivery network (CDN) in mainland China. Publicly available information shows that Alibaba's list prices are lower than those of Tencent⁹. In our subsequent analysis, we will adopt Alibaba's prices which are more advantageous to Tiange.

⁸ IPO prospectus, p.156

⁹ <https://www.qcloud.com/product/cdn#price>

Tiange – Virtual Sales, Zombie Users

Exhibit 26 – Alibaba CDN bandwidth list prices

- 按[峰值带宽]计费
- 按[流量]计费
- 增值服务请求数计费
- 预付费流量包
- **月结 95带宽峰值计费** Monthly payment - 95th percentile charging

立即开通

流量包套餐

按[峰值带宽]计费说明

基本描述：按峰值带宽计费是以当日您国内节点和海外节点CDN服务分别产生的带宽最高值（单位Mbps）为结算标准。

Peak Bandwidth Ranges

Domestic price (Yuan/Mbps/day)

峰值带宽阶梯	国内价格 (元/Mbps/天)	海外价格 (元/Mbps/天)
0~100Mbps (含)	0.80	1.30
100-500Mbps (含)	0.73	1.30
500Mbps-5Gbps (含)	0.67	1.20
5Gbps-20Gbps (含)	0.63	1.10
大于20Gbps	0.60	1.10

Source: <https://www.aliyun.com/price/product#/cdn/detail>

CDN bandwidth is priced on peak bandwidth ranges. The higher the peak bandwidth, the lower the unit price. When peak bandwidth exceeds 20Gbps, Alibaba quotes a unit price of Rmb0.60/Mbps per day. As we will show in Exhibit 28 below, Tiange's peak bandwidth exceeds 20Gbps.

Bandwidth cost is usually calculated on the 95th percentile charging basis. This is done by taking a peak traffic flow reading during five-minute intervals, resulting in 8,640 readings (= 12 * 24 * 30) per month on a 30-day basis. Ignoring the highest 5% readings (that is, the highest 432 readings), the highest remaining reading is the basis of charging. Our calculations below follow the same 95th percentile charging basis.

