

Operations

業務回顧

# Review



## Overview

*DVN is a leading provider of comprehensive digital broadcasting platforms that deliver content, services and applications to end-users, in particular cable TV subscribers.*

CATV operators use DVN's platforms to improve the transmission efficiency, quality and types of content and services broadcast over their networks. As a result of improved content quality and breadth of services, the CATV operator is able to better utilize its cable bandwidth and increase its revenue sources. Subscribers in return for paying higher subscription fees enjoy a broad range of content in digital quality reception as well as multimedia services, which include real time news, weather and financial information as well as personalized broadcasts. Eventually the subscriber will be able to use the television set as a point of sales device trading stocks and buying items over the TV.

DVN's platform enables digital broadcast transmissions over a variety of networks, including satellite, cable, LAN, PSTN and power lines. The platform provides video, data and audio encoding, decoding and multiplexing for distribution over broadband networks. It comes with DVN's own conditional access ("CA") system as well as supports CA systems from other vendors. The total solution platform is inclusive of DVN designed receivers that are both cost effective and supportive of multiple networks.

Digital services to date over DVN's platforms have been rolled out commercially in ten locations throughout China with more than 10 million analog subscribers in these locations. For these digital services, DVN receives a percentage of the incremental revenues generated from five of the ten locations as technology and equipment leasing fees. The platforms in the other locations were sold outright and DVN will receive, in addition to sales revenue from the platform, further revenue from the sales of its set top boxes on an ongoing basis. Digital TV services offered over DVN's platform are provided at a range of affordable subscription fees which include digital channel rebroadcasts from around China, near video on demand, on-line information, interactive advertising, T-commerce etc.

## 概覽

天地數碼在綜合數碼廣播平台的市場中佔有領導地位，其數碼平台服務終端用戶（尤其是有線電視用戶）提供全方位內容、增值服務及應用解決方案。

有線電視營運商可利用天地數碼之平台，提高其網絡的傳輸效率、及內容與廣播服務的質量並增加服務範疇。因之內容質量改善，服務範疇擴大，有線電視營運商可更有效地利用其有線寬頻資源，增加收入來源。用戶雖然要支付較高的用戶費，但可享用多種高質量數碼收視內容及多媒體服務，包括即時新聞、天氣、財經資訊及個人化廣播。最終，用戶更可將電視機作為終端交易裝置，透過電視機進行網上股票買賣及購物。

衛星、電纜、IP、LAN及PSTN等各種網絡均可透過天地數碼之平台傳輸數碼廣播。該平台透過寬頻網絡提供視頻、數據及音頻編碼、解碼及多路傳輸，相容天地數碼本身的有條件接收（“CA”）系統，亦支持其他供應商的系統。該全面解決方案平台還包括價格相宜，可支援多種網絡的接收器。

迄今為止，天地數碼在中國已有十個地區開展商業運作，該等地區共有超過一千萬模擬電視用戶。就該等數碼服務，天地數碼可從其中五個地區之不斷增長的收入中分成，作為提供技術及租賃設備費用。其他地區的平台則屬銷售形式，除出售該平台所得收入外，天地數碼還可透過銷售機頂盒持續獲得收入。透過天地數碼平台可提供中國地區數碼頻道轉播、視頻點播、網上資訊、互動廣告及電視商貿等一系列數碼電視服務，收費廣為客戶接受。

leading 頂尖企業  
player

### *Total solution provider at affordable prices*

DVN's platform is inclusive of the hardware, software and applications needed by the CATV operator to run a digital broadcasting business, the digital set top box required by the subscriber to receive the digital broadcasts and content and services to be broadcast over the platform. CATV operators, instead of using multiple vendors to piece together a digital broadcasting system, benefit significantly from using DVN's end-to-end turnkey solution. CATV operators save significant costs, such as in manpower, time, software royalties and logistics, from using a totally integrated, turnkey solution, designed and owned by DVN. These significant savings and a short construction period allow the CATV operators to offer digital TV services quickly and at prices affordable to the Chinese today.

### *Flexible system that allows for change and growth*

DVN's platform, which runs on both existing analog networks and new generation broadband networks, precludes the necessity for CATV operators to upgrade its network further for digital broadcasts. The DVN platform is a scalable, open system that not only accommodates numerous income-generating services but also supports multiple hardware devices, such as personal computers and telephones. DVN provides to the CATV operators continuous technical upgrades in order to insure that the platform remains at the cutting edge of digital technology, as well as the option to subscribers to upgrade their set top boxes. This is all supported by DVN's research and development efforts. DVN, in September, unveiled a new set top box, the "J-box" that turns a TV set into a network computer, revolutionizing the way cable operators perceive and the end-users utilize set top boxes. The new J-box, operating in a personal Java environment, enables computer like functions and supports online games without the necessity for a large hard drive and CPU within the set top box. DVN's platform supports the J-box and DVN envisages that such a digital receiver will be the trend of the future.

### 以相宜價格提供全面解決方案

天地數碼之平台包括有線電視營運商經營數碼廣播業務所需的硬件、軟件及應用系統，以及用戶接收數碼廣播及透過平台廣播獲取內容及服務所需的數碼機頂盒。有線電視營運商毋須再依靠不同的來源整合一套數碼廣播系統，只需利用天地數碼的端對端全面解決方案便可大大獲益。利用天地數碼設計及擁有的全方位綜合解決方案，有線電視營運商可大大節省成本，如人力、時間、軟件使用費及後勤開支。由於節約大量成本及建設期較短，有線電視營運商可在短期內以適合中國現時水平的相宜價格提供數碼電視服務。

### 包容變化和擴張的靈活系統

天地數碼之平台可在現有模擬網絡和新一代寬頻網絡上運行，包容有線電視營運商不需要將其網絡升級也可進行數碼廣播。天地數碼平台提供一套具擴張性的系統，既容納多種功能開拓收益的服務，亦支援多種硬件設備，例如個人電腦及電話。天地數碼向有線電視營運商持續提供技術升級，以確保其平台始終領導數碼技術的尖端，並向用戶提供機頂盒升級的選擇。天地數碼於九月份首次推出全新的機頂盒「J-box」。J-box的作用是將普通的電視機用作聯網電腦。該產品在有線營運商對機頂盒的傳統認知，及終端用戶使用機頂盒的舊有模式起了突破性的創新。新J-box在獨立Java環境下運行，具有類似電腦的功能並支持網上游戲，但無須在機頂盒內安裝大磁碟驅動器及中央處理器。天地數碼之平台支持J-box。天地數碼相信此數碼接收器將成為未來發展趨勢。

*CATV operators save significant costs, such as in manpower, time, software royalties and logistics, from using a totally integrated, turnkey solution, designed and owned by DVN.*

有線電視營運商可大大節省成本，如人力、時間、軟件使用費及後勤開支。

### *Equipped with Conditional Access System*

DVN's platform is equipped with its own CA system but also supports CA systems from outside vendors. DVN's in-house designed CA system is one of six government-approved domestic systems for usage by CATV operators in China. DVN's CA system provides CATV operators with an automatic fee collection system linked to local banks that not only improves the cash flow of the CATV operators but also provides a viable payment method for T-commerce transacted over the system. Combined with DVN's highly complex encryption system, the CATV operator is able to offer its end-user a secure environment in which to do on-line transactions.

DVN's CA system allows for different services to be offered over the one platform and to be received by only subscribers that have paid for the particular service. A range of digital services may be offered at varying subscription fees and targeted at particular end-users and interest groups. The CA system enables services such as satellite received foreign broadcasts for foreign passport holders only, video on demand, on-line stock quotes and T-commerce transactions.

### *Only foreign technology to receive government certification*

DVN's technology in August 2001 received top-level accreditation from China's MST encouraging cable operators to use DVN's technology and eliminating the requirement to attain a license for digital broadcasts. Under China's "863 State Hi-Tech Plan" as put forth by the MST in 1986, which serves as a blueprint for the development of its technology related industries, the Chinese Academy of Science was responsible for the development of some communication technologies, including digital broadcasting. A subsidiary of the Academy of Science in 1999 teamed up with DVN and its leasing partner in Suzhou, Suzhou Cable TV, to develop a digital broadcasting system, including the software for set top boxes, specifically for the China market. In July of this year, the MST sent a team of specialists, including those from the SARFT, to Suzhou Cable TV to examine and evaluate its digital broadcasting system. Not only did the MST award the technology the highest rating within the communication category of the 863 State Hi-Tech Plan but it also recommended that it should be promoted and distributed throughout China as soon as practical. Such a recommendation has given guidance to Chinese cable operators that they should upgrade their broadcasting equipment using DVN's technology and platform.

## 配備有條件接收系統

天地數碼平台自身配備CA系統，但亦支持其他供應商之CA系統。在中國有線電視營運商獲政府批准的六個國產CA系統中，天地數碼內部開發之CA被選為其中之一。天地數碼之CA系統向有線營運商提供與當地銀行連接的自動收費功能，不僅有助於加快有線電視營運商的現金流動，而且為透過該系統進行的電視商貿提供可行的付款方式。配合天地數碼高度綜合化的加密系統，有線營運商可為其終端用戶提供安全可靠的線上交易環境。

天地數碼CA系統可透過一個平台提供各種不同服務，且只有已繳費的用戶才可以使用。因此，可按不同的收費檔次及針對特定的終端用戶以及對不同服務感興趣之群體提供不同類別的數碼服務。該CA系統可支援多種服務，如僅供外籍人士收視的海外衛星廣播、視頻點播、網上股票報價及電視商貿等。

## 唯一通過當局認證的外方數碼技術

天地數碼之技術於二零零一年八月獲得中國科技部最高級別認證，此舉有助促進有線營運商使用天地數碼的技術，而無需獲得數碼廣播牌照。科技部於一九八六年發佈中國「國家863高科技計劃」，為科技各領域制定發展藍圖。中國科學院負責開發若干通信技術，包括數碼廣播。一九九九年，中科院一附屬單位與天地數碼及其蘇州租賃夥伴「蘇州有線電視台」成立專項小組，以開發數碼廣播系統，包括針對中國市場的機頂盒軟件為開發重點。去年七月，科技部派遣一專家小組（包括廣電總局之人員）前往蘇州有線電視台，測試及評估其數碼廣播系統。科技部不僅授予該技術「國家863高科技計劃」通信技術組別最高評級，而且建議在切實可行的情況下儘快在全國推廣及銷售該技術平台。該建議有助鼓勵中國的有線營運商有信心地使用天地數碼的技術替其廣播平台升級。

*DVN's in-house designed CA system is one of six government-approved domestic systems for usage by CATV operators in China.*

在中國有線電視營運商獲政府批准的六個國產CA系統中，天地數碼內部開發之系統被選為其中之一。

Upon receiving this accreditation, DVN began work immediately to completely digitize Suzhou Cable TV's network to prepare for basic digital services. Basic digital services were first introduced in November offering subscribers over 70 digital channels, largely rebroadcasts from all over China. DVN's sales of set top boxes increased substantially after the introduction of basic digital services in Suzhou city. Before the introduction of basic services, only 1.4% of the cable population in Suzhou proper (an area with a CATV population of 210,000) had subscribed to premium Pay TV services. Within the last six weeks of the year after the introduction of basic digital services, the penetration of digital services inclusive of both basic and premium Pay TV, increased to 3.5%. Due to the favorable response to basic digital services in Suzhou, a variation of the basic services was commenced in December in Zhongshan, also to favorable response. DVN has concluded from the success of its basic digital services that Chinese consumers want more channels and better quality content at a low price. DVN plans to introduce this proven business model in other locations throughout China where its platforms are already installed to maintain its first mover advantage and further strengthen the market's barriers to entry.

