

## Consumer Attitudes Towards IPTV Applications in China

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### Executive Summary

Internet Protocol TV (IPTV) is quickly becoming a need-to-have service for China's fixed-line operators. The service not only provides telecom operators with a new opportunity for generating revenue and reducing churn rates but it also gives them an entry point into the future digital home market. However, all of these expectations require telecom operators to understand the end-users' acceptance levels and attitudes toward IPTV and its applications.

In order to understand potential Chinese consumer attitudes toward IPTV and its applications, In-Stat surveyed 339 non-IPTV adopters via telephone in December 2006. The respondents were from four Chinese cities: Beijing, Shanghai, Harbin, and Shenzhen.

The results from In-Stat's survey demonstrate that the advantages of IPTV, and its applications, are not being realized by most of the survey respondents. The acceptance rate of IPTV is rather low. Even in the cities where IPTV has already been deployed, the acceptance rate of our survey's potential customers is less than 50% (41% in Harbin and 49% in Shanghai). In-Stat believes consumers will need to experience these services in person in order to understand their advantages.

The survey also asked about 11 IPTV applications. Ranked by the level of interest they gained from respondents, they include: time-shifting, HDTV, video on demand (VOD), video phone, interactive TV information, TV-on-the-go, parent remote control, online gaming through TV, online shopping through TV, video surveillance, and video uploading.

Except for video phone, TV-based applications gained higher interest than other interactive applications. The time-shifting application gained interest from 51.9% of the overall respondents, followed by HDTV programming with 50.1% of respondents showing interest. Interactive TV information is also of relatively high interest, at 31.6%. Respondents from all age groups expressed their interest in interactive TV information and showed similar interest levels in time-shifting as well. As for non-TV based interactive applications, only the video phone application received relatively high interest levels from overall respondents, with 35.1%.

In terms of consumers' expectations for payment patterns for IPTV applications, potential consumers tend to opt for paying monthly for a package that consists of a majority of applications, followed by a pay per usage payment pattern. The latter was selected by respondents to pay for TV-on-the-go, video

#### HIGHLIGHTS

- The advantages of IPTV and its applications are currently not being realized by most of the survey respondents.
- Except for video phone, TV-based applications gained higher interest than other interactive applications. Time-shifting, HDTV, and VOD are the most interesting services.
- For most IPTV applications surveyed, potential consumers opt for paying monthly for an applications package.

upload, video phone, and online shopping through TV. Regardless of the payment option, about half of the interested respondents would only pay US\$1.25 per month for each individual application.

Based on In-Stat's analysis, even though the current competition from digital cable TV is driving IPTV providers to differentiate their services by delivering more value-added services to consumers, In-Stat deems that IPTV providers ought to deploy applications based on TV programming with an acceptable subscription fee. At the moment, there is no rush to generate new interactive applications that end-users are not familiar with.

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## Introduction

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IPTV is becoming a have-to-do task for telecom operators, especially for fixed-line operators. It not only provides telecom operators with an opportunity of retain customers, thereby preventing both the increase of churn rates and ever-dropping broadband ARPUs, but it also gives them an entry point into consumer's future digital home, which is now also being eyed by China's digital cable TV operators. In order to realize these objectives, telecom operators need to understand whether end-users accept the concept of IPTV and whether they are interested in the IPTV applications.

Under this scenario, In-Stat's primary research aimed to study Chinese consumers' attitudes towards IPTV applications, and provide answers to the following questions:

- What are Chinese consumers' fundamental IPTV watching behaviors?
- Which applications are the most interesting IPTV applications to Chinese consumers?
- How would interested consumers pay for their interested applications?
- How much do interested Chinese consumers prefer to pay for an application?

The analysis of In-Stat's survey results will point out which segments of Chinese consumers may be potential IPTV consumer target segments.

The IPTV applications surveyed are categorized into two types:

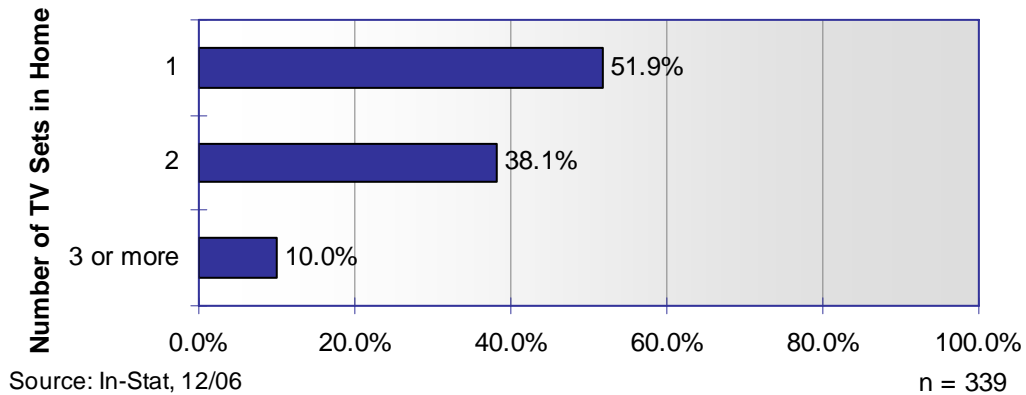
- Existing applications, e.g. time shifting and VOD
- Potential applications that may be deployed in the near future, such as HDTV channels, video phone, interactive TV information, TV-on-the-go, parental remote control, online gaming through TV, online shopping through TV, video surveillance, and video uploading.

The In-Stat survey used telephone mass survey to collect primary data on potential IPTV users' attitudes towards IPTV applications, including their IPTV acceptance, their interest levels for 11 IPTV applications, and the accepted payment modes for such applications. For more details about the survey and respondents, please refer to the Methodology section of this report.

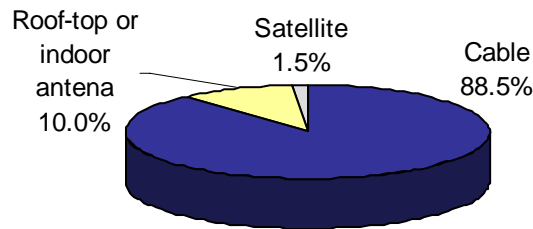
## Survey Demographics

The following charts provide demographic information about the survey respondents. This demographic information is the necessary backdrop for pointing out differences in the acceptance to IPTV and interest in IPTV applications among various survey groups.

**Figure 1. Numbers of TV Sets in Home**

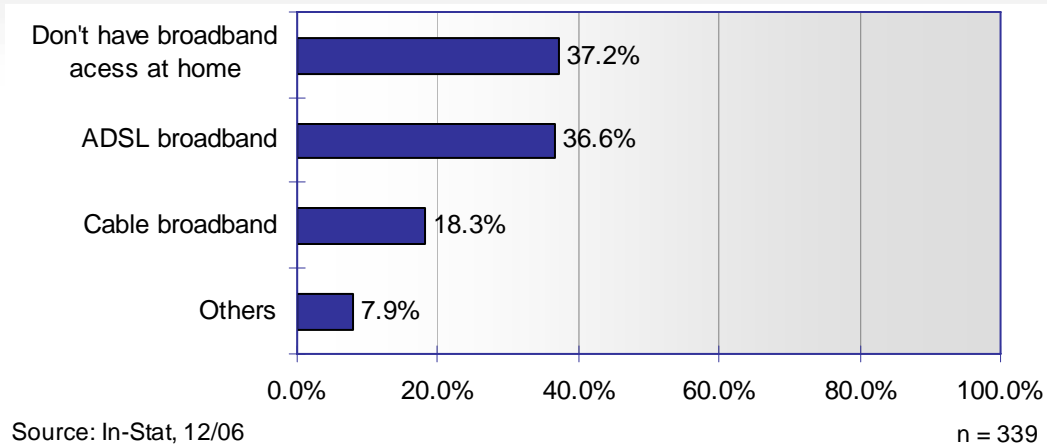


**Figure 2. Primary Means of Receiving TV**



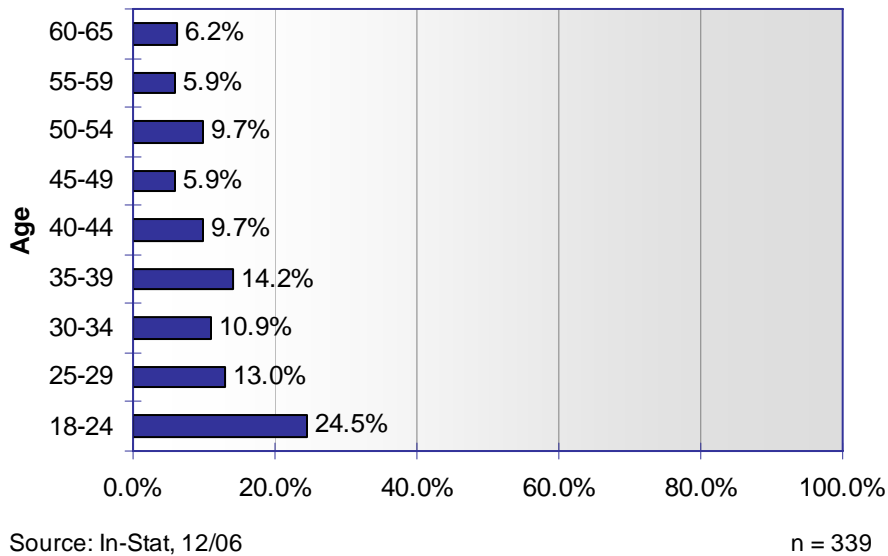
In the survey, 300 respondents receive TV programs from their cable providers, 34 respondents use a roof-top or indoor antenna, and only 5 respondents use satellite TV. These results demonstrate the reality of China's current TV providing status: cable is still the primary means of receiving TV signals in city areas.