(2) Tiange's video bitrate was about 775Kbps in 2016

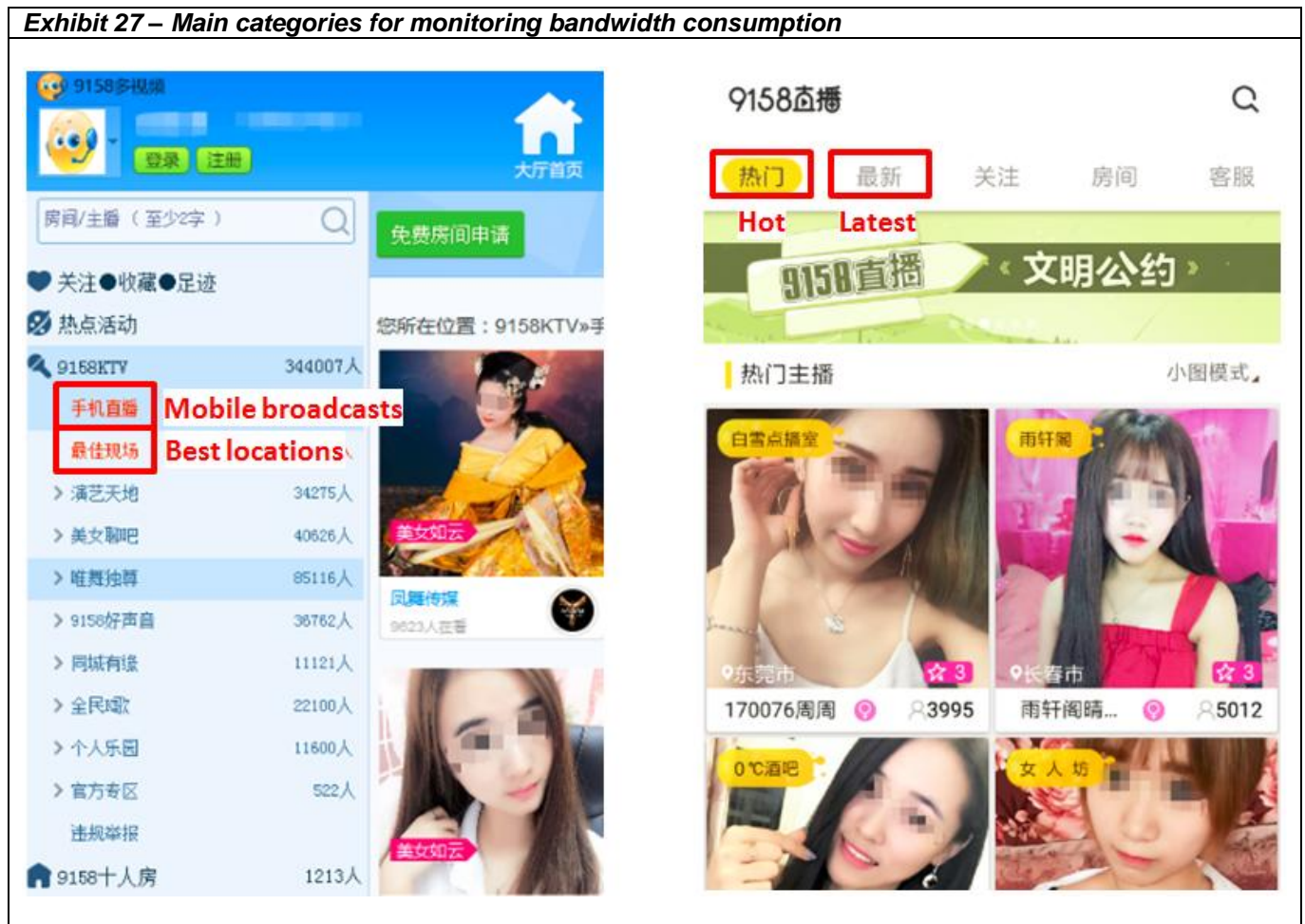
Tiange – Virtual Sales, Zombie Users

Bitrate is the speed of data transmission and is usually expressed as bit/s (bit per second) or bps. Note that our discussion here is on bit rather than byte, the latter being the basic unit of data processing in computing (1 byte = 8 bits). Most live video streaming websites operate on 800Kbps+ bitrates. Lower video bitrate implies lower video streaming quality.

To estimate Tiange's bandwidth costs, we have monitored 9158 Video Community's bandwidth consumption via client software and mobile apps. Bandwidth consumption is of course constantly changing, and we take our readings at periods of stable bandwidth consumption.

For 9158 Video Community, client software users of "Mobile broadcasts (手機直播)" and "Best locations (最佳現場)" have tended to account for 40% of all users in the community. Bandwidth consumption in various rooms in these two categories provides a reasonable indication of bandwidth consumption for all personal computer users. As far as its mobile app is concerned, 9158 Video Community has just two core categories, "Hot (熱門)" and "Latest (最新)". We have also monitored the bandwidth consumption of all hosts in these two categories. Details of our monitoring can be found in [Appendix III: Statistics for Bandwidth](#).

Exhibit 27 – Main categories for monitoring bandwidth consumption



Source: Emerson Analytics

Tiange – Virtual Sales, Zombie Users

9158 Video Community's client software allows one to see both PC broadcasting hosts and mobile broadcasting hosts. PC broadcasting hosts are shown in fixed windows while mobile broadcasting hosts are shown in floating windows that can be closed by users. We have taken bandwidth readings at both the initial stage and after closing all mobile broadcasting hosts. The average bandwidth of PC client software at the initial stage is 2,732Kbps but drops to 569Kbps when all mobile broadcasting hosts are closed and only PC broadcasting hosts are left. For the mobile app, the average bandwidth is 1,016Kbps.

On the basis that Tiange generated some 46% of its live video streaming revenue in 2016 from mobile devices, and assuming the lowest 569Kbps bandwidth for the PC segment (thus most advantageous to Tiange), we can calculate the company's overall average bandwidth as follows:

$$1,016 * 46\% + 569 * 54\% = 775\text{Kbps}$$

(3) *Reported bandwidth cost only 15% of our estimates*

Synthesizing all the above discussions, we can estimate Tiange's bandwidth costs as follows:

Exhibit 28 – Reported bandwidth cost just a fraction of our estimates		
Year end Dec 31 (Rmb k)	Bandwidth per user 775 Kbps	Bandwidth per user 569 Kbps
Peak concurrent users (k)	1,129	1,129
x Bandwidth per user (Kbps)	775	569
= Total bandwidth (Mbps)	844,463	642,379
x 95%	x 95%	x 95%
x Bandwidth unit price (Rmb/Mbps/day)	0.6	0.6
x 365	x 365	x 365
/ 1000	/ 1000	/ 1000
= Bandwidth fees - our estimate	182,032	133,647
Bandwidth cost - Tiange's claim	27,558	27,558
Our estimate/Tiange's claim (x)	6.6	4.8

Source: Emerson Analytics

Assuming an average bandwidth of 775Kbps per user, we estimate that Tiange should have spent some Rmb182m on bandwidth last year. The company's reported cost was only about 15% of our estimate! Even on the impossibly low bandwidth of 569Kbps per user, Tiange's reported cost was just about one-fifth of reality.

Tiange – Virtual Sales, Zombie Users

We also note that Tiange's bandwidth cost implies significantly fewer peak concurrent users than we have counted during our monitoring sessions described in section 4.1 above. In other words, there are more zombies than we have been able to detect.

4.3 Three methods lead to one conclusion – MAUs inflated by about 6x

We can now summarize the three methods that we have used to analyze the number of real users that Tiange has:

- By comparing penetration rates estimated by iResearch (see 1 in Exhibit 29 below);
- By monitoring the number of concurrent users in Tiange's live video streaming communities and in the 6.cn community (2 in Exhibit 29); and
- By analyzing Tiange's bandwidth costs (3 in Exhibit 29).

Exhibit 29 – MAUs summary (in thousands)					
	6.cn	Tiange's claim	Tiange's truth	Tiange's truth/6.cn	Tiange's claim/its truth (x)
iResearch data – 2013	14,210	10,819	1,839	12.9% ¹	5.9
Concurrent users – 2016	40,000	19,235	3,560	8.9% ²	5.4
Bandwidth costs – 2016	40,000	19,235	2,912	7.3%	6.6 ³
Average				9.7%	6.0

Source: Emerson Analytics

These three analytical and comparison methods refer to concepts that differ from MAU. Penetration rate refers to unique visitors, whereas MAU is someone who logs in at least twice in a particular month. Concurrent users are those who log in at the same time, regardless of their log in frequency in a month. However, they do have a close but not clearly defined relationship. For example, where there are more concurrent users, there are more MAUs.

According to iResearch, Tiange's penetration rate was about 12.9% of that of 6.cn. Given 6.cn's disclosure (in the IFA Report) of having about 14,210k MAUs in 2013, this implies that Tiange's real MAUs totaled only 1,839k (= 14,210 * 12.9%) rather than the 10,819k claimed in its IPO prospectus. Tiange inflated its MAU base by about 6x!

As can be seen from Exhibit 29, the three methods all point to the same conclusion: Tiange has massively exaggerated its MAUs.

Tiange – Virtual Sales, Zombie Users

4.4 Tiange's Actual 2013 Revenue Less than Half of Reported

Tiange has claimed a TUS 4.3x that of 6.cn for 2013. Relevant technical and financial indicators are detailed in Exhibit 30 below:

Exhibit 30 – KPIs reported by Tiange and 6.cn, 2013			
	6.cn	Tiange	Tiange/6.cn
MAUs (k)	14,210	10,819	76%
x Conversion rate	0.2%	2.5%	10.4
= MPUs (k)	34	270	7.9
ARPU (Rmb)	685	163	
/ Revenue as % of TUS	100%	44%	
= Adjusted ARPU (Rmb)	685	370	0.5
MPUs (k)	34	270	
x Adjusted ARPU (Rmb)	685	370	
x 12 / 1000	x12/1000	x12/1000	
= TUS (Rmb m)	281	1,198	4.3

Source: Emerson Analytics

In 2013, Tiange had 24% fewer MAUs than 6.cn, but the number of its MPUs was 7.9x that of 6.cn. This surprising difference can be attributed to their divergent conversion rate. Tiange's data mean that as many as 2.5% of its MAUs were willing to spend money, whereas merely 0.2% of 6.cn's users were willing to do so. This is a whopping 10.4x difference in terms of conversion rate.

Users of Tiange's live social video streaming communities mainly live in Tier 2 through Tier 4 cities. According to the company, 59% of its users logged in from Tier 3 and Tier 4 cities during the period from March 26 to April 1, 2014, 30% of them from Tier 2 cities and only 11% of them from Tier 1 cities¹⁰. It is not clear why users in small cities were more willing to spend money on their favorite hosts.