#### *DVN's partners receive first Pay TV licenses*

In March, one of DVN's contracted partners, Hebei Provincial TV Station received in the form of a Pay TV license formal permission to broadcast licensed digital content, the first CATV to receive such permission. Shandong Cable Network received its Pay TV license in April. More recently, other CATVs in Hunan, Henan and Shanghai also received Pay TV licenses. Due to the political sensitivity of the broadcasting industry, the government had spent considerable time considering how to regulate Pay TV. Detailed regulations were not put forth until December 2000 and in March 2001, Hebei Provincial TV Station received the first Pay TV license to be issued. As of year end 2001, only 5 such licenses had been issued, all to cable operators that had installed a DVN digital broadcasting platform over which Pay TV services would be broadcast.



於通過該等認證後，天地數碼立即開展蘇州有線電視全面數碼化的工作，同時開始準備基本數碼服務。基本數碼服務於十一月份首次推出，主要透過七十多個數碼頻道向用戶轉播全國各地的節目。在蘇州市推出基本數碼服務後，天地數碼機頂盒之銷售大幅上升。在推出基本數碼服務之前，蘇州僅有1.4%的有線電視用戶（該地區有線電視用戶為210,000戶）訂購專業收費電視服務。於推出基本數碼服務後的六個星期內，數碼服務（包括基本數碼服務及專業收費電視服務）的滲透率增至3.5%。由於蘇州的基本數碼服務反應良好，中山市亦於十二月份開展多樣化基本服務，同樣收到良好反應。天地數碼從其基本數碼服務之成功得出結論，中國消費者希望以較低價格獲得內容豐富的高質量服務。天地數碼計劃在中國已安裝其平台的其他地區推行該成功業務模式，以搶佔先機，進一步提高第三者進入市場的障礙。

### 天地數碼之夥伴獲發首面收費電視牌照

天地數碼的簽約夥伴之一，河北省有線電視台於三月份獲簽發收費電視牌照，正式獲准播放經授權的數碼內容，為首家獲發此牌照的有線電視營運商。山東有線電視網絡公司於四月份獲發收費電視牌照。近期，湖南、河南及上海的其他有線電視台亦獲發收費電視牌照。由於廣播行業之政治敏感性，政府投入相當時間制定規管收費電視的方法。直至二零零零年十二月才公佈規管細則。於二零零一年底，僅簽發五面該等牌照，且均發給已安裝天地數碼廣播平台的有線營運商。與無須牌照要求、主要轉播中國各地節目的頻道領域相比，收費電視牌照無疑增擴了有線電視營運商經營獲准播放內容的服務範疇。

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於三月份，天地數碼的簽約夥伴，河北省有線電視台獲簽發收費電視牌照，正式獲准播放經授權的數碼內容，為首家獲發此牌照的有線電視營運商。

Pay TV licenses provide the CATV operators with more latitude regarding the type of content allowed to be broadcast. This is as compared to areas that do not yet have licenses and are limited primarily to channel rebroadcasts from around China.

Hebei's and Shandong's Pay TV licenses were granted after a thorough review by SARFT of the contracts between Hebei Provincial TV Station and Shandong Cable Network (Holdings) Limited with DVN. DVN's contracts with its other leasing partners are similar to those for Hebei and Shandong. In Shanghai, Shanghai Broadcasting Bureau bought a DVN digital broadcasting platform. In Henan and Hunan, digital broadcasts are also to be over DVN platforms. Given SARFT has approved the contracts between DVN and Hebei Provincial TV Station as well as with Shandong Cable Network, DVN believes it is highly likely that approvals will be forthcoming for its other partners.

Premium Pay TV services were launched in Hebei Province in August and in Shandong Province in December, offering subscribers twelve digital channels which include international and Chinese movies and dramas, as well as MTV, Discovery channel to name a few. The price for the service was originally around RMB 40 per month and required an upfront purchase of a set top box. However, take up of this service was slow. The experience in Hebei caused DVN to rethink its business model and conduct the trial service in Suzhou. The response in Suzhou to DVN's basic digital package proves that consumers want access to more content at low prices with upgrades to premium interactive Pay TV possible after consumers become more familiar with digital broadcasting technology and its capabilities. DVN is now looking to extend a variation of basic digital services into Shandong and Hebei at a more acceptable price point and offering a broader range of content.

### *International Financial Data Provider*

DVN through its group company, Dynamic Network Limited also disseminates real time international financial market information and selective real time consumer data to end users in the PRC, Malaysia, Singapore, Taiwan and Hong Kong. The type of content provided includes equity, commodities and foreign exchange real time data.

在簽發河北及山東之收費電視牌照的過程中，廣電總局曾經全面審核天地數碼分別與河北省有線電視台及山東省有線電視網絡公司訂立的合約，天地數碼與其他租賃夥伴之間的合約類似於其與河北及山東之合約。在上海，上海廣播局已購買天地數碼的廣播平台。在河南及湖南，數碼廣播亦透過天地數碼平台進行。鑑於廣電總局已批准天地數碼與河北省有線電視台及山東省有線電視網絡公司的合約，天地數碼相信其他夥伴在不久將來有很大機會獲得批准。

專業收費電視服務於八月份在河北省推出，並於十二月份在山東省推出，向用戶提供十二個數碼頻道，內容包括國際及中國電影及電視劇、音樂頻道、探索頻道等。該項服務每月收費約40元人民幣，需預先購買一個機頂盒。然而，該項服務進展緩慢。於河北之經歷促使天地數碼重新考慮其業務模式，並在蘇州進行試行服務。蘇州對天地數碼之基本數碼方案反應良好，表明消費者希望以較低價格收看更多內容，可能在熟悉數碼廣播技術及其功能後，才升級至專業收費互動電視服務。目前，天地數碼正以更易被市場接受的價格水平向山東及河北省推廣多樣化基本數碼服務，擴大市場服務內容範疇。

### 國際金融數據供應商

天地數碼亦透過集團公司Dynamic Network Limited向中國、馬來西亞、新加坡、台灣及香港的終端用戶發佈實時國際金融市場資訊及精選消費者數據，所提供的內容種類包括政券、期貨及外匯的實時資料。

*Pay TV licenses provide the CATV operators with more latitude regarding the type of content allowed to be broadcast. This is as compared to areas that do not yet have licenses and are limited primarily to channel rebroadcasts from around China.*

與無須牌照要求、主要轉播中國各地節目的頻道領域相比，收費電視牌照顯然增加了有線電視營運商經營獲准播放內容的服務範疇。

## Digital TV Services

### *Tiered digital services for different target audiences*

Broadcasts over DVN's platform offer subscribers a range of services, which include basic digital services, premium digital services for domestic audiences and foreign expatriate audiences and data services. The basic digital services are at the lowest price point and serve as an introduction to digital technology and its capabilities. Premium services are targeted at more technology savvy consumers who want a more interactive experience. Premium services for expatriates are satellite broadcasts that are restricted to foreigners only. DVN and its CATV partners plan to use basic digital services as a stepping-stone to higher value added premium Pay TV as subscribers become more familiar and comfortable with digital TV services.

### *Basic Digital Services*

Basic digital services are generally satellite rebroadcasts from all over China and do not require a Pay TV license from SARFT. The service is also priced at around RMB18 per month to enable an inexpensive entry point to digital TV. Under the analog service, viewers are restricted to around 20 to 30 channels only, some of which are mandated by the government for communication purposes. By using digital technology to compress the broadcasts, the number of channels able to be transmitted over the cable network increases by up to six-fold. Under the basic digital service, subscribers are able to receive over 70 channels increasing the range of content received as well as introducing flexibility in start times as different programs may be staggered over different channels. Channels included as part of this service include all the CCTV 11 channels and other popular provincial channels from Hunan, Jiangsu, Zhejiang, Guangdong and Sichuan Provinces to name a few. The basic digital service varies from location to location as rules in different areas effect what is shown over the platform. In Zhongshan as it is part of Guangdong Province, the rules regarding broadcasts of foreign content over the cable network differ from the rest of China and as a result content from approved foreign channels are able to be distributed without having to first receive a Pay TV license. This is not the case in Suzhou where the content is largely domestically sourced. Variations of basic services have been launched in Zhongshan, Zhoushan and Yixing.

Basic digital services also includes an electronic program guide which allows the end user to easily see what programs are on at what times with database search functions.

## 數碼電視服務

### 向不同目標觀眾提供不同類別的數碼服務

透過天地數碼平台向用戶提供之系列廣播服務，包括基本數碼服務、面向國內和外籍觀眾的專業收費電視服務以及數據服務。基本數碼服務收費低廉，作用在於推廣數碼技術及其功能。專業收費電視服務之對象為懂得一定技術常識，希望有多種互動體驗的消費者。面向外籍人士的專業服務透過衛星廣播，僅限於對外籍人士播放。鑑於用戶對數碼電視服務越來越熟悉和喜愛，天地數碼及其有線電視夥伴計劃利用基本數碼服務作為踏腳石以獲取高增值專業收費電視服務的基礎。

### 基本數碼服務

基本數碼服務指一般透過有線電視數碼頻道轉播中國其他地區的衛星頻道節目，並不需要獲廣電總局簽發收費電視牌照。該項服務收費約為每月人民幣18元，為用戶提供低價使用數碼電視之切入點。使用模擬電視服務，觀眾只能收視二十至三十個頻道，且部分頻道為政府之專用通訊頻道。使用數碼技術進行壓縮，通過有線網路傳輸的頻道數目即時可多增加六倍。使用基本數碼服務，用戶可以收視逾七十個頻道，不僅節目內容更豐富，不同節目可在不同頻道不同時間播放，安排更為靈活。此項服務之部份頻道包括中央電視台的十一個頻道，以及湖南、江蘇、浙江、廣東及四川台廣受歡迎的頻道。由於不同地區對透過平台播放節目的規定各不相同，因此不同地區的基本數碼服務將會不同。由於中山市位於廣東省，其透過有線網絡播放外國節目的規定與中國其他地區不同，因此，該市可播放外國頻道內容而無須事先獲得收費電視牌照。蘇州的情況則與此不同，其節目內容主要來自國內。多樣化基本服務已在中山、舟山及宜興推出。

基本數碼廣播服務的收費通常低於專業收費電視的收費。基本數碼服務還包括一個類似數據檢索功能的電子節目指南，方便終端用戶查閱節目播放時間。

*Broadcasts over DVN's platform offer subscribers a range of services, which include basic digital services, premium digital services for domestic audiences and foreign expatriate audiences and data services.*

*透過天地數碼平台向用戶提供之系列廣播服務，包括基本數碼服務、面向國內和外籍觀眾的專業收費電視數碼服務以及數據服務。*

### *Premium Pay TV Services*

Pay TV services to domestic audiences that show licensed content, on which royalties are paid, require a license from the SARFT and only Hebei, Shandong, Hunan and Henan Provincial CATVs as well as Shanghai Municipal Cable Network have received such licenses. Premium Pay TV services includes near video on demand and multiple channels with foreign video content.