**Figure 3. Do You Have Broadband Access at Home?**

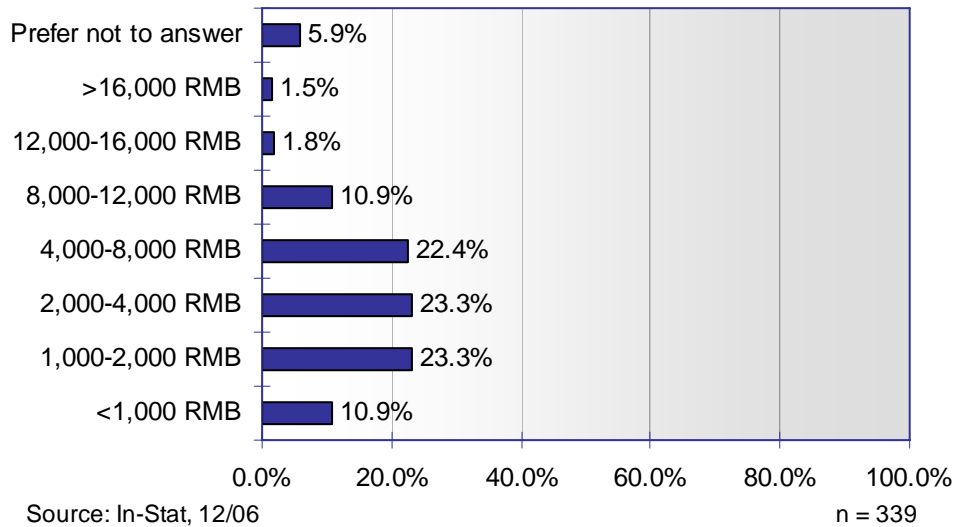


Besides both ADSL and cable broadband, respondents stated other means of broadband access, such as community Ethernet provided by some ISPs. As only about ten people use this method, they were calculated in the "Others" category.

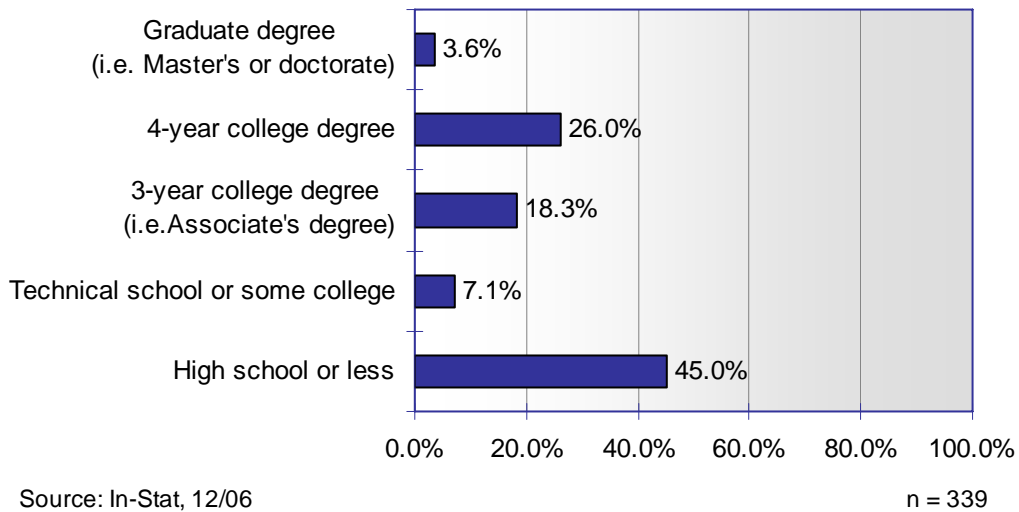
**Figure 4. Age of Respondents**



**Figure 5. Monthly Household Pre-Tax Income (RMB)**

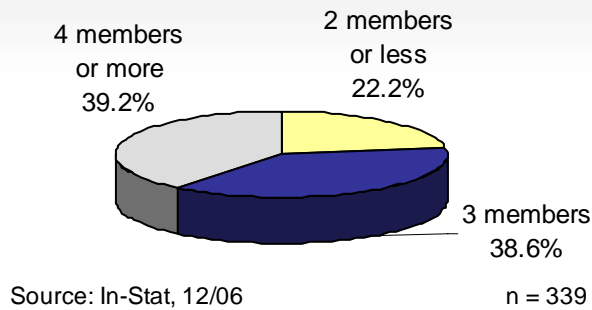


**Figure 6. Education Level**

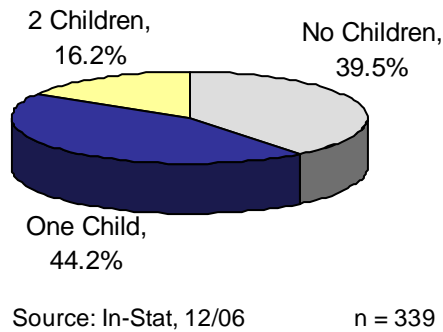


In order to understand whether the number of family members or the number of children (children refers to any child under the age of 18) may influence a respondents' decision as to whether they would adopt IPTV, the survey also asked the following two questions (see Figures 7 and 8).

**Figure 7. How Many Family Members are Living in the Same Household?**



**Figure 8. How Many Children are Living in the Home?**



Moreover, respondents were also asked about which family members spend the most time watching TV. The results showed that:

- No matter how many members a family has, if the respondent is single, their parents watch TV the most, and if the respondent is married, the respondents themselves watch the most TV.
- In child-less families, the respondent's parents spend more time watching TV, with the percentage being about 47%; as long as the respondents have a child, they will spend more time in front of TV than other members, and the percentage is more than 60%.

To help understand this result clearer, a cultural difference should be addressed: in China, most children usually live with their parents if they are still single. Single includes two statuses: "not married" and "no fixed partner."

As TV may be the most appropriate entertainment for parents who are spending more time at home with their children, it would make sense that their TV viewing would be high. In contrast, respondents who are single will usually spend more time outside the home and seek other entertainment methods.

## Survey Results

In-Stat’s survey results are organized into two parts:

- The respondents’ attitudes towards IPTV
- The respondents’ attitudes toward 11 applications.

The first part of this section focuses on two aspects:

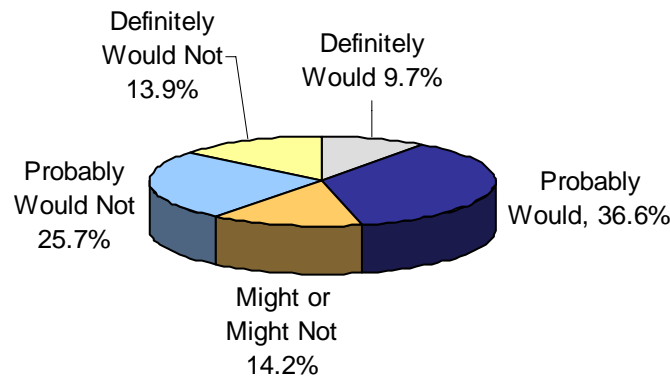
- Whether potential Chinese users would be likely to accept receiving TV programming from telecom carriers
- What potential consumer segment is most likely to choose IPTV.

Among the 11 IPTV applications studied in the second part of the survey results, there are 2 existing applications that have already been deployed by telecom carriers in China, and 9 advanced triple-play applications that are likely to be provided in the coming future. The survey data analysis goes through the 11 applications and illustrates the respondent’s interest, which payment method interested respondents would prefer, and how much they are likely to pay for that application. In addition, the most influential factors on consumers’ attitudes to each application are also indicated.

### Potential Users’ Acceptance Towards IPTV

After introducing to respondents what IPTV could provide them as end-users, e.g. mentioning the currently available time-shifting services, the survey asked the respondents about their likelihood of using TV services provided by a telecom company. While 9.7% of respondents said they would definitely use the service, another 36.6% of respondents showed a high inclination towards choosing IPTV. A remaining 14.2% of respondents could not decide either way; In-Stat noticed a correlation between this indecision and the respondents’ consideration on IPTV pricing.

