Tom Daily glanced at the black box sitting on his desk. The simple design of the box, with just a few gray knobs and dials on the outside, gave little indication of the power of technology inside. Daily had joined Dolby in 1998 to lead marketing for the company’s broadcast division. Dolby had led the development of noise reduction technology in both the film and music industries and in 1992 decided to enter the TV broadcast market with its latest technology, Dolby Digital. By 2002, the company had succeeded in placing Dolby Digital in over 33 million TV set-top boxes worldwide through licensing agreements and had convinced most major networks to encode their programs for Dolby Digital using Dolby E technology. In addition to overseeing sales of Dolby E technology to the professional audio market, Daily managed marketing for 13 broadcast-related products at Dolby. In April 2002, Daily’s attention was focused on developing new products to help TV broadcasters and cable providers further enhance the sound experience for TV viewers.

One engineer’s answer to Daily’s request for new products was the black box sitting on Daily’s desk, dubbed the LM100. Jeff Riedmiller had spent 9 months in development, building the box, which would enable cable broadcasters and others to measure and equalize loudness across different TV channels. The issue of loudness inconsistency had been raised by industry standards groups, which had in turn developed a set of complex algorithms to help broadcasters manage the problem. However, until now, no company had developed a single piece of equipment that could apply these algorithms and thereby enable broadcasters to follow the industry standard. Daily’s plan was to finish developing the LM100 for a November 2002 launch date. However, as he examined the box, he wondered whether the loudness issue was a serious pain point for cable providers and other broadcasters. The technology would clearly benefit end users. The question was, who would pay for it?
Dolby Laboratories: History

Dolby Analog

Dolby Laboratories was founded in 1965 by Ray Dolby, who set out to develop noise reduction systems for the music industry. Armed with a BS in electrical engineering and a Ph.D. in physics, Dolby succeeded in developing a sophisticated new form of audio compression and expansion that significantly reduced background hiss in professional tape recording. The company decided to manufacture the new “Dolby A” system itself and market it to record companies. The success of this first product paved the way for Dolby’s close relationships with media producers, which remains an asset to the firm today.

Dolby’s next technological development was Dolby B, a noise reduction system that was incorporated into tape recorders and marketed to consumers. Dolby B was first licensed to KLH Research and Development, a manufacturer of home hi-fi equipment, for incorporation into open-reel tape recorders. This was the first time Dolby had licensed its technology, a practice that would become standard for its decoding technologies applicable to the mass consumer market. While the technology was successful, Dolby realized that open-reel recorders would likely be replaced by a less cumbersome solution. With Phillip’s introduction of the cassette tape, Dolby looked to cassette recorder manufacturers for adoption of the Dolby-B technology in their products. In 1970, Advent, Fisher, and Harman-Kardon introduced cassette recorders with Dolby-B type noise reduction technology.

As demand increased for licenses of its Dolby-B technology, Dolby found itself in a position to increase royalty fees to manufacturers. However, in a brilliant move, the company decided to keep royalty fees low and even simplify the process of procuring licenses for its technology. As Tom Daily explained, “Modest royalty rates have had much to do with the willingness of consumer electronics manufacturers to turn to Dolby Laboratories for technology and know-how.” Building on the goodwill it had established, Dolby was able to convince manufacturers to include its now famous logo on products incorporating Dolby noise reduction technology.

This successful licensing strategy has since been admired by many technology companies, including Intel, which sought Dolby’s advice before launching its successful “Intel Inside” campaign.

In 1972, Dolby introduced its first cinema product, which employed Dolby A technology to enhance sound in movie theaters using the standard mono-format. The intention was for encoding technology to be used on movie sets to convert the sound, while decoding technology purchased by movie theater operators would be used to decode the sound for playback in the theater. Initially, movie producers were concerned about the cost of releasing two versions of a film: one with Dolby; and one without, for those movie theaters that did not have the proper decoding technology. However, testing quickly proved that the sound on Dolby-encoded movies performed well even when played on standard non-Dolby equipment. Therefore, only one version was necessary. Adoption of Dolby technology picked up pace in 1975, when the company introduced a multi-channel stereo format with higher quality sound. Audiences finally “sat up and took notice” of Dolby with the 1975 release of Star Wars and Close Encounters of the Third Kind, both of which incorporated the new Dolby stereo format sound.