Pay TV services for foreigners include but are not limited to satellite received broadcasts of CNN, HBO, ESPN, Channel V, Phoenix News and Movies as well as CNBC. The price of this service is around RMB 220 per month. An advance purchase of a set top box is also required. Such services for foreigners have been launched in Suzhou to the large expatriate community residing there.

The current premium Pay TV for domestic audiences is usually around twelve digital channels that show both Western and Hong Kong movies duly censored by the SARFT as well as locally produced movies, TV dramas, children's shows, sports and music. The channels run 24 hours a day with staggered start times on multiple channels. The service also includes a TV magazine that describes and promotes the service's content as well as provides commentary and background on the featured content. Premium Pay TV services for domestic audiences were launched in three cities in Hebei Province in August. Under the current package, premium Pay TV services are provided at a promotional price of RMB20 per month inclusive of data services. Subscribers are also required to make an upfront purchase of a set top box. In December premium Pay TV services were launched in two cities in Shandong Province and under a trial run in Wuxi pending its Pay TV license.

### *Data Services*

Data services refer to TV web, on-line stock quotes as well as real time news and financial information. In some locations data services are priced separately and in others it is part of the entire package to promote the service to subscribers. Unlike video content, data content does not require a license for broadcasting.

## 專業收費電視服務

收費電視服務面向國內觀眾，播放經授權的內容，須支付使用費及獲廣電總局簽發牌照，目前只有河北、山東、湖南、河南省的有線電視台以及上海市有線電視網絡獲發該牌照。專業收費電視服務包括視頻點播，及多個頻道播放外國視像內容。

面向外國觀眾的收費電視服務包括（但不限於）透過衛星播放 CNN、HBO、ESPN、Channel V 及鳳凰衛視的新聞、電影以及 CNBC。該項服務每月收費 220 元人民幣，且須預先購買機頂盒。專業收費電視服務已在蘇州市最大的外籍人士聚居區推出。

目前面向國內觀眾的專業收費電視通常約有十二個數碼頻道，播放經廣電總局妥為審查之西方、香港電影及中國各地製作的電影，電視劇以及兒童、體育及音樂節目。這些頻道每天全天 24 小時在不同時段不同頻道播放節目。該項服務亦包括電視雜誌，介紹及推廣服務內容，同時提供主要內容的評論及背景資料。面向國內觀眾的專業收費電視服務於八月份在河北省的三個城市推出。根據現行方案，專業收費電視服務以每月 20 元人民幣的推廣價，向用戶提供十二個數碼頻道，包括數據服務。此外，用戶須購買一個機頂盒。專業收費電視服務於十二月份在山東省的兩個城市推出，並在無錫試行。

## 數據服務

數據服務指電視網站、網上股市報價、實時新聞及金融資訊。在若干地區，數據服務單獨計費，但在另一些地區則作為整體服務項目的一部分，以向用戶推廣服務。與視頻內容不同，經營數據內容無須取得廣播牌照。

*Premium Pay TV services includes near video on demand and multiple channels with foreign video content.*

*專業收費電視服務包括視頻點播，及多個頻道播放外國視像內容。*

## DVN's Business Model

DVN, in offering CATVs a total solution, derives revenue from three main lines of business: platform provider; content aggregation; and provision of value added services.

### *Platform Provider*

DVN designs, integrates and installs platforms for CATV operators that will allow it to deliver digital Pay TV services to its subscribers. DVN provides all the system components at the operator level, which include the broadcast control system, conditional access system, subscriber management system and the hardware as well as the digital set top boxes at the subscriber level. DVN either sells the system outright or enters into leasing contracts with the CATV operator. If DVN sells the system outright, it receives an annual maintenance fee over the contractual period on top of the sales price of the platform. Under the leasing option, in consideration for the lease of its platform, continual platform maintenance and application software upgrades, DVN will receive a percentage of all subscription fees collected for digital broadcasts over the contractual period.

In general, the CATV operator will sell DVN's set top boxes to subscribers who wish to receive digital services. DVN usually receives sales revenue from the resale of its set top boxes.

### *Content Aggregator*

DVN receives royalties or commissions from the CATV operators for providing them with content, which includes video, data and text. DVN has a 30 year exclusive licensing contract with China Star Entertainment Limited, a leading Chinese film production house in Hong Kong, to broadcast in China upon approval from the relevant regulatory bodies, their titles over DVN's platform. China Star produces over 50-60 Chinese language movies per year. DVN also has license to a library of over 1,000 movie and educational titles, plus over 4,000 titles of documentaries, from content providers. DVN also receives commissions for the on-line news and financial information it provides to the CATV operators. Through its strategic partner, DVN is able to introduce content from Discovery, Disney, Shanghai Film Production Works, the Fashion Channel and MTV.

### *Value Added Service Provider*

The number and type of applications that DVN's platform is able to support is limitless. This is due to the open architecture of the system as well as the installation of the Smart Card in each subscriber's set top box. Interactive services currently envisaged include video on demand, on-line trading, on-line shopping and home banking to name a few. Together with the use of the Subscriber Management System ("SMS"), the Smart Card provides not only a secure transaction environment but also a payment method. DVN believes that currently in China only first movers and technically advanced consumers in China are ready for interactive services and that numbers to support this sort of service will not be sufficient for several years to come. However, as interactive services become more common and acceptable, fees from these sorts of services will provide a more diversified revenue base to both DVN and its CATV partners.



## 天地數碼之業務模式

天地數碼為有線電視台提供全方位解決方案，收入主要來自三大業務項目：平台供應、內容彙集及增值服務。

### 平台供應

天地數碼為有線電視營運商設計、整合及安裝平台，以便有線電視營運商向用戶提供數碼收費電視服務。天地數碼供應營運商層面所需的所有系統部件，包括廣播監控系統、有條件接收系統、用戶管理系統及硬件，以及用戶層面之數碼機頂盒。天地數碼向有線營運商整合出售該系統，或與其簽訂租賃合約。倘屬天地數碼出售之系統，則除平台銷售額外，天地數碼還收取合約期內之年度技術支持費。倘採用租賃形式，作為平台租賃、持續保養及應用軟件升級之代價，天地數碼將分享合約期內所有數碼廣播用戶費之分成比例。

一般而言，有線營運商會將天地數碼之機頂盒售予接受數碼服務的用戶。從而，天地數碼亦會從機頂盒轉售獲取收益。

### 內容彙集

天地數碼向有線電視營運商提供內容服務，包括視頻、數據及文字，從其收取使用費及手續費。天地數碼與本港具有領導地位之製片公司「中國星集團」簽署了為期30年的獨家合約，經有關規管機構批准後通過天地數碼平台在國內播放。中國星每年出產五、六十部華語電影。天地數碼已獲內容供應商授權，擁有一個豐富的影片庫，內容包括一千多部電影及教育節目，以及逾四千多部紀錄片。天地數碼為有線電視營運商供應網上新聞及金融資訊，收取手續費。此外，天地數碼亦透過其策略夥伴，獲得Discovery、迪士尼、Shanghai Film Production Works、The Fashion Channel及MTV的節目。

### 增值服務

天地數碼平台可支持各種各樣的應用軟件。目前設想中的應用軟件，包括視頻點播、網上交易、網上購物及家居銀行等。這是因為系統的開放式功能，以及在每名用戶的機頂盒內裝設智能卡，便可達到上述目標。連同天地數碼開發之用戶收費系統（“SMS”）一起併用，智能卡不單能提供安全可靠的交易環境，也能提供可靠的付款方法。天地數碼相信，目前在中國只有業界先行者及擁有高級技術的消費者才認可互動服務。預期隨後幾年，支持該類服務的人數未必是主流；然而，隨著互動服務日益普及並為大眾所接受，該類服務之收費將為天地數碼及其有線電視夥伴提供多元化的收入基礎。

*DVN, in offering CATVs a total solution, derives revenue from three main lines of business: platform provider; content aggregation; and provision of value added services.*

天地數碼為有線電視台提供全方位解決方案，收入主要來自三大業務項目：  
平台供應、內容彙集及增值服務。

## Largest Cable Television Market in the World Which Needs Digital Technology

TV penetration in Chinese households is nearly 100% as compared to around 5% for personal computers. Additionally China currently has over 100 million cable TV subscriber households. This is greater than the 60 million subscribers in the United States, and the 50 million subscribers in Europe. In addition China's cable network is comprised of over 300,000 kilometers of laid cable.

Most CATV operators in China currently utilize analog broadcasting technology on a one-way network infrastructure. The analog transmissions are directly received by the end-user's television set and do not require an analog set top box receiver. Analog technology, as compared to digital broadcasting technology, does not fully utilize the bandwidth and revenue generating capacity of the cable network and does not provide any encryption. Additionally, transmission is very susceptible to interference. Digital broadcasting, on the other hand, by using compression technology increases broadcasting transmissions by at least 6 times and allows the CATV operator to diversify and increase revenues by offering a broader range of content and new interactive services. Furthermore, digital signals may be encrypted under complicated methods making it very difficult and uneconomic to decode.

As China's cable networks were recently installed and are relatively modern, most of the laid cable networks are fiber optic and hybrid fiber coaxial ("HFC"), providing broadband transmission speeds of over 38 megabytes per second ("mbps"). This is compared to that of personal computer modems of 56 kilobytes per second, Integrated Service Digital Networks ("ISDN") of 128 kilobytes per second and Asymmetric Digital Subscriber Lines ("ADSL") of between 1.5 mbps and 8 mbps only if within 5 kilometers of the telephone company's local exchange. Only ADSL networks come close to achieving similar transmission speeds to those of cable TV HFC but such ADSL network services are currently only on offer in a few locations and charges over these networks are very expensive. The size of these networks is also restricted due to the necessity for users to be within a 5 kilometer proximity of the telephone company. However, despite the modernity of China's cable network, most of the cable only provides for one-way transmission. As a result, interactive services such as VOD, Tcommerce etc, require an outside return path or upgrading of the network to two-way transmission, which is very costly and time consuming. DVN technology enables interactive services over the TV on a one-way network by utilizing an outside return path such as a phone line, the Ethernet or IP network.

### *Unique cable industry structure*

Largely as a result of the unique structure of China's cable industry, digital broadcasting offers a beneficial solution to both the service provider and the end-user. Digital broadcasting allows CATV operators to maximize their profits by better utilizing their bandwidth and it provides end-users with better quality and a broader range of content.

