Asia • China

Tsinghua Tongfang and the Changfeng Computer: Innovative Technology and Enlightened Application

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Summary

China has the largest agricultural population in the world, totaling about 900 million. But the rural population of China has significantly less access to, and knowledge of, computers compared to urban counterparts. This “digital gap” inhibits human development in rural areas, and therefore impedes the economic development of the country. Tsinghua Tongfang (THTF) is a high technology computer company based in Beijing, China. In 2005, THTF, with the support of Beijing municipal government agencies, developed the Changfeng computer (CF) especially for Chinese rural users. Through adopting a low cost operating system and self-developed software, CF computer is more affordable than other personal computers available on the Chinese market. At the same time the design of CF computer provides a systematic solution to help rural inhabitants in their business and personal lives. This case examines how the private sector and the public sector partnered for mutually beneficial outcomes: THTF entered the untapped rural computer market, and the Chinese government worked towards rural digital development.

Positive Outcomes for the Poor

- Rural population have more access to computers and the internet;
- Free computer training is available through the Information Centers;
- Minority students get quality courses taught in their native languages;
- Agriculture software provides business guidance and specialized knowledge to farmers;
- Rural children receive pre-recorded courses taught by high-quality teachers.

Key Barriers

- Personal computers are very expensive to the majority of the rural population;
- Most rural residents have little knowledge about computers and the internet, so they do not appreciate the potential for helping improve their life and business;
- Most rural residents lack the basic skills to operate computers;
- It is difficult to reach rural customers because of limited distribution channels, and after-sales service is difficult due to the remote locations;
- Some infrastructure, including internet service, is not available in the vast rural area in China.

Key Innovations

THTF:

- Integrated specialized agricultural software programs with hardware, so farmer-users could access the agricultural information without an internet connection required;
- Added special characteristics to CF computer (compared to regular PCs), which makes the interface and maintenance of the computer easier for rural customers;
- Leveraged the efforts and existing technologies in China to adjust the (free) Linux operation system and developed custom programs to substitute for more expensive foreign programs;
• Explored an online program and information upgrading system to support the sustainable growth of CF computer, where internet service is available;
• Partnered with government and take advantage of various government supported projects to reach rural users on the initial stage.

**Government** (Beijing Municipal Government Commission for Science & Technology):
• Mobilized the efforts of companies to nurture the rural computer market instead of making a direct investment;
• Provided support to THTF and facilitated its growth in the rural market through various projects.

**Opportunities and Challenges for Scaling Up**
• The fast growth of agricultural information will enhance the rural population’s demand for computers;
• More customers will consider buying computers after learning how to use them and appreciating their benefits;
• Price is still a major barrier for rural customers. It will be difficult to encourage large scale purchasing if rural household’s purchasing power does not increase;
• The main future challenge for CF computers growth is in how to approach individual rural buyers without support from the government.