**Figure 9. If Your Telephone Company Offered TV Services, How Likely Would You be to Use Them as Your Current TV Provider?**



Source: In-Stat, 12/06

n = 339

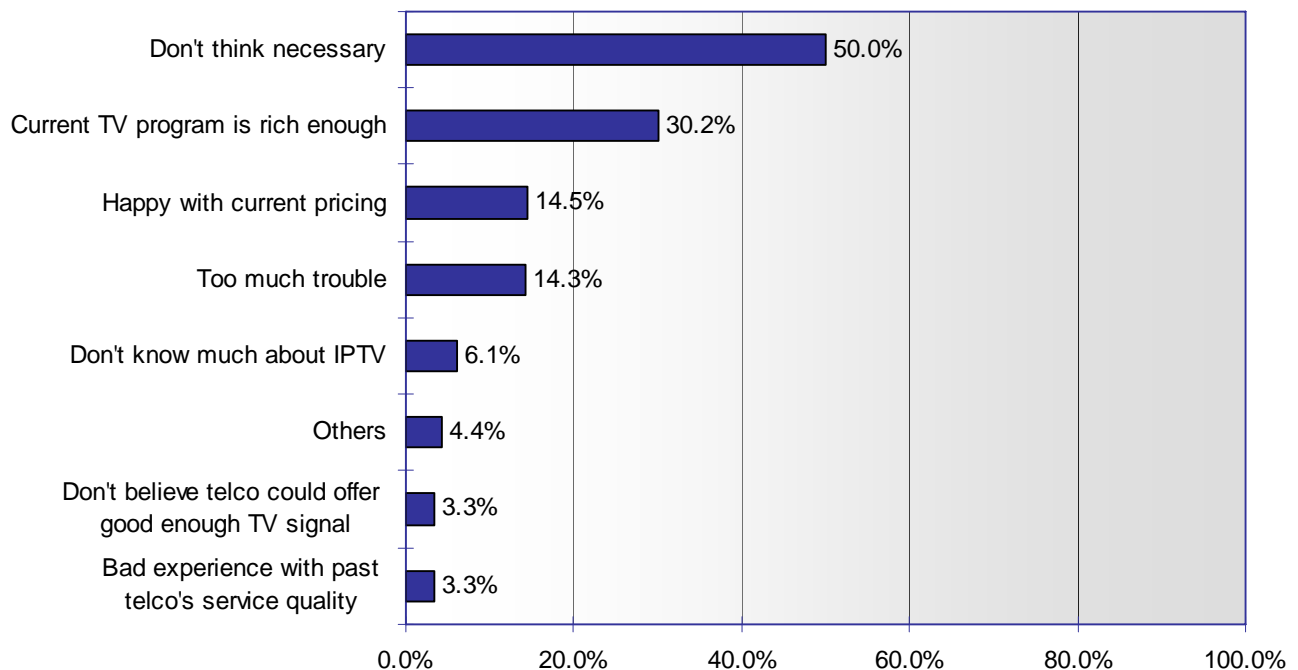
When the 300 respondents who subscribe to cable TV were asked about their attitudes towards receiving TV services from their telecom provider, the distribution remained similar to the overall respondent group: 47.7%, or 157 respondents, said they would choose IPTV (respectively, 9.7% choose “definitely” and 38.0% choose “probably”). Among these 157 respondents, 36.9% would use cable TV and IPTV simultaneously, while 63.1% would switch from their cable providers to the telecom provider for IPTV.

When respondents who chose not to use IPTV were asked for their reasons (see Figure 10), the answers mainly focused on:

- 50% do not think it is necessary
- 30% believe that current TV programs are rich enough
- Another 14.5% are happy with current pricing.

Only six respondents do not believe that telcos could offer qualified TV signals—this is not bad news for telcos.

Figure 10. Why Wouldn't You Use IPTV?



Note: "n" includes respondents who are "definitely not," "probably not," and "might or might not" be interested in IPTV.

Source: In-Stat, 12/06

n = 182

Respondents also offered other reasons for why they would not use IPTV, such as:

- Would rather watch TV programs or movies on the Internet or download from the Internet
- Time allotted for watching TV is very limited. From an efficiency issue, respondents do not watch TV at all, let alone IPTV.

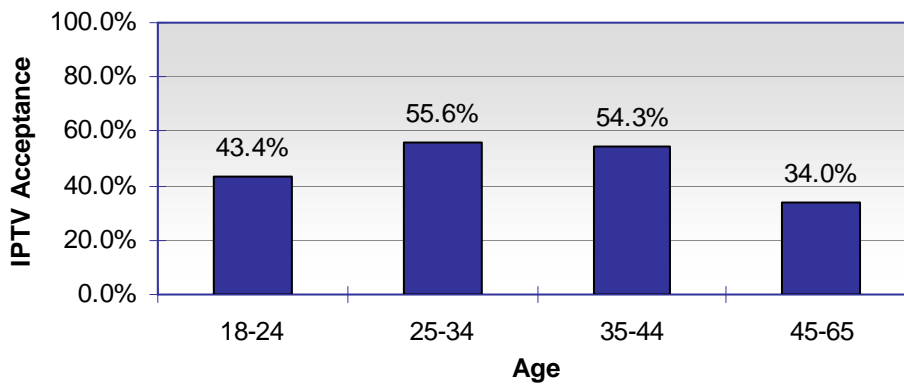
- IPTV service price may be expensive. When considering their family’s income condition, respondents would not use IPTV. Please note that the subscription fee for analog cable TV is only US\$2.25 in China. As end-users are well accustomed to this price, paying a higher price will be difficult for consumers to accept.

These answers in fact bring up another issue: the influential factors on consumer’s attitude when selecting TV services from telecom operators. In-Stat checked various demographic features from the survey group, including: age profile, education level, family income, number of family members living in the household, and broadband access. Through the results, In-Stat found that three elements present specific impacts on IPTV acceptance: age, family income, and education level.

**Age**

When respondents in different age groups were asked about their attitudes towards accepting IPTV, 55.6% in the 25–34 age group showed high acceptance levels, followed by 54.3% of 35–44 age group.

**Figure 11. IPTV Acceptance Levels, by Age Group**



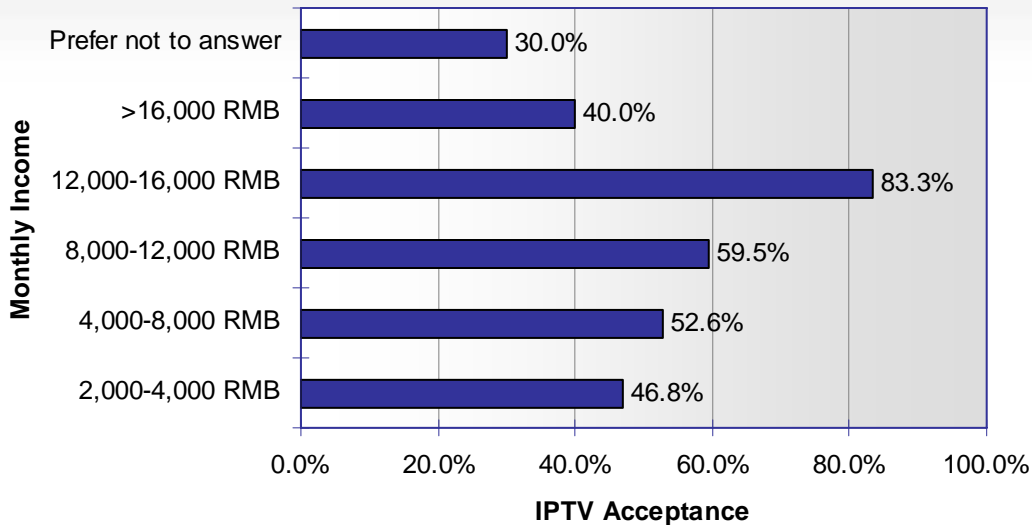
Source: In-Stat, 12/06

n = 339

**Family Income**

Families with a 12,000–16,000 RMB monthly income are most likely to adopt IPTV (see Figure 12). In-Stat considers that the higher acceptance levels by respondents with higher monthly incomes, up to 16,000 RMB, is because consumers believe IPTV is more expensive than a cable TV subscription fee, which is currently around US\$2.25 per month. However, In-Stat also noticed that families with more than a 16,000 RMB monthly income are rather conservative in spending on IPTV when compared to other groups: only 40% of the respondents in this income group would definitely or probably use IPTV. Through cross-checking with other related factors, we found the supporting reason for this acceptance level to be that most of the respondents from this family group, for time-efficiency reasons, do not watch TV.

**Figure 12. IPTV Acceptance Levels, by Family Monthly Income**



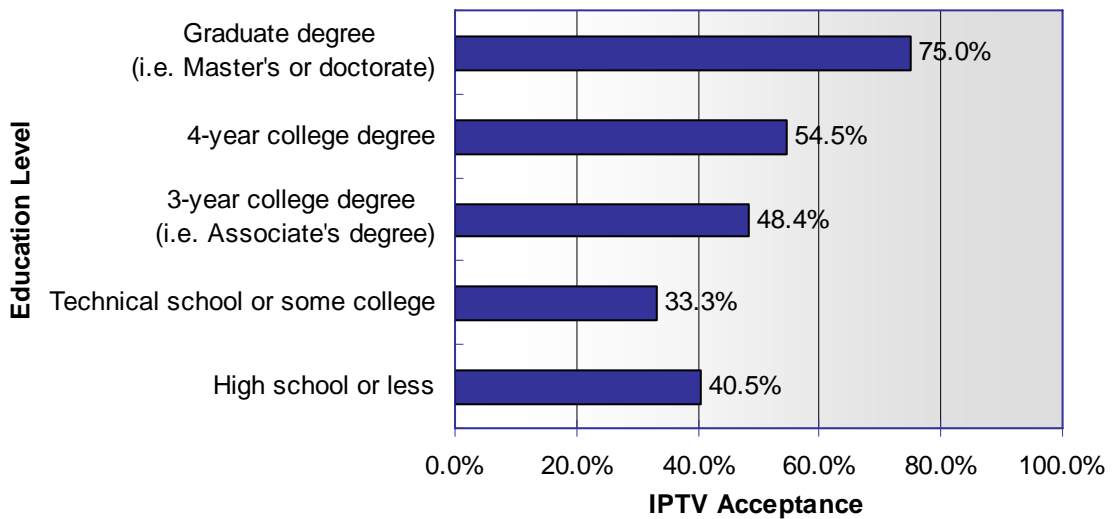
Source: In-Stat, 12/06

n = 339

**Education Level**

The survey results showed that respondents with higher education levels are more probable to adopt IPTV. In-Stat considers the underlying reason to be that this group of respondents is knowledgeable enough to accept new technological concepts like IPTV.