## 世界最大的有線電視市場需求數碼技術：

現時，電視在中國國內的家庭滲透率接近100%，而個人電腦的滲透率卻只得5%。目前，全中國共有超過一億有線電視家庭用戶。這個數字已超過美國的六千萬用戶及歐洲的五千萬有線電視家庭用戶。此外，已鋪設的中國有線網絡電纜長度超過三十萬公里。

中國的有線電視目前大多採用基於單向網絡基礎設施之模擬廣播技術。模擬廣播由終端用戶的電視機直接接收，不需要安裝模擬機頂盒接收器。與數碼廣播技術相比，模擬技術未能完全利用有線網絡的頻寬以及增加收入的功能，而且傳輸容易受到干擾，也不具備加密功能。另一方面，由於數碼廣播技術使用壓縮技術，增加廣播傳輸容量至少六倍，因此有線營運商可藉此提供更廣泛內容及新增互動服務項目，從而擴大及增加收益。此外，加密方式十分複雜，破解密碼難度十分大且不經濟。

由於有線網絡是近期裝設，相對而言較為先進，大部分已鋪設的有線網絡都是光纖及混合纖維同軸電纜（“HFC”），提供每秒超過38百萬位元組（“mbps”）的寬頻傳輸速度。相比之下，個人電腦數據機的傳輸速度為每秒56千位元組，整合數碼網絡服務（“ISDN”）的速度為每秒128千位元組，而非對稱數位用戶回路（“ADSL”）在電話公司交換站五公里範圍內的輸送速度為每秒1.5至8百萬位元組。只有ADSL網絡的傳輸速度，接近使用HFC的有線電視傳輸速度。但ADSL網絡目前只在數個地區提供，費用昂貴。這些網絡的規模，也只局限於電話機樓方圓五公里範圍內的用戶。儘管中國有線網絡日益先進，但大部分有線網絡只提供單向傳輸功能，而互動服務如視頻點播（“VOD”）、電視商貿等均要求外部回傳路徑或將網絡升級至雙向傳輸，後者極為昂貴且耗時。天地數碼技術通過採用一個外部回傳路徑，如電話線、乙太網絡或IP網絡，從而可使用單向網絡提供互動服務。

## 獨特的有線電視行業架構：

鑑於中國有線電視行業架構獨特，數碼廣播同時向服務供應商及終端用戶提供雙方均可受惠的解決方案。借助數碼廣播，有線電視營運商可擴大頻寬利用率，最大限度地增加盈利，同時向終端用戶提供更優質、更豐富的內容。

*China currently has over 100million CATV subscribers. This is larger than the 60 million subscribers in the United States, and the 50 million subscribers in Europe. In addition China's cable network is comprised of over 300,000 kilometers of laid cable.*

*目前，全中國共有超過一億有線電視家庭用戶。這個數字已超過美國的六千萬用戶及歐洲的五千萬有線電視家庭用戶。此外，已鋪設的中國有線網絡電纜長度超過三十萬公里。*

### *Cable industry as a government-run utility*

China's current cable infrastructure was primarily put in place by the government as a tool through which it could communicate with its citizens and distribute its messages. Subscription fees that cable operators are able to charge for analog transmissions are fixed by the government at between RMB 8-12 per month and may not be increased. Subscription charges of RMB 8-12 per month are among the cheapest fees in the world, even lower than in India. Furthermore, analog subscription fees are to cover the maintenance of the cable infrastructure and the transmission fees. Operators are unable to charge according to the quality and range of content shown over analog transmissions. Only by the cable operators offering an alternative to the analog service, may the cable operators charge additional subscription fees and charge according to the content received by the subscriber.

Compounding the low subscription fee problem, subscription fees are collected manually, which results in high leakage and expensive collection costs. As a result, the CATV operators operate on very thin margins and rely heavily on advertising revenues to supplement their incomes. DVN's billing and payment system enables CATV operators to collect subscription fees electronically through a link up with the subscribers' banks eliminating the need for door-to-door fee collection.

### *Excessive dependence on advertising fees in a very fragmented industry*

Up until the introduction of the digital services, cable operators have been largely dependent on advertising revenues but these revenues are not large as advertisers only pay for the viewers in the cable operators' catchment areas. The cable industry in China is very fragmented with over 200 cable television operations in China. Each station is usually managed and financed autonomously by the local government, the local SARFT branch and the local communist Party committee. As a result of this structure, the actual numbers in each catchment area is not that large creating inefficient operations as well as limited economies of scale.

The government, recognizing these inefficiencies, is working to reorganize the networks and consolidate the industry at provincial levels. The provincial stations would be responsible for purchasing and creating content while municipal operators would only be re-broadcasters. However, the municipal operators still maintain control over the last mile and as a result enforcing the consolidation has been slow.

DVN's digital broadcasting system enables the CATV operators to offer alternative digital services to the current analog TV service, which increases the service providers recurring income and diversifies its revenue sources to new, higher value added interactive digital services.

### 有線電視業屬政府經營的公用事業：

中國現有的有線基礎設施主要由政府鋪設，作為政府與廣大市民交流及傳播資訊的工具。有線營運商就模擬廣播收取的用戶費由政府規定，每月為8-12元人民幣，不得擅自提價。每月8-12元人民幣的用戶費屬全球最低有線收費之一，甚至低於印度之收視費。此外，模擬電視用戶費還包括有線電視基礎設施保養費及傳輸費。營運商無法按照模擬廣播的質量及內容類別進行收費。有線營運商只有透過提供模擬服務以外的服務項目，才可收取額外用戶費，及按用戶接收的內容收費。

除用戶費低廉外，用戶費還需人工收集，導致漏收費問題嚴重，收集成本高昂。結果導致有線電視營運商邊際利潤微薄，嚴重依賴廣告收益彌補收入。透過天地數碼的結算及付款系統，有線電視營運商可與用戶之銀行建立聯繫，採用電子化方式收取用戶費，替代挨門挨戶收取費用的方式。

### 行業嚴重分散且過度依賴廣告費用：

直至推出數碼服務前，有線營運商過度依賴廣告收益。但由於廣告商僅就有線營運商覆蓋地區內的觀眾支付廣告費，因此廣告收益並不可觀。中國的有線電視行業嚴重分散，共有逾2百家有線電視營運商。各電視台通常由當地政府、廣電總局當地分局及當地黨委機構自主管理及提供經營資金。有鑑於此架構，各覆蓋地區的實際用戶數量有限，導致行業經營效率低，經濟規模有限。

政府已認識到該等架構的不足，正致力重組有線網絡，於省級層面進行整合。省級電視台負責購買及編製內容，而市級營運商只進行轉播。然而，市級營運商仍控制實際運營，導致整合進展緩慢。

透過天地數碼之數碼廣播系統，有線電視營運商可提供數碼服務替代現有模擬電視服務，這將增加服務供應商的循環收入，並透過新增的高增值互動數碼服務豐富其收入來源。

*China's current cable infrastructure was primarily put in place by the government as a tool through which it could communicate with its citizens and distribute its messages.*

*中國現有的有線基礎設施主要由政府鋪設，作為政府與廣大市民交流及傳播資訊的工具。*

*The analog transmissions of China's CATVs are directly received by the end-user's television set and do not require an analog set top box receiver.*

*中國有線電視模擬廣播由終端用戶的電視機直接接收，不需要安裝模擬機頂盒接收器。*

### *Lack of high quality programming*

Furthermore, because of their small size, most cable operators cannot afford to buy high quality programming and in general lack the economies of scale required to develop high quality programming. There is also no incentive to buy quality programming, as the cable operators are unable to get the investment back due to the fixed analog subscription fees as well as the low advertising revenues. Additionally, analog broadcasting does not enable targeted broadcasts to only households that are subscribing to the specific service and is unable to support encryption that inhibits unauthorized reception. DVN's digitization enables cable operators to broadcast significantly more channels offering end-users choice and flexibility. The digital platform also enables a tiered range of services to be offered with different price points targeting different user groups while maximizing subscriber numbers, all in an encrypted environment.

Additionally, advertisers pay for airtime according to how many people are watching TV. Market surveys in China are not sophisticated enough to determine which programs the viewers are watching. As such, cable operators previously only cared about the number of people watching the programs but did not care about which programs were popular and which were not. DVN's platform, through its subscriber management database, is able to provide detailed information regarding subscribers' viewing habits. This information will help CATV operators in the future better target their services for certain audiences as well as choose the type of programs desired by their subscribers.

### *Limited access to foreign capital*

China's broadcasting industry is largely closed to foreign involvement. Foreigners are restricted from operating or owning cable TV networks within China thus closing off sources of capital from outside of China. However, according to the head of China's SARFT, Mr. Xu Guang Chun, foreign firms are able to provide cable TV networks with infrastructure technology and value added services. Under DVN's current business model, DVN provides the technology and equipment required by the CATVs to run and operate digital Pay TV services.

DVN, in return for installing its platforms under leasing contracts, receives a percentage of the subscription fees collected for digital TV services broadcast over its platform. DVN also receives sales revenue from the outright sales of its platforms and from the resale of its set top boxes to Pay TV subscribers. Under this structure, DVN is legally able to obtain exposure to China's potentially lucrative broadcasting industry without contravening Chinese laws and regulations while providing equipment to cable operators without a large upfront capital outlay.

### 缺乏優質節目

此外，由於經營規模小，大多數有線營運商無力購買優質節目，普遍缺乏開發優質節目的經濟實力。而且，由於模擬用戶費固定，廣告收益低，有線營運商難以收回投資，因此缺乏購買優質節目的動力。同時，模擬廣播無法保證僅向訂購其服務的用戶傳輸特定節目，也不具備禁止非法接收的加密能力。透過天地數碼之數碼化業務，有線營運商可大大增加播放的頻道，為終端用戶提供更多選擇以及靈活性。數碼平台可按加密方式以不同價格向不同用戶群提供不同類別的數碼服務，盡可能增加用戶數量。

另外，廣告商根據觀眾人數的多寡就播出廣告的時間支付費用。中國的市場調查不夠精確，不能夠判斷觀眾正在收視的節目。因此，有線營運商此前只關注收看節目的人數，並不注重節目的受歡迎程度。透過其用戶管理數據庫，天地數碼平台可根據用戶觀看習慣提供詳盡的資料。這些資料將有助於有線電視營運商在未來更好地定位其服務觀眾對象，以及選擇各自用戶喜歡的節目。

*DVN's digital broadcasting platform provides a beneficial solution to CATV operators in the PRC by providing multiple revenue generating sources*

天地數碼的數碼廣播平台  
為有線電視營運商開辟  
多種收入來源

### 獲取外國資金的渠道有限

中國廣播業基本不允許外資參與。外商被禁止在中國經營或擁有有線電視網絡，從而封閉了國外資金來源渠道。然而，中國國家廣電總局局長徐光春曾表示，外商可向有線電視網絡提供基礎設施技術及增值服務。按照天地數碼現時的業務模式，天地數碼提供有線電視台經營數碼收費電視服務所需的技術，設備及服務。

根據租賃合約，天地數碼按合約比例分享透過其平台提供數碼電視服務廣播所征收的用戶費，作為其安裝平台的回報。天地數碼亦從銷售整合平台及轉售予收費電視用戶的機頂盒產生銷售收入。按此架構，天地數碼在中國法規容許的情況下，毋須花費大筆資金便可合法地參與中國有巨大盈利能力的廣播事業。

### *Beneficial solution to CATV operators*

Through the provision of digital services, the CATV operator is able to charge higher subscription fees and advertising charges as well as receive fee income from future T-commerce services. As such, DVN's digital broadcasting platform provides a beneficial solution to CATV operators in the PRC by providing multiple revenue generating sources, an electronic fee collection system and a highly complex encryption system that prohibits non-payers from viewing the contents as well as provides a secure on-line transaction environment.