In 1982, Dolby introduced its Surround Sound and Pro-Logic technologies to bring the high-quality sound experience of movie theaters to “home theaters.” Market research showed that consumers were increasingly willing to invest in high-quality sound systems for their homes. Thus, Dolby decided to capitalize on this trend by enabling TV broadcasters, home video producers, and others to record their programs using the latest Dolby noise reduction technology and enabling viewers to receive or playback those programs in Dolby sound, essentially re-creating the theater sound experience at home.
Dolby Digital

During Dolby’s first 20 years, its engineers focused exclusively on developing technologies for analog recording. However, in 1984, Dolby introduced its first digital coding system, Dolby AC-1. This “perceptual coding” technology enabled analog sound to be converted into digital formats (CD, DVD, or Digital TV) without requiring excessive storage space. This was an important development in the adoption of digital media, as without such technology digital sound would have required massive amounts of storage space and would therefore have been unviable. In 1992, Dolby Digital (AC-3) was introduced for multi-channel application in film sound and digital surround sound at home. As the market was moving towards a new standard, it was critical for Dolby to achieve a meaningful market share in Digital. As of April 2002, approximately 219,588,800 products incorporating Dolby Digital technology had been sold worldwide.

In April 2002, Dolby Laboratories remained a privately held company with 550 employees worldwide and annual revenues of approximately $140 million.

Lifecycle of a TV Show

Dolby already offered a number of products to the TV audio production market, both through licensing and direct manufacturing. The company’s broad goal in this market was to enable home viewers to experience the sound as it was imagined by a TV show’s original creator. To achieve this goal, Dolby and its products aimed to play a part in each step of the production and broadcasting lifecycle. This TV production and broadcasting lifecycle could be described in four steps (see Figure 1):

Figure 1: The Television Production Lifecycle

Step #1. Content creator develops program (production) and sends to broadcaster

A television show’s producer decides on a specific audio format when creating and contacts Dolby to purchase the necessary equipment (a one-time “fixed-cost” purchase). A producer would then record the show and often outsource the encoding of the audio signal to one of many post-production facilities. Dolby’s encoding products reduced large quantities of audio data into a manageably sized
digital format for transmission. Dolby was a well-known brand in encoding equipment for these facilities. However, while there were thousands of post-production facilities in the U.S., most of which focused on commercials, there were only 55 premiere post-production facilities that consistently demonstrated a willingness to buy Dolby Digital products. Once the TV show’s sound was combined with the visual content, the production or post-production facility would send the final encoded product to broadcasters for distribution.

**Step #2. Broadcaster compiles programs and sends on to consumers**

Broadcasters included any party that delivered programming to an individual’s home television. As of January 2002, the estimated number of U.S. broadcasters, as identified by Dolby, was as follows:

- Direct Broadcast Satellite (DBS) 2
- Local TV channels/stations (e.g., ABC affiliate) 1,500
- Multiple system operators—MSOs (e.g., AT&T Broadband) 50-60
- Cable head ends controlled by MSOs 11,000

These broadcasters would receive encoded shows from producers or networks and then send encoded signals on to end customers via either airwave (antennae) or cable. Whereas local TV stations would send signals directly to a home viewer’s “rabbit ears” via the airwaves, cable MSOs sent their signals to local affiliates called “head ends” and then on to home viewers via a cable. Finally, DBS providers would send their signals directly to home viewers via satellite. Each satellite TV subscriber received signals via their individual satellite dish. Approximately 6 MSOs were estimated to control 80% of the cable head ends in the U.S., while 2 DBS companies controlled the entire satellite TV market.