**Figure 13. IPTV Acceptance Levels, by Education Levels**



Source: In-Stat, 12/06

n = 339

**Potential Users' Interest in IPTV Applications**

**Existing Applications**

IPTV services have been trialed in a few cities in China, and even commercialized in Shanghai and Harbin, two of the cities included in our survey group. Both video on demand (VOD) and time-shifting

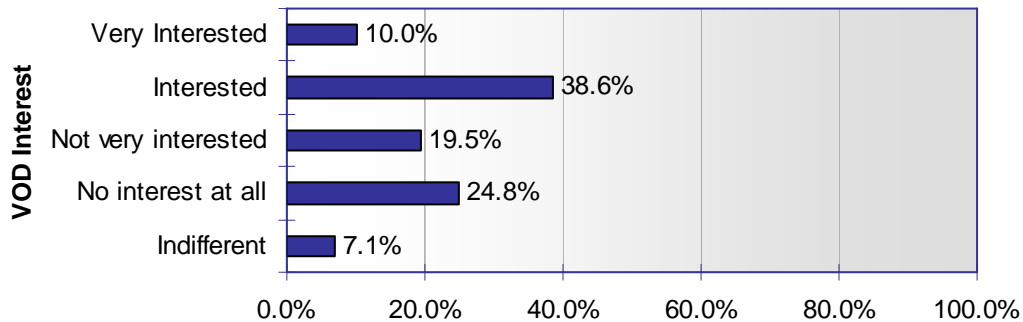
TV, being the most fundamental applications, have already been deployed in all the cities with IPTV trials. Moreover, the city of Shenzhen has provided digital cable TV services, and the two aforementioned applications are also available in Shenzhen. As a result, the survey respondents living in these three cities would have better awareness on VOD and time-shifting concepts due to the large scale marketing activities taking place in these cities. We believe this enhances the veracity of our survey results in regards to these two existing applications.

**Video on Demand**

Video on demand (VOD) allows users to pick from an on-screen list of movies and watch them at their own convenience. When using VOD, users do not need to buy DVDs if the movie is available on their provider’s IPTV list.

Interest in using the VOD application through IPTV was prominent among 48.6% of overall respondents (see Figure 14). Education levels play a role in impacting interest levels. Respondent’s interest increased with their education level, from 45.7% of respondents with high school education up to 77.8% of respondents with graduate degrees. As for the interest levels by age, it is the 25–34 years old respondents who are most interested in VOD, with 55.6% showing interest.

**Figure 14. Interest in VOD**



Source: In-Stat, 12/06

n = 339

When the respondents interested in VOD were asked about their preferred payment patterns, 32.7% of the 165 respondents choose a monthly package payment plan and 30.9% would like to pay per view. As for how much these respondents would like to pay for the service, 77.5% of them are willing to spend no more than 20 RMB per month (see Tables 1 and 2).

**Table 1. Preferred Payment Pattern for VOD Application**

	Frequency	Percent
Pay Monthly by One Package	54	32.7%
Pay Monthly by Selectable Packages	23	13.9%
Pay Per View	51	30.9%
Pay by Self-defined Package	33	20.0%
Others	4	2.4%
<b>Total</b>	<b>165</b>	<b>100%</b>

Source: In-Stat, 12/06

n = 165

Note: "n" includes respondents who are "interested" and "very interested" in the VOD application.

**Table 2. How Much Would You be Willing to Pay for VOD per Month? (RMB)**

	Frequency	Percent
<10 RMB	55	33.3%
10–20 RMB	73	44.2%
20–30 RMB	24	14.5%
>30 RMB	13	7.9%
<b>Total</b>	<b>165</b>	<b>100</b>

Source: In-Stat, 12/06

n = 165

Note: "n" includes respondents who are "interested" and "very interested" in the VOD application.

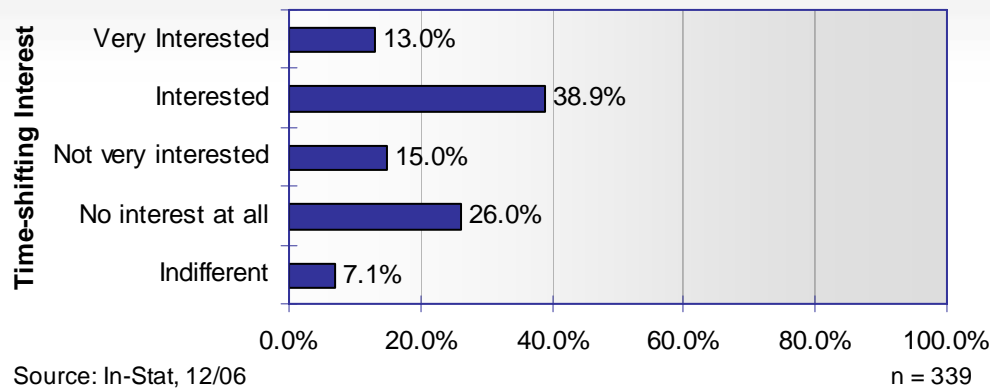
## Time-shifting Application

Time shifting TV allows the subscriber to watch TV shows at any time they choose, rather than only at the time of the broadcast. About 52% of overall respondents are interested in time-shifting TV. The interest level was highest among 18–24 year olds, at 62.7%, and dropped from there among the higher age groups.

Unsurprisingly, the interest levels dropped in correlation with a respondent's increase of TV watching hours, from 52% interest among respondents who watch 1–2 hours of TV daily down to 40.9% for those who watch more than 6 hours everyday.

Moreover, the interest levels for this application also increased with the number of family members. In-Stat sees that families who have more than one TV and more family members would need the time-shifting function to record programs and watch them during non-rush hours at home.

**Figure 15. Interest in Time-shifting Application**



**Table 3. Preferred Payment Pattern for Time-shifting Application**

	Frequency	Percent
Pay Monthly by One Package	56	31.8%
Pay Monthly by Selectable Packages	32	18.2%
Pay Per View	51	29.0%
Pay by Self-defined Package	36	20.5%
Others	1	0.6%
<b>Total</b>	<b>176</b>	<b>100.0%</b>

Source: In-Stat, 12/06

n = 176

Note: "n" includes respondents who are "interested" and "very interested" in the Time-shifting application.

**Table 4. How Much Would You be Willing to Pay for Time-shifting per Month? (RMB)**

	Frequency	Percent
<10 RMB	71	40.3%
10-20 RMB	64	36.4%
20-30 RMB	24	13.6%
>30 RMB	17	9.7%
<b>Total</b>	<b>176</b>	<b>100.0%</b>

Source: In-Stat, 12/06

n = 176

Note: "n" includes respondents who are "interested" and "very interested" in the Time-shifting application.

## Future Applications

### High-definition TV

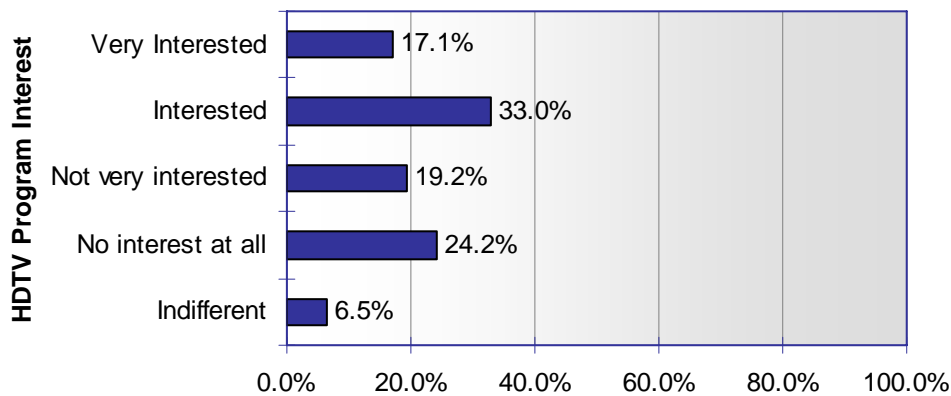
High-definition TV (HDTV) provides pictures with several times the clarity of DVDs and over five times the resolution of a regular television picture. As there are only one or two HD premium channels currently available in China, most people do not have HDTV program watching experiences. They are aware of HDTV, however, from TV set vendors' promotion activities and have experienced HD video

quality through other choices, for example, HD movies available on the Internet or in DVD format. As a result, their interest on HDTV is quite high.

The HDTV feature appealed to 50.1% of the survey's overall respondents. This is the second highest interest level among all applications, coming slightly underneath the 52% interest level for the time-shifting TV application. Though respondents from all family income levels presented a high interest in HDTV programs, 80% of those with monthly incomes of 12,000–16,000 RMB have the greatest interest. This is in correlation with the popularity of HDTV sets amongst this group of respondents. HDTV sets are very popular in China, especially in first tier cities, and HDTV set owners mainly have 12,000 RMB monthly incomes and over.