### *Limited content under analog transmissions*

Content is limited over analog transmissions as the government mandates that a certain number of CCTV channels and local news and events channels are transmitted, leaving limited network capacity for other channels. As a result, only by digitizing the transmission are the cable operators able to optimize their bandwidth by increasing the number of channels that are transmitted and thus maximize their profitability. By utilizing channel rebroadcasts from other parts of China, local cable operators are able to take advantage of the better quality programming from other parts of China without having to pay for it and include these channels as part of the digital service. The stations, whose channels are rebroadcast, without editing, are able to claim the viewer numbers and increase advertising revenues.

Due to city cable operators, before the current consolidation trend at the provincial level, being responsible for their own programming, certain provincial and municipal TV/cable stations became famous throughout China for their programming quality, i.e. the dramas and movies produced. It is from these stations that DVN and its partner cable companies are sourcing the channel rebroadcasts. Until the digital service was introduced, most Chinese living outside of Shanghai or Beijing had no way of receiving the Shanghai sports channel and Beijing movies and dramas. The digital service is attractive as it provides consumers variety and quality content and provides the cable operators incentive to improve the content quality and variety.

### *Broad range of content at inexpensive price point*

According to published surveys, viewers want more choice and better quality content. By offering channel rebroadcasts that may have better programming than local programming or offer similar programs but at different times, the digital service provides convenience and variety with better reception. To date, DVN's increasing subscription numbers indicate that the digital service is satisfying consumer demands and needs in China.



## 有線電視營運商受惠之解決方案

透過提供數碼服務，有線電視營運商可徵收較高的用戶費及廣告費，並可從日後的電視商貿服務獲取費用和收入。因此，天地數碼的數碼廣播平台為有線電視營運商開辟多種收入來源，提供電子收費系統，配備尖端加密系統以禁止未付費用戶繼續接收內容，同時提供安全可靠的網上交易環境，為國內有線電視營運商提供高效益的解決方案。

## 模擬傳輸之內容有限

由於政府規定必須播放中央電視台各頻道節目及地方新聞及活動，導致有線網絡容量極為有限，模擬傳輸的內容受到限制。有線營運商只有使用數碼傳輸，才能有效利用頻寬，增加播放節目的頻道數量，從而最大限度地增強盈利能力。透過利用中國其他地區的頻道轉播，地方有線營運商可以利用中國其他地區的高質量電視節目，而毋須支付費用，並將其作為數碼服務的部分內容。電視台使用頻道轉播毋須編輯，可提高收視率及增加廣告收入。

在目前的省級電視台整合趨勢發生之前，由於城市有線營運商本身負責節目製作，若干省市電視/有線電視台因其高質量節目（即出產的電視劇及電影）而馳名國內。天地數碼及其有線營運商夥伴從此類電視台尋求頻道轉播。在數碼服務推出前，上海及北京以外的大部分中國居民都無法收視上海的體育頻道及北京的電影及電視劇。數碼服務向消費者提供豐富多元化的優質內容，推動有線營運商提高內容質量，因此廣受歡迎。

## 內容豐富，收費不高

公開調查顯示，觀眾需求更多的選擇及高質量內容。頻道轉播的節目內容可能比當地的節目更精彩，或在不同時間播出類似的節目，因此數碼服務豐富了節目內容，帶來極大方便，容易為觀眾接受。迄今為止，天地數碼的訂戶不斷增加，顯示數碼服務滿足中國消費者的需求。

*By offering channel rebroadcasts that may have better programming than local programming or offer similar programs but at different times, the digital service provides convenience and variety with better reception.*

*頻道轉播的節目內容可能比當地的節目更精彩，或在不同時間播出類似的節目，因此數碼服務豐富了節目內容，帶來極大方便，容易為觀眾接受。*

### DVN Installed Systems 已安裝天地數碼系統的地區



### Cable subscribers in DVN's Platform Installed Territories

天地數碼安裝平台覆蓋範圍內的有線用戶數目:

Province/Municipality 省/市	Number of Cable Households (Millions) 有線家庭用戶數 (百萬)	Sale or Lease 出售或租賃
Suzhou 蘇州	0.3	Lease 租賃
Shandong 山東	6.0	Lease 租賃
Hebei 河北	3.0	Lease 租賃
Zhongshan 中山	0.8	Lease 租賃
Wuxi 無錫	0.5	Lease 租賃
Zhejiang 浙江*	4.0	Lease 租賃 / Sale 出售
Shengli Oil Field 勝利油田	0.12	Sale 出售
Shanghai 上海	3.4	Sale 出售
Yixing 宜興	0.18	Sale 出售
Zhoushan 舟山	0.25	Sale 出售
Foshan 佛山	0.6	Sale 出售
Henan 河南	4.0	Sale 出售
Hubei 湖北	4.5	Sale 出售
Jiangying 江陰*	0.2	Sale 出售
Wuzhou 梧州*	0.08	Sale 出售
Hunan 湖南*	3.8	Sale 出售
Guangzhou 廣州*	1.2	Sale 出售
Tianjin 天津*	1.5	Sale 出售
<b>Total 總數</b>	<b>34.43</b>	

\* To conclude transactions in 2002  
計劃在二零零二年簽署

## Customers

*DVN had installed, by December 2001, digital broadcasting platforms in 19 locations throughout China, giving DVN access to over 30 million existing cable subscribers.*

DVN had also entered into leasing agreements with 5 of the CATVs under which it will receive technology support and equipment fees from the additional income derived by the CATV from the use of DVN's systems. This arrangement provides DVN access to the subscription fees collected by the CATVs for the provision of digital Pay TV services.

DVN had, previous to year 2001, sold platforms to Shanghai Broadcasting Bureau and to Shengli Oilfield as well as in Foshan, providing the company with cash and access to 3.5mn subscribers. DVN sold in 2001, 4 platforms in the following locations: Zhoushan, an island off Zhejiang Province, Yixing, a medium size city in Jiangsu Province and in Henan and Hubei Provinces. DVN also signed a contract in 2001 to sell a platform to the CATV operator in Jiangying, Jiangsu Province. Installation of the platform has already begun and is expected to begin operation in 2002. While these contracts do not allow DVN a share of the percentage of the subscription revenues, DVN does realize revenues from the sale of set-top boxes to subscribers, the provision of content, and maintenance fees.

## 客戶

截至二零零一年十二月，天地數碼已在中國十九個地區安裝了數碼廣播平台，覆蓋超過三千萬現有有線電視用戶。

十九家有線電視台中，天地數碼已與其中五家訂立租賃協議，據此，天地數碼可從有線電視台使用天地數碼系統產生的額外收入中收取技術支援費及設備租賃費。透過此項安排，天地數碼可分享有線電視台提供數碼收費電視服務所收取的用戶費。

從開展數碼業務至今，天地數碼已向上海廣播局、勝利油田及佛山售出平台，增加收入並覆蓋額外三百五十萬用戶。天地數碼於二零零一年在下列地區售出四個平台：浙江省舟山市、江蘇省宜興市以及河南與湖北省兩個地區。天地數碼亦於二零零一年簽訂合約，向江蘇省江陰市有線電視營運商出售一個平台。該平台已開始安裝，預計在二零零二年內開始營運。儘管天地數碼不能藉此等銷售協議分享一定比例的收視費，但天地數碼可從向用戶出售機頂盒、提供內容及技術支持獲得收入。

digital  
broadcasting  
platforms

數碼廣播平台

*DVN in April 2002 set up a RMB90 million JV with one of China's largest, fastest growing consumer electronic manufacturers to enhance competitive advantages and further penetrate the China market*

DVN in April entered into a 50:50 joint venture agreement with Jiangsu Hongtu High Technology Co., Ltd. ("Hongtu"), a Shanghai Stock Exchange listed company, in which Hongtu and DVN will each contribute RMB45 million in cash to be used for marketing of digital broadcast services and equipment and for the purchase of relevant equipment from DVN. The new company, to be called Jiangsu Hongtian Broad Communication Company Ltd., will initially focus on developing digital TV services in selected areas where DVN has already installed its digital broadcasting platforms but where digital services have yet to commence. The JV will also consider new markets where DVN has not yet installed its platforms.

This joint venture will provide DVN a new financial and strategic partner, which has strong marketing and production expertise as well as excellent government connections due to the large stakes of Hongtu owned by multiple government related entities. Furthermore, Hongtu's consumer electronic manufacturing excellence, just-in-time delivery schedules and high quality control throughput will result in superior set top boxes for the Chinese consumers at cost competitive levels.

The focus of the JV will be to expedite the rollouts of digital TV services in high potential locations where digital TV services have yet to commence operation leveraging the strengths of each partner, DVN's extensive network of installed digital broadcasting platforms and Hongtu's consumer electronic expertise. Furthermore, as Hongtu will manufacture all the set top boxes for the JV's territories, Hongtu will provide very favorable set top box financing terms to the JV. This arrangement allows DVN to further penetrate the Chinese market and broaden its geographic scope while limiting its downside exposure as well as cash requirements.