Tiange also reported ARPU of Rmb163 for 2013. Since the company could get its hands on only 44% of TUS, the adjusted ARPU was therefore Rmb370 (= 163 / 44%). This comes to about half of the ARPU reported by 6.cn, and seems to resonate with the company's customer profile which is predominantly Tier 2 - Tier 4 city users.

¹⁰ IPO prospectus, p.166

Tiange – Virtual Sales, Zombie Users

So far, our evidence from different methods and analysis clearly shows that Tiange has all along been overstating the number of its users, right from the IPO preparation stage. Based on our estimates of Tiange's actual MAUs, we can calculate its real revenue accordingly, as shown in Exhibit 31 below. Our other assumptions are always in favor of the company. For example, even though we cannot understand why Tiange's MAU to MPU conversion rate was 10.4x that of 6.cn, we still assume that 2.5% of its MAUs became MPUs.

Exhibit 31 – Actual MAUs suggest Tiange's revenue was only 41% of its claim in 2013

Year end Dec 31 (Rmb m)	2013
Actual MAUs (k)	1,839
x Conversion rate	2.5%
= MPUs (k)	46
x Adjusted ARPU (Rmb)	370
x 12 / 1000	x12/1000
= Revenue from live video platform	204
+ Games and others	20
= Revenue - our estimate	223
Revenue - Tiange's claim	548
Our estimate as % of Tiange's claim	41%

Source: Emerson Analytics

Recall that we have shown earlier in Part 3.4 that, ignoring all contribution by the so-called "distributors", Tiange's real revenue in 2013 was about 35% of reported.

Tiange – Virtual Sales, Zombie Users

Part 5 Valuation

Having done a careful and detailed analysis of Tiange's lies and fabrications as presented earlier, we doubt if there is a real need to analyze the company's financial statements. Can one possibly identify the truth out of a heap of lies?

During our research and investigation into Tiange, we came across a certain Shanghai Video Speedy Information Technology Co., Ltd. (Shanghai Video Speedy, 上海視速信息技術有限公司), in which Tiange has held a 25% stake since 2009. However, there has never been any reference to Shanghai Video Speedy in any of Tiange's documents and financial statements.

There is no doubt that the business model and financial statements of Tiange are seriously fraudulent, to the extent that there is simply no need for a valuation analysis. For a long-running case of criminal deception, the only appropriate regulatory action is Delisting.

Tiange – Virtual Sales, Zombie Users

Appendix I: TUS, Revenue and Top Five Distributors' Contribution

In Part 1.1 earlier, we have discussed the relationship between Tiange's TUS and its reported revenue on the basis of selling direct to end-users and through distributors. We will illustrate this relationship with the sale of Rmb100 worth of virtual currency.

As seen in Exhibit 32, the sale of Rmb100 worth of virtual currency in 2013 allowed Tiange to recognize Rmb44 of revenue. Two-thirds of this, or Rmb30, came from distributors. According to Tiange, revenue from the top five distributors was almost the same as revenue from all third-party distributors. This was because:

- There were only five, six and four distributors in 2011, 2012 and 2013; and
- Tiange's revenue mainly came from three major communities: 9158 Video Community, Sina Show and Sina Showcase.

Year end Dec 31 (Rmb)	2011	2012	2013	2014	2015	2016
TUS	100	100	100	100	100	100
User direct	15	16	14	19	29	27
Third-party distributors	85	84	86	81	71	73
Revenue	45	45	44	47	54	53
User direct	15	16	14	19	29	27
Third-party distributors	30	29	30	28	25	25
Revenue proportion	100%	100%	100%	100%	100%	100%
User direct	34%	35%	32%	40%	54%	52%
Third-party distributors	66%	65%	68%	60%	46%	48%
Top 5 distributors' contribution	67%	69%	68%	60%	46%	48%

Source: Emerson Analytics

Thus, for subsequent years, we believe it is reasonable to assume that contribution from all distributors is the same as that from the top five distributors. We can then work out the TUS sold through distributors (X) using the following formula:

$$X * 35\% / (X * 35\% + (100 - X)) = \text{distributors' share}$$

Thus, for 2016, the top five distributors accounted for 48% of revenue and sold 73% of TUS.