In terms of interest among the various age groups, 65.4% of the 35–44 year old respondents are interested in watching HDTV programs via IPTV, in contrast with only 38.6% of those in the 18–24 age group.

**Figure 16. Interest in HDTV Programs**



Source: In-Stat, 12/06

n = 339

**Table 5. Preferred Payment Pattern for HDTV Programs**

	Frequency	Percent
<b>Pay Monthly by One Package</b>	68	40.0%
<b>Pay Monthly by Selectable Packages</b>	28	16.5%
<b>Pay Per View</b>	37	21.8%
<b>Pay by Self-defined Package</b>	33	19.4%
<b>Others</b>	4	2.4%
<b>Total</b>	170	100.0%

Source: In-Stat, 12/06

n = 170

Note: "n" includes respondents who are "interested" and "very interested" in the HDTV program application.

**Table 6. How Much Would You be Willing to Pay for HDTV Programs per Month? (RMB)**

	Frequency	Percent
<10 RMB	75	44.1%
10–20 RMB	51	30.0%
20–30 RMB	31	18.2%
>30 RMB	13	7.6%
<b>Total</b>	<b>170</b>	<b>100.0%</b>

Source: In-Stat, 12/06

n = 170

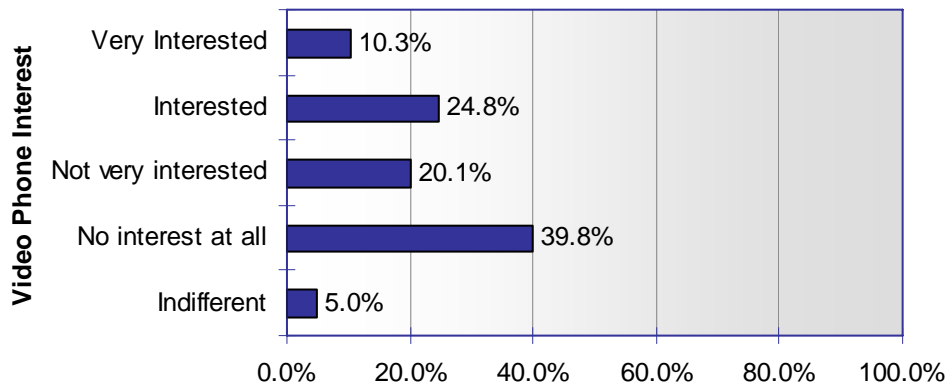
Note: "n" includes respondents who are "interested" and "very interested" in the HDTV program application.

**Video Phone Application**

Having the video phone application enables a consumer to place a video call through their TV by entering a phone number. The call is then set up between the selected contact and the user, using a camera and microphone associated with a set top box (STB). During the call, the video program can be paused.

Out of the overall respondents, 35% were interested in the application, which is the highest interest level among all non-TV related applications. When analyzing the impact of family income on interest levels, In-Stat found that respondents from all income levels showed a similar interest level in video phone, about 33% on average.

**Figure 17. Interest in Video Phone Application**

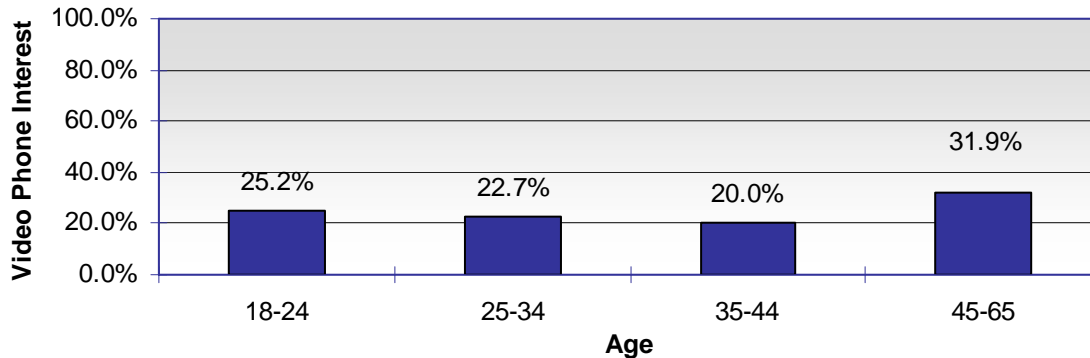


Source: In-Stat, 12/06

n = 339

When looking at the various age groups, interest was the highest among those in the 45–65 age group (see Figure 18). In-Stat believes the reason behind this is that IPTV-enabled video phones are more easily used by elders, due to the bigger TV display.

**Figure 18. Interest in Video Phone, by Age Group**



Source: In-Stat, 12/06

n = 119

Note: "n" includes respondents who are "interested" and "very interested" in the Video Phone application.

**Table 7. Preferred Payment Pattern for Video Phone Application**

	Frequency	Percent
Pay Monthly by One Package	29	24.4%
Pay Monthly by Selectable Packages	14	11.8%
Pay Per View	49	41.2%
Pay by Self-defined Package	23	19.3%
Others	4	3.4%
<b>Total</b>	<b>119</b>	<b>100.0%</b>

Source: In-Stat, 12/06

n = 119

Note: "n" includes respondents who are "interested" and "very interested" in the Video Phone application.

**Table 8. How Much Would You be Willing to Pay for Video Phone Application, per Month? (RMB)**

	Frequency	Percent
<10 RMB	59	49.6%
10–20 RMB	32	26.9%
20–30 RMB	23	19.3%
>30 RMB	5	4.2%
<b>Total</b>	<b>119</b>	<b>100.0%</b>

Source: In-Stat, 12/06

n = 119

Note: "n" includes respondents who are "interested" and "very interested" in the Video Phone application.

**Remote Parental Control Application**

Remote parental control allows parents to block access to some or all channels via their mobile phone or PC. Due to this application's relevance to parents, we are not surprised at the varied interest levels by age: respondents in the 35–44 age group, more likely to have children at home, are more interested in this application. Moreover, the interest level also increases with the number of children at home, from 18.6% of no-child families to 38.1% interest among families with more than one child.

**Table 9. Interest in Remote Parental Control, per Age Group**

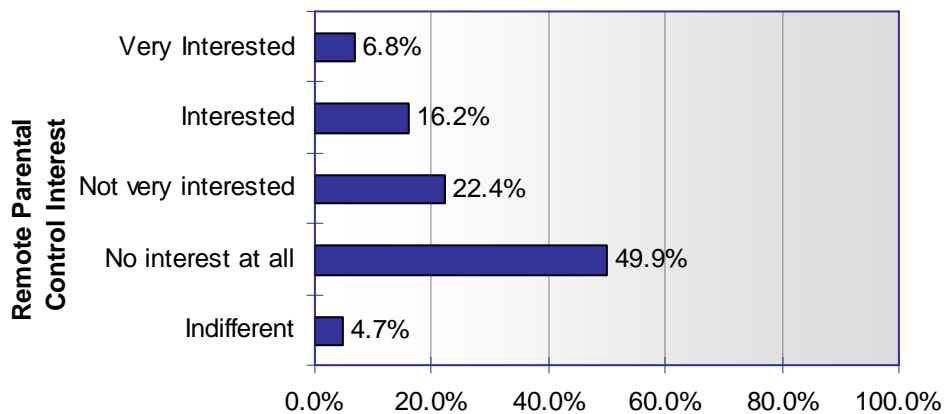
	Frequency	Percent
18–24	17	21.8%
25–34	17	21.8%
35–44	29	37.2%
45–65	15	19.2%
<b>Total</b>	<b>78</b>	<b>100.0%</b>

Source: In-Stat, 12/06

n = 78

Note: "n" includes respondents who are "interested" and "very interested" in the Remote Parental Control application.

**Figure 19. Interest in Remote Parental Control**



Source: In-Stat, 12/06

n = 339

**Table 10. Preferred Payment Pattern for Remote Parental Control Application**

	Frequency	Percent
Pay Monthly by One Package	28	35.9%
Pay Monthly by Selectable Packages	10	12.8%
Pay Per View	22	28.2%
Pay by Self-defined Package	18	23.1%
Others	0	0.0%
<b>Total</b>	<b>78</b>	<b>100.0%</b>

Source: In-Stat, 12/06

n = 78

Note: "n" includes respondents who are "interested" and "very interested" in the Remote Parental Control application.

**Table 11. How Much Would You be Willing to Pay for Remote Parental Control Application, per Month? (RMB)**

	Frequency	Percent
<10 RMB	41	52.6%
10–20 RMB	25	32.1%
20–30 RMB	7	9.0%
>30 RMB	5	6.4%
<b>Total</b>	<b>78</b>	<b>100.0%</b>

Source: In-Stat, 12/06

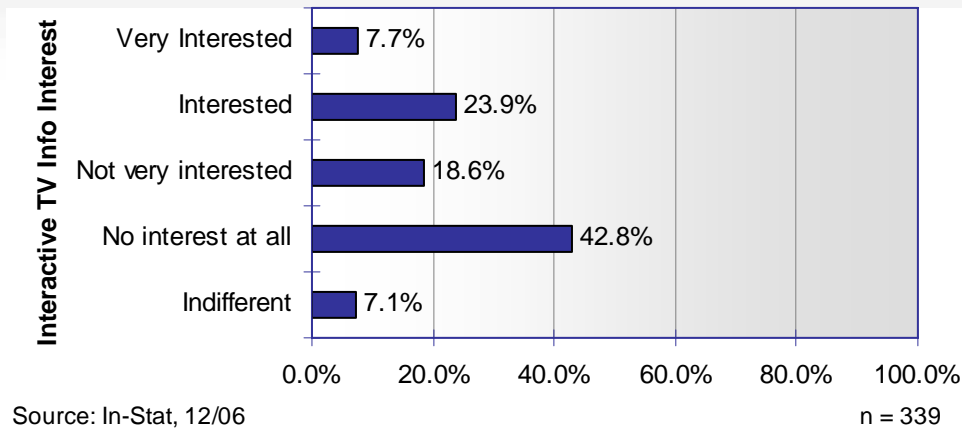
n = 78

Note: "n" includes respondents who are "interested" and "very interested" in the Remote Parental Control application.