二零零二年四月天地數碼將與中國最大、發展最快的消費電子製造商之一建立一個投資額為人民幣九千萬元的合營公司，以增強競爭力，滲透中國市場

天地數碼已與上海股票交易所之上市公司江蘇宏圖高科技有限公司（“宏圖”）簽訂協議，建立雙方各佔50%權益的合營公司。宏圖及天地數碼將各自向該合營公司注入四千五百萬元人民幣之現金，用作數碼廣播服務及設備之市場推廣資金及向天地數碼購買有關設備。新公司擬定名為江蘇宏圖天寬頻視訊有限公司，其首要步驟是側重在天地數碼已安裝數碼廣播平台但未開展數碼服務之地區拓展數碼電視服務，亦有意發展天地數碼尚未安裝數碼廣播平台的地區。

該合營公司為天地數碼帶來新的財務及策略合伙人，該等合伙人不但擁有雄厚的市場推廣及生產專業知識，同時又因多家具政府背景之實體擁有宏圖大批股份而具有良好的政府關係。此外，宏圖在消費電子產品方面擁有一流的製造技術、及時無誤的產品交付計劃及嚴格的質量控制，必定能夠生產出質素超卓、在中國市場上具成本競爭力的機頂盒。

憑藉各合伙人的雄厚實力、天地數碼覆蓋廣泛的已安裝數碼廣播平台及宏圖在消費電子方面深厚的專業知識，該合營公司必將促進數碼電視服務於尚未開始此項業務但具巨大市場潛力之地區的市場拓展。此外，由於該合營公司覆蓋地區所需全部機頂盒將會由宏圖製造，宏圖自然會向該合營公司提供極為優惠之財務條款。該種安排既有利於天地數碼進一步拓展中國市場，擴大地理覆蓋範圍，又有利於控制下游市場風險，減低現金需求。

*DVN set up a RMB 90 million JV with one of China's largest, fastest growing consumer electronic manufacturers to further penetrate the China market.*

天地數碼將與中國最大及發展最快的消費電子製造商之一建立合營公司，投資額為人民幣九千萬元，以滲透中國市場。

DVN, in forming the JV with Hongtu, completes the set top box supply chain. DVN's JV with Hongtu will make it the first company that provides digital media services to tie up with a large consumer electronics manufacturing concern in China. This follows DVN's tie-up with Nasdaq-listed Zoran Corporation, a major chip supplier for consumer electronic products, in particular DVD players and digital cameras, through its HK\$39 million investment in DVN in March 2002. Together the three companies will create a total supply chain for digital set top boxes, with DVN providing the design and technology, Zoran the chip set and Hongtu the manufacturing. The collaboration of the three companies will provide to Chinese consumers high quality, tailor made, multi-functional set top boxes at cost competitive levels while also enabling fast response times to changes in the market and in consumers' taste and demands.

Hongtu is involved in the development, manufacturing and distribution of computers, software, network equipment, DVD players and other communication products and is one of DVN's OEM manufacturers of its set top boxes. Hongtu sells its products throughout China as well as worldwide, in particular the European, American, Australian and New Zealand markets. Hongtu had sales of RMB 2.0 billion in year 2001 and as of December 31, 2001, its total assets were RMB 2.4 billion.

Zoran is a world-leading provider of chip sets for DVD and digital camera applications. Zoran was among the first companies to realize the potential of the DVD and the digital camera markets by leveraging its audio and video expertise to develop and sell feature-rich, cost effective chip sets to leading consumer electronics manufacturers. Zoran's chips provide audio and video to over 25 million homes worldwide, with 80% of its revenues coming from OEMs in Japan, China and APAC.



天地數碼藉與宏圖建立合營公司，成功地構造一個完整的機頂盒供應鏈，而該合營公司則成為業內與中國大型電子製造公司結盟的首家數碼媒體服務供應商。之前，天地數碼已與納斯達克上市的Zoran Corporation結盟。Zoran是消費電子產品尤其是DVD放影機及數碼相機等產品的主要晶片供應商，該公司在二零零二年三月向天地數碼投資39,000,000港元。三家公司完美結合，構成一個全方位的機頂盒供應鏈，其中天地數碼進行設計並提供技術，Zoran提供晶片，宏圖則進行製造。三家公司聯合，定能對市場變化、客戶品味及需求作出快速反應，從而精心提供高質素、具成本競爭力並切合中國市場需求的多功能機頂盒。

宏圖從事電腦、軟件、網絡設備、DVD放影機及其他通訊產品的開發、製造及銷售，乃天地數碼採用之其中一間原設備機頂盒製造商。宏圖之產品行銷中國及全球各地，尤其歐洲、美洲、澳洲及紐西蘭市場。宏圖二零零一年之銷售額為二億元人民幣。於二零零一年十二月三十一日，宏圖之總資產為二億四千萬元人民幣。

Zoran是世界領先應用於DVD及數碼相機應用程式之晶片生產商。Zoran是首先利用其音頻及視頻專長，開發及向主要的消費電子製造商銷售富有特色、具有成本效益之晶片，實現在DVD及數碼相機市場獲利的公司之一。Zoran的現有晶片業務為全球逾二千五百萬家庭用戶提供音頻及視頻服務，而Zoran的收入中有80%來自日本、中國及亞太地區的OEM廠商。

*DVN completes the set top box supply chain through strategic alliances with Zoran and Hongtu.*

*天地數碼藉與Zoran及宏圖建立策略聯盟，成功地達成一個完整的機頂盒供應鏈。*

### *10 commercially operable locations offering digital services*

DVN already has ten platforms commercially operable and running with over 10 million analog subscribers in these locations. DVN's platforms are fully operational in three cities in Hebei Province and two cities in Shandong Province, Henan Province, Suzhou, Zhongshan, Wuxi, Shengli Oil Field, Yixing, Foshan and Zhoushan cities. Over DVN's platforms both basic digital and premium Pay TV services as well as financial and news data are offered.

Within the first 11 months ending November 30, 2001, DVN had sold around 4,700 set top boxes throughout China; within December due to the commencement of digital services in Suzhou, sales increased to 4,300 set top boxes for the month. By the end of March 2002, the number of households receiving digital broadcasts amounted to over 20,000 and subscribers for which DVN receives a percentage of their subscription fees was over 14,000. Within four months from the end of November to the end of March after the introduction of basic digital services, cumulative sales of set top boxes more than doubled. DVN believes that the last four months are the beginning of substantial growth for the Company and expects subscriber numbers to continue to increase in 2002 as sales networks are expanded and digital services are rolled out in new locations.

### *Future Prospects*

Due to the favorable response to digital services in Suzhou and variations thereof in Zhoushan, Yixing and Zhongshan, DVN will launch basic digital services in conjunction with its partners in multiple new cities going forward. The benefits of basic digital services are that transmissions do not require a license and may begin as soon as the necessary infrastructure is put in place. Additionally, basic services are at a more acceptable price point allowing faster penetration of digital services and greater sales of DVN's set top boxes.

## 十個地區之數碼服務開展商業運營

天地數碼已有十個開展商業運營的平台，覆蓋該等地區一千多萬模擬電視用戶。天地數碼於湖北省三個城市、山東省兩個城市、河南省、蘇州、中山、無錫、勝利油田、宜興、佛山及舟山市之平台已全面運營。透過天地數碼平台提供之服務包括基本數碼服務、專業收費電視服務、以及財經、新聞及數據服務。

截止二零零一年十一月天地數碼在全國共售出約4,700個機頂盒。由於十二月份開始在蘇州提供數碼服務，十二月份機頂盒銷售量增至4,300個。截至二零零二年三月底，接收數碼廣播之家庭用戶數量超過20,000個。天地數碼有權分享用戶費之用戶人數逾14,000戶。於推出基本數碼服務後四個月內（十一月底至三月底），機頂盒累計銷售量增長超過二倍。天地數碼相信，過去四個月是該公司大幅增長的開始，且鑑於銷售網絡擴大，並將會在新地區開展數碼服務，預期二零零二年用戶數量將持續增長。

## 未來前景

由於蘇州之數碼服務反應良好，及舟山、宜興及中山之反應亦同樣滿意，天地數碼將與其夥伴合作，以最快速度於其他城市推廣基本數碼服務。基本數碼服務之優勢在於播放節目無須獲發牌照，只需必要的基礎設施就位，即可開通。此外，基本服務的價格易被用戶接受，有助於加快數碼服務滲透，增加天地數目機頂盒的銷售量。

*By the end of March 2002, over 20,000 households were receiving digital broadcasts over DVN's digital platforms.*

截止二零零二年三月底，已有超過二萬家庭用戶透過天地數碼平台接放數碼廣播服務。

## Employees and Offices

As of March 31, 2002, DVN had 363 employees, including 143 in engineering and research and development. Of the 363 employees, 42 are stationed in Hong Kong and are responsible for corporate activities, capital management, research and development strategy and planning, financial control and policy, operational strategy, marketing direction and business development. In addition to DVN's offices in Beijing, Shanghai, Suzhou, Jinan, Zhongshan, Hangzhou and Shenzhen, during 2001, DVN opened 4 new offices in Shijiazhuang, Baoding and Qinhuangdao, Hebei Province and in Wuxi, Jiangsu Province, in order to provide technical and operational support to the local CATV operators. DVN also established a new research and development facility in Shenzhen during year 2001.

## Competitive Advantages

### *Most complete digital broadcasting system using advanced technologies at the lowest price*

DVN's competitive advantages are numerous and as a result there are very few real competitors. DVN provides an end-to-end, totally integrated, Chinese language digital broadcasting platform. This platform includes a conditional access system, subscriber management system, a billing and payment system as well as the middleware applications. Additionally, DVN develops applications specifically tailored to the operations of the CATV operator so that each platform is unique to the characteristics of the local market. Most competitors, whether domestic or international, provide only a part of the entire platform, either hardware or software. As a result, the cable operator must spend time and resources to source various parts of the platform from different vendors and then spend additional time and resources to integrate and manage the disparate parts. Additionally, most foreign competitors simply create a Chinese version of applications that have been developed for foreign markets and as a result do not address the unique characteristics of the Chinese market. DVN's fully integrated, end-to-end platform, as a result of using primarily in-house developed technology, is extremely cost effective and thus suitable for China's level of economic development.

### *Received all required government approvals*

Additionally unlike DVN's set top boxes and technology, many competitors' set top boxes and/or technology have not received government approval for use by CATVs. DVN's set top boxes, conditional access technology and middleware applications are all in compliance with standards put forth by the Chinese government and have been certified.

## 員工及辦事處

截至二零零二年三月三十一日，天地數碼共有363名員工，包括143名工程人員及研究開發人員。363名員工中有42名常駐香港，負責企業活動、資金管理、研究開發、制定策略及計劃、財務管理及策略、營運策略、市場推廣及業務發展。除天地數碼在北京、上海、蘇州、濟南、中山、杭州及深圳所設辦事處外，於二零零一年內，天地數碼又在河北省的石家莊、保定及秦皇島以及江蘇省的無錫設立新的辦事處，為當地有線電視營運商提供技術及營運支援。天地數碼亦於二零零一年在深圳新設一間研究開發中心。

## 競爭優勢

*天地數碼以低廉的價格，為有線電視營運商提供完備、先進的數碼廣播平台*

天地數碼的競爭優勢不勝枚舉，真正的競爭對手很少。天地數碼提供端對端式全面解決綜合中文數碼廣播平台。該平台包括有條件接收系統、用戶管理系統、結算及付款系統、以及中介軟體應用程式。此外，天地數碼特地為有線電視營運商之運作開發度身定制之應用程式，以令各平台符合當地市場之特色。由於國內及國外的競爭者僅提供整套平台的一部份硬件或者軟件，有線營運商不得不投入大量時間及資源，從不同供應商購買平台的各個部份，然後耗費相當時間及資源將各個部份組裝成一個整體。此外，多數外國競爭對手僅僅將其已為國外市場開發的應用程式制作一個中文版本，並未符合中國市場的特色。天地數碼的端對端綜合平台主要應用內部開發的技術，成本低，效益高，適合中國經濟發展水平。

### *獲得所有必要的政府批文*

天地數碼的機頂盒及技術已獲得所有必要的政府批文，可供有線電視台使用。而多家競爭者的機頂盒及/或技術尚未獲得政府批准提供給有線電視台使用。天地數碼的機頂盒、條件存取技術及中介軟體應用程式均符合中國政府提出的標準，並已獲認證。

*DVN provides an end-to-end, totally integrated, Chinese language digital broadcasting platform.*

天地數碼提供端對端  
綜合中文數碼廣播平台  
全面解決方案。

### *On the ground, extensive local support and engineering teams*

Additionally to be a real competitive force, a competitor needs critical mass to provide support services, both before and after installation. DVN offers support to the cable operators in terms of system integration, marketing and operational teams, technical support and content. Most foreign competitors do not have teams on the ground offering after sales support to the cable operators.