### Interactive TV Information Application

The interactive TV information application enables information, such as TV show cast listings and biographies, relevant news, and educational information, and up-to-date sports statistics on the TV screen at the same time that a program is being viewed. Interactive TV information attracted the interest of 31.6% of overall respondents. Different from some of the other surveyed applications, respondents from all age groups showed a similar interest level in the application, with an average account of 32%. It is interesting to note that 50% of the respondents with a 12,000–16,000 RMB monthly family income find interactive TV information appealing. The percentage is much higher than the average 32% of other family income levels.

**Figure 20. Interest in Interactive TV Information**



**Table 12. Preferred Payment Pattern for Interactive TV Information Application**

	Frequency	Percent
Pay Monthly by One Package	40	37.4%
Pay Monthly by Selectable Packages	17	15.9%
Pay Per View	27	25.2%
Pay by Self-defined Package	19	17.8%
Others	4	3.7%
<b>Total</b>	<b>107</b>	<b>100.0%</b>

Source: In-Stat, 12/06 n = 107

Note: "n" includes respondents who are "interested" and "very interested" in the Interactive TV Information application.

**Table 13. How Much Would You be Willing to Pay for Interactive TV Information per Month? (RMB)**

	Frequency	Percent
<10 RMB	58	54.2%
10-20 RMB	34	31.8%
20-30 RMB	10	9.3%
>30 RMB	5	4.7%
<b>Total</b>	<b>107</b>	<b>100.0%</b>

Source: In-Stat, 12/06 n = 107

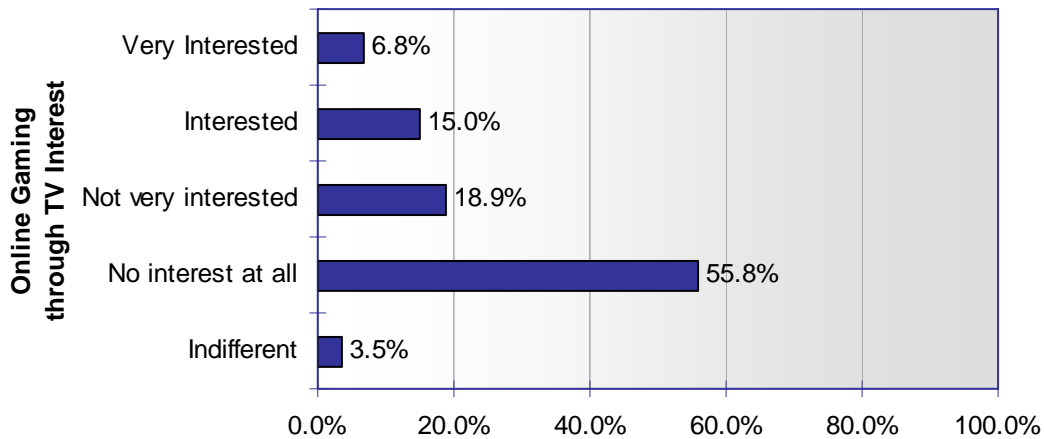
Note: "n" includes respondents who are "interested" and "very interested" in the Interactive TV Information application.

**Online Gaming through TV Application**

The online gaming application enables users to play online games through a television set. Games may be played using the set top box (STB) remote or perhaps using a game controller connected to the STB. About 22% of the overall respondents are interested in playing online games through a TV. The application is more attractive to younger respondents than older ones. Also, the interest levels decline,

with the number of children in a family, ranging from a 56.8% interest level among no-child families to 12.2% of families with more than two children. Parents in China consider online-gaming to be time-consuming and easy to become addicted to, thus highly impacting their children's studies. As a result, the parent's lower interests on the online gaming through IPTV application are reasonable.

**Figure 21. Interest on Online Gaming Through TV**



Source: In-Stat, 12/06

n = 339

**Table 14. Preferred Payment Pattern for Online Gaming Through TV Application**

	Frequency	Percent
<b>Pay Monthly by One Package</b>	24	32.4%
<b>Pay Monthly by Selectable Packages</b>	11	14.9%
<b>Pay Per View</b>	19	25.7%
<b>Pay by Self-defined Package</b>	19	25.7%
<b>Others</b>	1	1.4%
<b>Total</b>	74	100.0%

Source: In-Stat, 12/06

n = 74

Note: "n" includes respondents who are "interested" and "very interested" in the Online Gaming through TV application.

**Table 15. How Much Would You be Willing to Pay for Online Gaming through TV per Month? (RMB)**

	Frequency	Percent
<b>&lt;10 RMB</b>	34	45.9%
<b>10-20 RMB</b>	25	33.8%
<b>20-30 RMB</b>	8	10.8%
<b>&gt;30 RMB</b>	7	9.5%
<b>Total</b>	74	100.0%

Source: In-Stat, 12/06

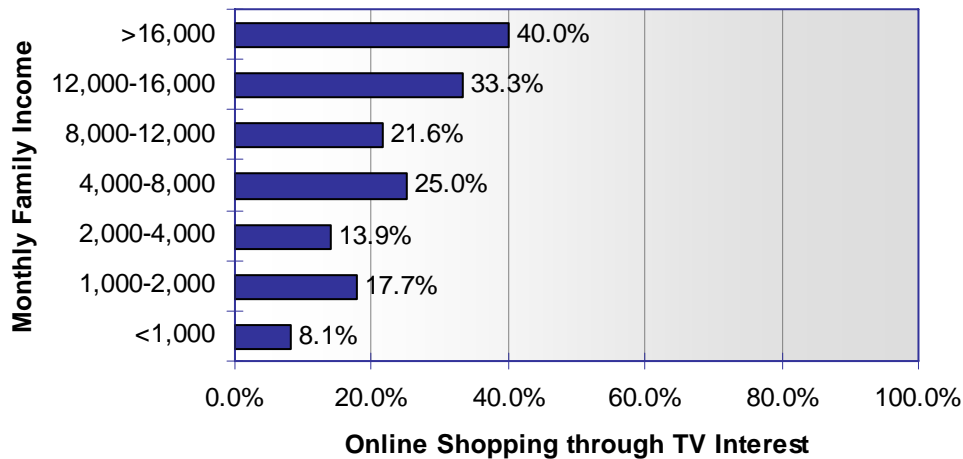
n = 74

Note: "n" includes respondents who are "interested" and "very interested" in the Online Gaming through TV application.

**Online Shopping Through TV Application**

Shopping through a TV set gained interest from only 18% of the overall respondents. Further survey questions then found that the interest level for this application declined with age, from 25% among the 18–24 age group of respondents to 10% of the 45–65 age group. In-Stat views this as a predictable trend, since younger respondents may have more experience ordering online. However, it is interesting to note that respondents with higher household monthly incomes possess more interest for online shopping via a TV (see Figure 22).

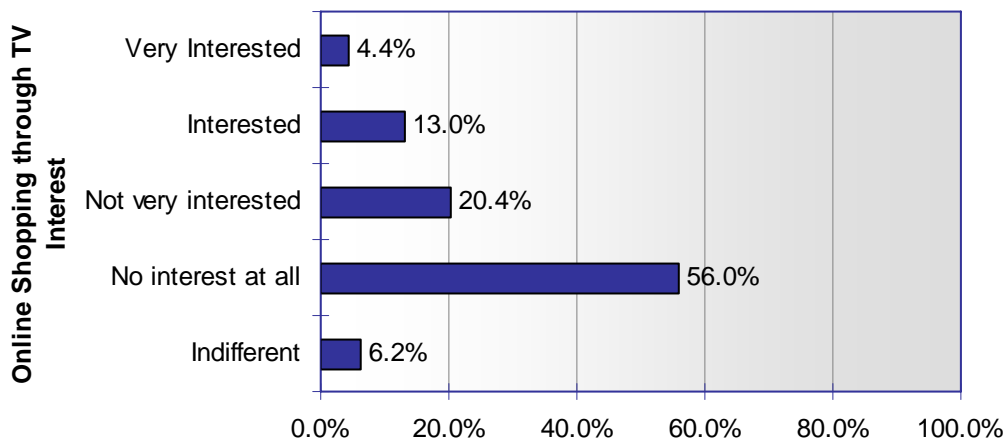
**Figure 22. Interest for Online Shopping via TV, by Family Monthly Income**



Source: In-Stat, 12/06

n = 339

**Figure 23. Interest in Online Shopping through TV Application**



Source: In-Stat, 12/06

n = 339

**Table 16. Preferred Payment Pattern for Online Shopping through TV Application**

	Frequency	Percent
Pay Monthly by One Package	13	22.0%
Pay Monthly by Selectable Packages	8	13.6%
Pay Per View	20	33.9%
Pay by Self-defined Package	14	23.7%
Others	4	6.8%
<b>Total</b>	<b>59</b>	<b>100.0%</b>

Source: In-Stat, 12/06

n = 59

Note: "n" includes respondents who are "interested" and "very interested" in the Online Shopping through TV application.

**Table 17. How Much Would You be Willing to pay for Online Shopping via TV per Month? (RMB)**

	Frequency	Percent
<10 RMB	36	61.0%
10–20 RMB	15	25.4%
20–30 RMB	4	6.8%
>30 RMB	4	6.8%
<b>Total</b>	<b>59</b>	<b>100.0%</b>

Source: In-Stat, 12/06

n = 59

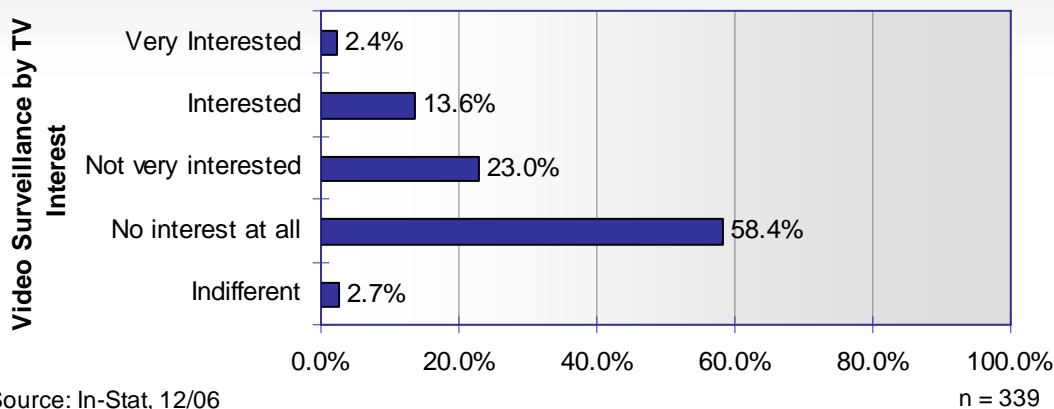
Note: "n" includes respondents who are "interested" and "very interested" in the Online Shopping through TV application.

### Video Surveillance Application

The video surveillance application enables the viewing of a television program on one part of the television screen, while in another section of the screen, another part of the viewer's house, with the help of a web camera, can be seen on another part of the screen. This application can be used for baby monitoring and home security, with web cameras within the home.

Though only 16% of the overall respondents were interested in the video surveillance application, we found that the interest level increased with the number of family members: in families with one child, 20% of this respondent group would like to choose this application. Levels of interest among family income differences were quite clear as well: 33% of those with monthly incomes above US\$1,500 are interested in the application. The interest percentage declines with less family income.

**Figure 24. Interest in Video Surveillance by TV**



**Table 18. Preferred Payment Pattern for Video Surveillance by TV Application**

	Frequency	Percent
Pay Monthly by One Package	19	35.2%
Pay Monthly in Selectable Packages	5	9.3%
Pay Per View	19	35.2%
Pay in Self-defined Package	9	16.7%
Others	2	3.7%
<b>Total</b>	<b>54</b>	<b>100.0%</b>

Source: In-Stat 12/06 n = 54

Note: "n" includes respondents who are "interested" and "very interested" in the Video Surveillance by TV application.

**Table 19. How Much Would You be Willing to Pay for Video Surveillance by TV per Month? (RMB)**

	Frequency	Percent
<10 RMB	29	53.7%
10-20 RMB	15	27.8%
20-30 RMB	6	11.1%
>30 RMB	4	7.4%
<b>Total</b>	<b>54</b>	<b>100.0%</b>

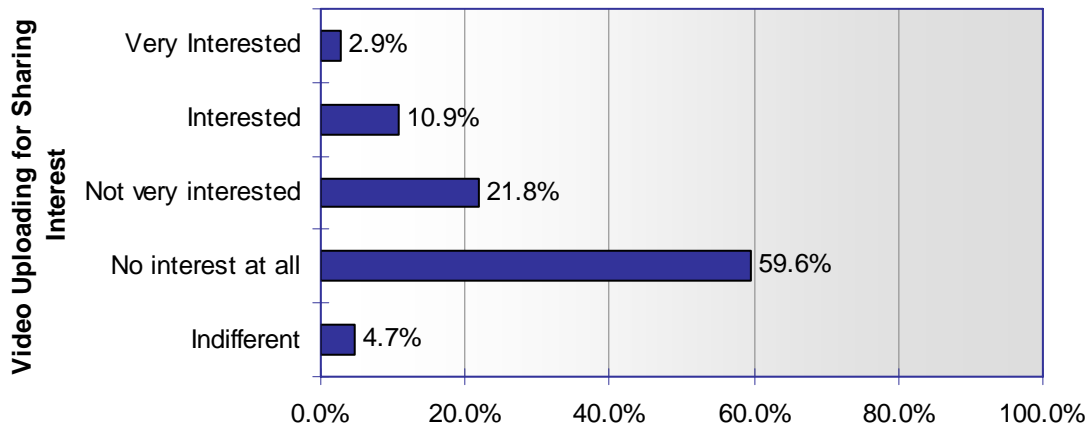
Source: In-Stat, 12/06 n = 54

Note: "n" includes respondents who are "interested" and "very interested" in the Video Surveillance by TV application.

**Video Uploading Application**

Video uploading allows the subscriber to store personal video on a network, for friends and family to view or for all to view. About 14% of overall respondents were interested in uploading their own video to the network space. Interest was also greater with one-child families than with other types of families: about 50% of one-child families would like to upload their video online for sharing with friends or relatives.

**Figure 25. Interest in Video Uploading for Sharing**



Source: In-Stat, 12/06

n = 339

**Table 20. Preferred Payment Pattern for Video Uploading Application**

	Frequency	Percent
Pay Monthly in One Package	11	23.4%
Pay Monthly in Selectable Packages	6	12.8%
Pay Per View	20	42.6%
Pay in Self-defined Package	8	17.0%
Others	2	4.3%
<b>Total</b>	<b>47</b>	<b>100.0%</b>

Source: In-Stat, 12/06

n = 47

Note: "n" includes respondents who are "interested" and "very interested" in the Video Uploading application.

**Table 21. How Much Would You be Willing to Pay for Video Uploading per Month? (RMB)**

	Frequency	Percent
<10 RMB	27	57.4%
10–20 RMB	14	29.8%
20–30 RMB	4	8.5%
>30 RMB	2	4.3%
<b>Total</b>	<b>47</b>	<b>100.0%</b>

Source: In-Stat, 12/06

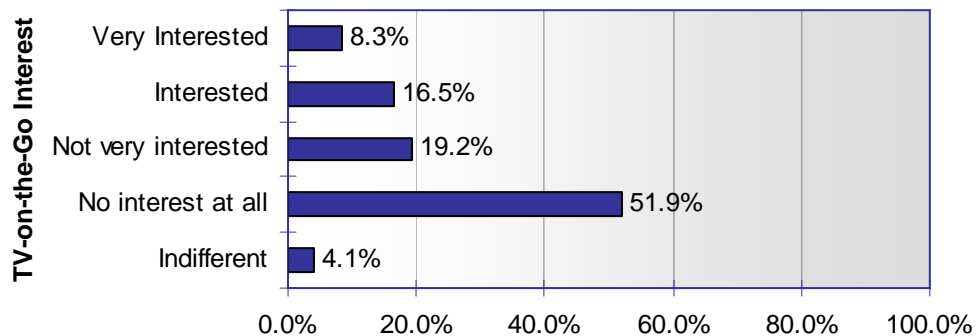
n = 47

Note: "n" includes respondents who are "interested" and "very interested" in the Video Uploading application.

**TV-on-the-go Application**

TV-on-the-go allows subscribers to download TV content to their mobile phone or portable media player (e.g. Sony PSP, or iPod). With regard to interest in the application, 25% of overall respondents were interested. It is unsurprising that the interest level is greater amongst younger respondents, ranging from 36.1% of 18–34 year old group down to 17% for those respondents over 45 years of age. One factor explaining this result is that younger respondents are more likely to own a portable media player. In terms of interest differences by family income, 50% of those with a monthly household income above 12,000 RMB are interested in having the service of TV-on-the-go. This is much higher than the average 25% of respondents among other income levels.

**Figure 26. Interest in TV-on-the-Go**



Source: In-Stat, 12/06

n = 339

**Table 22. Preferred Payment Pattern for TV-on-the-Go Application**

	Frequency	Percent
Pay Monthly by One Package	23	27.4%
Pay Monthly by Selectable Packages	13	15.5%
Pay Per View	25	29.8%
Pay by Self-defined Package	21	25.0%
Others	2	2.4%
<b>Total</b>	<b>84</b>	<b>100.0%</b>

Source: In-Stat, 12/06

n = 84

Note: "n" includes respondents who are "interested" and "very interested" in the TV-on-the-go application.