### *Pioneer of digital broadcast technology in China*

DVN also has extensive experience in working with CATVs resulting in the creation of operating systems that are perfectly suited for the business environment faced by Chinese cable operators. DVN has tailor made its middleware system, billing and payment systems to suit the needs of Chinese CATVs. DVN was the first company in China to develop a complete CA system and has received all the government approvals for the deployment of its CA system throughout China. It was also the first developer of a middleware system in China using all its own technology as well as the first developer of a java-based set top box.

### *Technology specifically designed for the China market*

The barrier faced by most foreign competitors is that their technology while suitable for the European or American markets is not suitable for the Chinese market and is very expensive given the level of subscription fees that are acceptable to Chinese consumers. DVN maintains over a 100 person strong research and development team within China that is developing technology and solutions specific to the China market and its unique structure and characteristics.

### *10 Locations already commercially operable*

Another major barrier to entry is that DVN has already installed 19 platforms in China's richest and most developed regions under exclusive contracts for terms of 10 to 15 years. Digital services are already commercially operable in ten locations. There are very few other platforms installed outside of DVN's that are commercially operating in China.

## 強大的地方支援及工程隊伍

除需具備強大的競爭實力外，競爭者還需設立完備的執行隊伍，提供安裝系統之前及售後的支援服務。天地數碼在多個地區設有執行隊伍，向有線電視營運商提供有關係統集成、市場推廣及營運、技術支援及內容方面的支援服務。大多數國外競爭者在國內並無設立專為有線電視營運商提供售後支援的執行隊伍。

## 中國數碼廣播技術先驅

天地數碼與中國有線電視營運商廣泛合作，因而創製出完全配合中國有線營運商業務環境的操作系統。天地數碼按照中國有線電視營運商的需求為其度身定制中間軟件系統，結算及付款系統。天地數碼乃中國首家開發完整之有條件接收系統的企業，並已獲得在中國各地裝設其有條件接收系統所需的所有政府批文。同時，天地數碼也是中國首家利用本身技術開發中間設備的開發商，並是首家基於Java技術的機頂盒開發商。

## 專為中國市場設計之技術

大多數國外競爭者面對的一大障礙是其擁有適合歐美市場技術，但卻不適合中國市場。此外，相對於現時中國消費者所付出之用戶費，國外競爭者的技術成本較高昂。天地數碼於中國之研發隊伍計有100多名成員，實力雄厚，專事開發適合中國市場及其獨特架構與特點的技術及解決方案。

## 十個地區已開展商業運營

競爭對手的另一個進入障礙是天地數碼已在中國最富庶、最發達的地區安裝19個平台，並簽立為期10至15年的獨家經營合約。數碼廣播服務已在十個地區開展商業運營，而其他同類形已安裝並已開展商業運營的平台卻為數不多。

*DVN was the first company in China to develop a complete CA system and has received all the government approvals for the deployment of its CA system throughout China.*

天地數碼乃中國首家開發完整有條件接收系統的企業，已獲得所有政府批文在中國各地裝設其有條件接收系統。

## Future Plans and Strategies

### *Maintain first mover advantage and achieve rapid penetration*

The favorable response to the introduction of basic digital services in Suzhou and variations of basic digital services in other locations indicates that DVN's model to penetrate the Chinese market is correct. Chinese consumers want a low priced, broad range of content digital service. DVN will expand upon its success in Suzhou and elsewhere, introducing basic digital services in locations where its platforms are already installed. It will also work with its cable partners to establish extensive points of sales networks to rapidly penetrate the targeted locations. DVN believes that converting as rapidly as possible analog subscribers to digital using DVN's standards and set top boxes will maintain its first mover advantage as well as further strengthen the already existing barriers to entry.

### *Focus on China's Richest and Most Populous Regions*

DVN will focus on rolling out, in conjunction with its CATV partners, basic digital services in China's richest and most populous regions. In particular, DVN will focus on major cities within Jiangsu, Zhejiang, Hebei, Shandong and Guangdong Provinces. In areas that are too small to support an investment by DVN, digital broadcasting systems will be sold outright such as in Jiangying and Yixing cities.

### *Provide excellent, broad ranged support and services to CATV operators to maintain and protect relationships*

As CATV operators have a monopolistic position within their territories controlling the last mile access, it is important that DVN maintains good relationships with them. DVN provides technical, after sales and marketing support through on the ground, local offices staffed by DVN employees. DVN will also continuously look to increase and improve its library of content so that the digital services continue to be attractive to mainland audiences. DVN will further strengthen its local offices to better monitor and evaluate the effectiveness of market promotions and market strategy. DVN's offices will be responsible for further customer research and feedback to ascertain product mix and pricing and to make recommendations.

### *Focus on channel mix and pricing*

Currently in China, most viewers are interested in movies and drama content. Cultural, history, scientific and other entertainment categories have more specific target audiences that are able to accept different price points. DVN going forward will emphasize movie and drama channels to drive subscriber numbers while targeting specific end-user groups with more specialized offerings. DVN will also focus on enhancing the range of movie and drama content shown on the various channels to ensure viewer satisfaction and superiority to analog content.

Lastly DVN will further promote its on-line stock and financial news services through further education of consumers as well as price competitiveness over PC based services.



## 未來計劃及策略

### 保持先行優勢，快速擴大市場滲透率

在蘇州推出的基本數碼服務及於其他地區推出的多樣化基本數碼服務反應良好，證明此為天地數碼滲透中國市場的正確模式。在此階段，中國消費者要求收費低廉、內容豐富的數碼服務。天地數碼將推廣其於蘇州及其他地區的成功業務模式，在已安裝其平台的地區推出基本數碼服務。此外，天地數碼將與有線營運商夥伴合作，建立廣泛的銷售網點，快速滲透目標市場。天地數碼相信，使用天地數碼技術標準及機頂盒，儘可能快速推動模擬電視用戶轉為數碼電視用戶，將有利於天地數碼保持先行優勢，進一步加防備競爭者進入市場。

### 側重中國最富庶、人口最稠密的地區

天地數碼與有線電視夥伴合作，側重在中國最富庶、人口最稠密的地區開展基本數碼服務，尤其側重江蘇、浙江、河北、山東及廣東省的主要城市。對於地域過小，不足以支持投資的地區而言，天地數碼將向其出售數碼廣播系統（如江陰、宜興）。

### 為有線電視營運商提供多項完善的支援及服務，以保持良好的關係

鑑於有線電視營運商在其所屬地區佔據壟斷地位，控制地方廣播業，因此天地數碼與其保持良好關係極為重要。天地數碼在各地設立辦事處，其專業人員負責提供技術、售後服務以及市場推廣支援。天地數碼亦將繼續改善及豐富其數據庫內容，增加數碼服務對國內觀眾的吸引力。天地數碼將進一步增強地方辦事處，以妥善監管及評估市場推廣及市場策略之有效性。天地數碼辦事處將負責收集顧客調查資料及回應，以確定產品組合及定價之合理性並提出建議。

### 側重節目播放組合及定價

目前，大多數中國觀眾對電影及電視劇興趣濃厚。文化、歷史、科技以及其他娛樂節目擁有不同類別的觀眾，可接受不同檔次的收費。天地數碼將繼續側重電影及電視劇等娛樂性節目，以吸引更多用戶，並就特定終端用戶群提供更具針對性的節目。同時，天地數碼將擴充不同頻道內容的範疇，以確保觀眾滿意度，並鞏固數碼電視內容的優勢。

最後，天地數碼將加大宣傳力度，利用數碼電視比個人電腦優勝的價格優勢，進一步推廣在線股票及財經新聞服務。

*DVN provides technical, after sales and marketing support through on the ground, local offices staffed by DVN employees.*

天地數碼在各地設立辦事處，其專業人員負責提供技術、售後服務以及市場推廣支援。

### *Build upon existing basic digital services base to upgrade subscribers to higher value added services*

By offering basic digital services to subscribers at a low price entry point, there is minimal resistance to upgrading to digital TV from analog. Once subscribers feel more comfortable with the digital technology and its capabilities, basic services may be used as a springboard to upgrade subscribers to higher value added services that are more profitable to the CATV operator and thus DVN. Such services will include VOD, distance learning, on-line gaming, on-line stock trading, home banking, interactive advertising that enables instant audience response, direct-to-home market research and other T-commerce applications, to name a few.

### *Maintain DVN's technical advantage and cost competitiveness*

DVN will continue to offer technically advanced systems at very low prices by taking advantage of China's low cost, but highly educated labor force as well as its two new strategic partners, Zoran and Hongtu to further strengthen DVN's competitive advantages as well as ensure the creation of broadcasting technology and digital receivers that are uniquely tailored for the China market. DVN currently has over 140 full time employees committed to engineering and product development largely in China as well as some in Hong Kong. Such a large R&D force located in China will also allow DVN to continue to take advantage of the perception that it is a local company and not a foreign one, which allows it to participate in multiple steering committees with regard to formulation of Chinese standards ensuring DVN's interests are represented and protected.

### *Leverage off relationship with Hongtu and local CATV operators to further penetrate the China market*

DVN's recently formed JV with Hongtu will provide DVN with a strong local partner with substantial sales and marketing expertise. Hongtu already has well established local distribution networks that may be used to distribute DVN's set top boxes as well as collect information regarding likes and dislikes of Chinese consumers so that the digital services offered meet consumer demands. This alliance is in addition to the network of relationships DVN has already established with both the city and provincial level CATV operators. DVN will continue to focus on providing on the ground support to CATV operators in order to penetrate local markets quickly and expeditiously.

### *Additional international opportunities*

DVN's technology is not only applicable to China, but to other regions of the world, particularly to those regions looking for cost effective digital broadcasting solutions. DVN is therefore currently under negotiations to sell or lease its platform in South Korea, Taiwan, Indonesia, Philippines, and Macau. DVN has already sold one community system in South Korea and submitted tenders for digital systems in Indonesia and France. DVN is also pursuing overseas markets for the distribution of its high quality, low cost J-box.