**Table 23. How Much Would You be Willing to Pay for TV-on-the-Go per Month? (RMB)**

	Frequency	Percent
<10 RMB	39	46.4%
10–20 RMB	31	36.9%
20–30 RMB	9	10.7%
>30 RMB	5	6.0%
<b>Total</b>	<b>84</b>	<b>100.0%</b>

Source: In-Stat, 12/06

n = 84

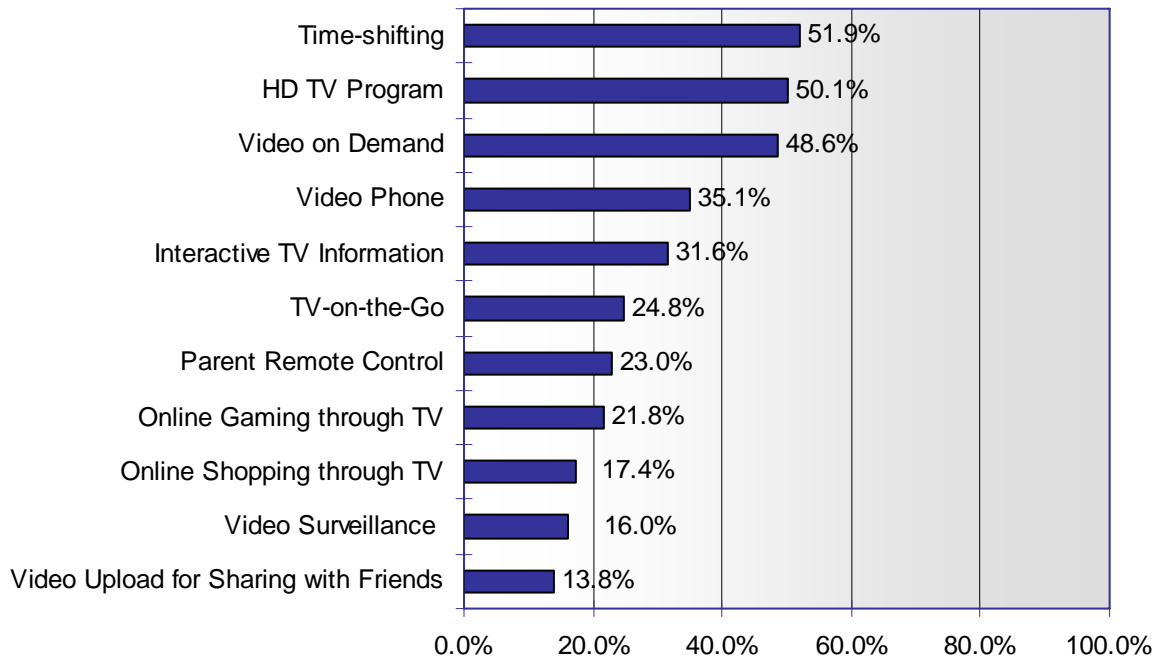
Note: "n" includes respondents who are "interested" and "very interested" in the TV-on-the-go application.

## Conclusions

Based on the analysis from the overall survey responses, it is easily evident that the advantages of IPTV and its applications are not realized by most of the survey respondents. In-Stat believes consumers will need to experience these services in person in order to understand their advantages.

In-Stat's survey found that TV program-based applications are gaining more interest from consumers than other interactive IPTV applications. As for non-TV related applications, the interest levels are relatively low, generally around 15%. We believe it will take a long time for these non-TV program interactive applications to take root, since their user base is much less than TV program based applications.

**Figure 27. Comparison of Respondent's Interests Toward 11 IPTV Applications**



Source: In-Stat, 12/06

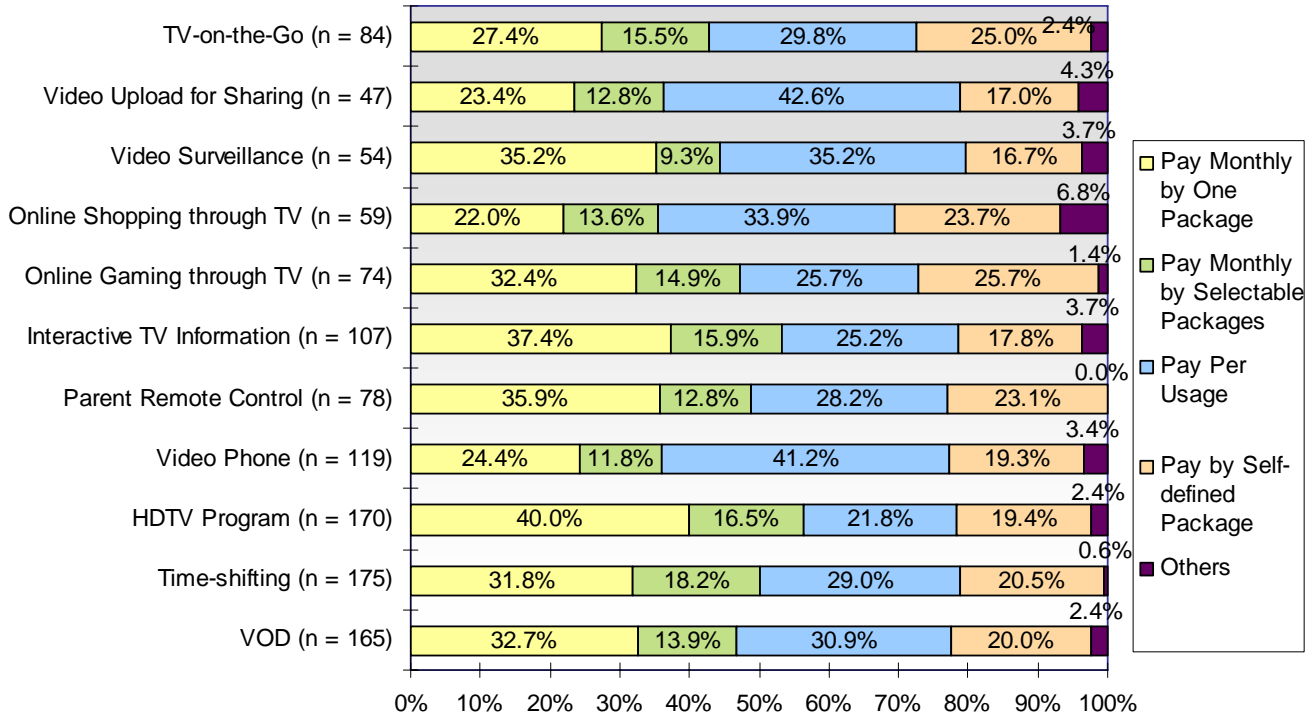
n = 339

As a result, we suggest that IPTV providers ought to deploy applications based on TV programs first. Due to the lack of current interest, it is not necessary to generate new interactive applications that most end-users are not familiar with. Besides the existing time-shifting TV, HDTV programming, interactive TV information, and TV-on-the-go, are all worth deploying first than other applications.

In terms of consumers' expectation on how they would pay for IPTV applications, interested consumers tend to prefer paying monthly by a package for most of the applications (see Figure 28), followed by pay per usage as the second preferred payment pattern. The latter was selected by respondents to pay for TV-on-the-go, video upload, video phone and online shopping through TV. No matter which

payment pattern is selected, about half of the interested overall respondents would only pay 10 RMB per month for each application.

**Figure 28. Comparison of Preferred Payment Pattern Among Respondents Who Are Interested in 11 IPTV Applications**



Source: In-Stat, 12/06

Note: "n" includes respondents who are "interested" and "very interested" in the application.

## Methodology

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In this report, IPTV refers to TV programs provided by telecom carriers. Based on the telcos broadband networks, telcos can offer different TV-watching experiences from current TV. According to this definition, In-Stat surveyed 339 consumers via telephone in December 2006 on their acceptance of IPTV, interest levels in IPTV applications, and their preference for payment methods for such applications.

The respondents came from four Chinese cities: Beijing, Shanghai, Harbin, and Shenzhen. Of the four cities surveyed, Shanghai and Harbin have already commercially deployed IPTV services. The respondents from these two cities, hence, are perceived as being more aware of the IPTV concept and some of the surveyed IPTV applications than those living in the other two cities surveyed. In addition, since Shenzhen has recently deployed the transmission of digital cable TV, In-Stat considers that residents of Shenzhen have been educated about digital TV and will easily understand IPTV and its related digital applications. In contrast, Beijing had no similar activities for either IPTV or digital cable TV, by this report's publishing date.

There were 84–86 respondents from each of the four cities surveyed. Additional demographic information including education level, age, household income, and TV related usage behaviors is presented in the demographic section of this report.

Please note that all the respondents in the survey are non-IPTV adopters. Respondents with no IPTV usage experience may not fully realize their potential demands for IPTV or relevant applications. Therefore, at the beginning of the questionnaire, respondents were explained the definition of IPTV and what IPTV can provide, so as to enable respondents to understand the advantages of IPTV and its applications. During the survey processing, each application was explained to respondents, through examples, when asking about their interest levels in the application being questioned. All the definitions that were provided to respondents are listed in the report, before the presentation of the analysis for each application, in the survey result section.

In addition, with an overall sample size of 339 respondents, at 95% confidence the worst case sampling error is around +/-5.32%. However, sampling errors for questions with a smaller sample group, like some of the breakout questions in the survey, will have different sampling errors. For example, the response group for Table 20, which shows the preferred payment method of respondents interested in the video uploading application, has only 47 samples. In such an instance, the sampling error would be +/-14.2% at 95% confidence.

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