### 利用現有基本數碼服務之基礎， 提升用戶使用高增值服務

透過以較低價格作為進入點向用戶提供基本數碼服務，儘可能減少從模擬廣播轉為數碼廣播的阻力。待用戶體驗到數碼技術及其功能的優勢後，可將基本服務作為跳板，提升用戶使用高增值服務，從而為有線電視營運商及本公司帶來更大收益。該等服務將包括VOD、遠程教育、網上游戲、網上股票買賣、家居銀行、可即時收集觀眾反應之互動廣告、直接到戶市場調研、及其他電視商貿應用程式等。

### 保持天地數碼的技術優勢及成本優勢

天地數碼將繼續利用中國的高質素但成本低廉的員工隊伍以及新增的兩個策略夥伴Zoran與宏圖，以較低價格提供具有尖端技術的系統，進一步加強天地數碼的競爭優勢，確保研製針對中國市場特色度身定制的廣播技術及數碼接收器。目前，天地數碼擁有140多名全職僱員專事工程設計及產品開發。該等人員大部份常駐中國大陸，部份在香港。位於中國之研發隊伍規模龐大，有助增強其為當地公司，並非外資企業的觀念，因此可參與當地各種項目指導委員會，制定中國數碼技術之標準，以確保天地數碼之權益得到維護及保障。

### 透過與宏圖及當地有線電視營運商之關係， 進一步滲透中國市場

天地數碼近期與宏圖建立合營公司。宏圖乃實力雄厚的當地夥伴，擅長市場推廣，銷售額可觀。宏圖已建立穩固的地方分銷網絡，可用於分銷天地數碼的機頂盒，收集有關中國消費者的資料及愛好，以便提供之數碼服務滿足消費者需求。除該等聯盟外，天地數碼已與省市級有線電視營運商建立關係網絡。天地數碼將持續側重向有線電視營運商提供基礎支援，以期能迅速地滲透當地市場。

### 開拓國際市場之商機

天地數碼之技術不僅適用於中國，也適用於世界其他地區，尤其是尋求低成本數碼廣播解決方案的地區。近期，天地數碼正在韓國、台灣、印度尼西亞、菲律賓及澳門洽商。至今，天地數碼已出售一套前端小區系統給南韓，並在印度尼西亞及法國進行數碼系統投標。天地數碼同時尋求向海外市場分銷其價廉質高的J-box。

*DVN currently has over 140 full time employees committed to engineering and product development largely in China as well as some in Hong Kong.*

天地數碼擁有140多名全職僱員專事工程設計及產品開發。該等人員大部份常駐中國大陸，部份在香港。

## Risk Management

DVN's exposure to China's broadcasting industry, which by using digital technology merges interactive data, video and audio, brings about a degree of uncertainty with unlimited potential. Due to the newness of digital broadcasting technology and its multi-faceted capabilities, the broadcasting industry's structure, services and regulations are evolving. DVN has positioned itself to take advantage of this potential while minimizing its risks. It has implemented a flexible business model that permits and rewards both proactive initiative as well as defensive maneuvers to take into account changes in the industry as it matures as well as changes in preferences of Chinese consumers. DVN also does not rely on owning the cable infrastructure for its business model to be successful but instead focuses on allying itself with the owner of the last mile. DVN will closely monitor changes in the market and will adopt a prudent and adaptive approach in order to maximize shareholders' value while providing shareholders the ability to participate in the immensely interesting and potentially lucrative digital broadcasting revolution.

*Due to the newness of digital broadcasting technology and its capabilities, China's regulatory environment and the broadcasting industry's structure and services are evolving. It is possible that future policy changes could impede DVN's operations and the enforcement of its contracts.*

DVN has structured its involvement in China to fall within the rules and regulations regarding foreign involvement in the broadcasting industry. DVN is primarily a technology provider and data and service content provider. DVN's primary business is in the upgrading of broadcasting facilities to enable digital broadcasting, an area that the Chinese government has explicitly stated that Hong Kong based companies can get involved in. The trend in China, as promoted by the SARFT, is to upgrade China's broadcasting industry from analogue to digital and DVN's technology supports this switch. In addition, two of DVN's leasing contracts and their related payment terms have been vetted by the SARFT under Hebei Provincial CATV's and Shandong Provincial CATV's license applications. All five of the recipients of Pay TV licenses issued to date use DVN's platform to broadcast digital Pay TV services.

## 風險管理

鑑於數碼技術相容互動數據、視頻及音頻，天地數碼參與中國的廣播業伴隨著相當程度的不確定因素。數碼廣播技術及各項功能發展日新月異，廣播業之發展結構、服務及管理規則亦在不斷演變之中。天地數碼已校準定位，充分利用這種潛力，同時最大限度地降低風險。天地數碼採用靈活的業務模式，兼用積極和保守措施，以適應日後行業逐漸飽和及國內顧客需求之變化。而且，天地數碼之業務模式的成功並非依賴擁有有線網絡基礎設施，反而側重與控制實際運營者建立聯盟。無論如何，天地數碼將密切關注市場變化，並以審慎、靈活的策略為股東帶來最大收益，同時，股東亦得以參與有巨大發展潛力及盈利能力的數碼廣播革命。

*數碼廣播技術及各項功能發展日新月異，廣播業之發展結構及管理規則亦在不斷演變之中，可能對天地數碼的業務營運及合約履行產生不利影響。*

天地數碼已重整其國內業務模式，以求符合外商參與廣播事業的法規及法例。天地數碼主要是技術、數據及服務內容供應商。天地數碼之主要業務為升級廣播設施、發展數碼廣播。中國政府已明確表示，香港公司可以參與以上廣播事業之領域。廣電總局目前在國內全力推動的潮流，是從模擬廣播升級至數碼廣播。天地數碼之技術順應此潮流。此外，於河北省及山東省有線電視申請牌照之時，天地數碼與其簽訂的兩份租賃合約及其相關付款系統已獲廣電總局批核。迄今已獲發收費電視牌照的五個有線電視台均使用天地數碼的平台提供數碼收費電視服務。

*There is no guarantee that all of the CATV operators, which have installed DVN's system, will receive the necessary license for Pay TV broadcasts.*

DVN's leasing contracts with its other partners largely have the same terms and conditions to the contracts already vetted by the SARFT under Hebei Provincial CATV's and Shandong Provincial CATV's license applications. As such DVN believes that its other partners should be able to obtain the required broadcasting licenses without much trouble.

In the meantime, however, experience has shown that basic digital services, which include satellite rebroadcasts of channels from other parts of China and do not require a Pay TV license, are currently more popular than premium Pay TV services due to the low price and range of content. Therefore DVN believes that under the basic digital business model, it will be able to convert analog subscribers to digital services at a faster rate than with premium Pay TV services. Only once China's consumers are familiar with digital broadcasts and its capabilities will a large number of consumers be ready to upgrade to the higher value-added service of premium Pay TV which includes VOD, on line stock trading and other T-commerce applications.

*As new technologies are involved, there may be delays in the implementation and roll out of the digital broadcast services.*

DVN's system has been fully tested and is now operational in ten locations throughout China. As such even though there may be minor installation difficulties in other locations, DVN does not expect any major obstacles.

不能保證所有已安裝天地數碼系統的有線電視營運商均可獲得所需的收費電視廣播牌照。

天地數碼與其他合作夥伴訂立之租賃合約，與在河北及山東省申領牌照時獲廣電總局審核通過之合約條款及條件相約。因此，天地數碼相信，其他夥伴亦應可順利取得必須的廣播經營牌照。

基本數碼服務包括衛星轉播中國其他地區頻道的節目，此項服務無需收費電視牌照。據經驗顯示，目前基本數碼服務因價格低廉及內容豐富，因而較專業收費電視服務更受歡迎。因此，天地數碼相信，按基本數碼業務模式，由模擬用戶轉為數碼廣播服務之速度應大大超過專業收費電視服務之速度。當一般中國的消費者接受並熟悉數碼廣播及其功能後，將有大量消費者升級使用高增值專業收費電視服務。專業收費電視服務包括視頻點播、在線股票買賣及其他電視商貿應用。

由於涉及高新技術，可能延遲實施及開展數碼廣播服務。

天地數碼之系統已通過全面測試，目前已在中國十個地區運營。因此，即使在其他地區可能出現少許安裝困難，天地數碼預期不會出現任何重大障礙。

*Due to the infancy of the digital broadcasting industry and its related services, new technologies may be developed that could replace that of DVN*

DVN has put in place a multi-pronged approach to ensure its technology remains at the forefront of international technical developments as well as meets the demands and requirements of Chinese consumers and service providers. DVN has focused and will continue to focus on forging strategic alliances with the world's leaders in digital technology and consumer electronic products. DVN also maintains a strong research and development focus with over one-third of its staff committed to research, product development and engineering. Lastly, DVN maintains close working relationships with multiple divisions within and at different working levels of China's SARFT. This ensures that DVN is aware of the technical direction in China, the requirements of the various involved government authorities as well as the technical standards currently existing and expected to be enacted. Such a multi-pronged approach allows DVN to be proactive and not reactive providing a system that is not only suitable to the unique characteristics of the China market but also technically advanced and at the forefront of technical developments.



## 由於數碼廣播業及有關服務處於起步階段，有可能為新興技術取代

天地數碼已採取多方位策略，確保其技術水平走在世界尖端，同時又能滿足中國消費者及服務供應商的多方索求。天地數碼已成功地並將繼續致力尋求與全球數碼技術及消費電子產品翹楚結成聯盟。天地數碼亦堅持不懈地維持強大的研發力量，從事研究、產品開發及設計員工逾總人數三分之一。而且，天地數碼與中國廣電總局多個部門積極維持各種層次的工作關係，此舉有利於天地數碼及時了解中國技術發展趨勢、各級有關政府部門的要求以及現有及預計將頒佈的技術標準。該等多方位策略令天地數碼搶佔先機，先行一步，提供適應中國市場特點並與最新技術保持同步的尖端發展步伐。

*There is no guarantee that subscribers will subscribe to the new digital services*

Chinese incomes are significantly lower than in the more developed countries. Therefore, there may be resistance by many subscribers to paying for the set-top box and to higher subscriber fees in order to receive digital services.

However, there is clear evidence that Chinese are willing to pay for expanded entertainment options. Within three months after the introduction of basic digital services in Suzhou, sales of set top boxes approximately doubled. Furthermore, DVN's total number of subscribers for which it receives a percentage of the subscription fees increased from over 4,600 at the end of November 2001 to over 14,000 at the end of March 2002, over a three fold increase, due to the continued expansion of DVN's digital service offerings throughout China.

*不能保證用戶將訂購新興數碼服務*

中國的居民收入遠低於其他發達國家。因此，很多用戶可能拒絕就使用數碼服務購買機頂盒，或支付較高的用戶費。

然而，事實表明，中國消費者願意為獲得更多娛樂項目支付費用。在蘇州推出基本數碼服務後三個月內，機頂盒銷售量增長約一倍。此外，由於天地數碼在中國各地供應之數碼服務持續擴展，天地數碼可分享用戶費之用戶總數由二零零一年十一月底的4,600多戶增至二零零二年三月底的逾14,000戶，增幅逾3倍。