**Step #3. Consumers receive signals through a set top box or antenna**

MSOs and Satellite companies both provided customers with set-top boxes to decode video and audio signals. Those companies would purchase set top boxes, built to their own specifications, from companies such as Motorola, and install them in the homes of their customers. AT&T, for example, would license Dolby decoding technology for its set-top boxes, in order to enable its customers to experience high-quality sound. In 2002, Dolby estimated that there were 33 million set-top boxes in use with a licensed Dolby chip inside. Of those 33 million boxes, tens of thousands were capable of processing sound in a stereo format, a 2-channel audio signal, while the remainder could decode the more advanced 4+ or 5.1 speaker Surround Sound format. An output jack on the back of the set-top box enabled the box to be connected directly to the receiver in a users’ home stereo system.

**Step #4. Consumers view program in their homes**

If a TV signal entered a viewer’s home via cable or satellite, it would pass through a set-top box and then, in many cases, on to the viewer’s stereo receiver. Dolby licensed their noise reduction technologies to both stereo equipment manufacturers and TV manufacturers. Therefore, if a viewer’s stereo or TV was Dolby-enabled, it could produce high-quality sound that was almost identical to that which had been created in the TV production studio. In fact, the benefits offered by Dolby technology were often considered a selling feature in the purchase of stereos and TVs. This willingness on the part of customers to pay a premium for the features offered by Dolby technology indicated to Dolby that U.S. consumers valued high-quality sound.

Unfortunately, if any stakeholder in the TV production lifecycle (producer, broadcaster, set-top box provider, home viewer) chose not participate in the purchase of Dolby products, Dolby could not
achieve its goal of providing high-quality sound to home viewers. This risk drove Dolby to develop and market products for all participants in the TV production lifecycle.

Dolby’s latest effort to expand its influence and improve sound quality throughout the television production life cycle was the LM100 Broadcast Loudness Meter.

**The LM100 Broadcast Loudness Meter**

“Set and forget the volume” was the tagline that Dolby hoped would sell the LM100 Broadcast Loudness Meter. With a planned introduction date in the fourth quarter of CY2002, Dolby had a lot of work to do to get the LM100 ready for market.

**LM100: The Technology**

For years, television viewers had complained that blaring commercials and different loudness levels across channels forced them to constantly adjust their set volume up and down. This problem was compounded in recent years as more networks converted from analog to digital feeds because the loudness levels for digital signals could not be adjusted by broadcasters.

Dolby hoped the LM100 would solve this problem by providing an accurate way to measure the subjective loudness within broadcast television programming. With a real-time, accurate measurement of loudness, technicians would be able to make adjustments to the signal feed going out to customers. Broadcasters traditionally controlled their program levels using a volume unit (VU) meter or a peak program meter (PPM), neither of which made any attempt to measure subjective loudness. The LM100 was the first stand-alone product capable of measuring the equivalent loudness of programming and presenting the results in an easy-to-understand format.

The LM100’s algorithms for measuring equivalent loudness were based upon the Equivalent Loudness Method, an open standard created by a broadcast consortium as a way to quantify average loudness levels across different types of programming. Up until the introduction of the LM100, this Equivalent Loudness Method had only been a useful standard for academics because the implementation by technicians in the field involved complicated mathematical calculations. Dolby solved this problem by incorporating this open standard algorithm along with other proprietary Dolby technology to create a user-friendly, single-box solution.

Part of the benefit of the LM100 was its “plug and play” design. It accepted any type of digital or analog signal and could easily be tuned to a specific broadcast channel. The front panel allowed operators to select an input source, program, and/or individual channels, and provided controls for pausing and resetting the measurement function.

In addition to measuring the subjective loudness of channels, the LM100 had many other value-adding features. It could measure, detect, and alert operators of possible signal problems such as silence on the line. A set of user-definable alarms and monitoring functions allowed the LM100 to inform an operator automatically of signal errors which might result in a loss of signal to cable, satellite, or broadcast television viewers.

The LM100 could simultaneously display the intended loudness level (embedded directly in the content) of a Dolby Digital program, so that it could be compared to the actual measured loudness, an important part of the quality control process for broadcasters. The front panel of the device also included LEDs for indication of fault, error, and audio alarm conditions, as well as a headphone jack with volume control. The rear panel provided a pair of RCA connectors for confidence and signal presence monitoring of the selected source. Interfaces provided remote control, status logging, and software update capabilities making it a very flexible solution for all types of users.
Demand Trends and Stakeholders

In 2002, cable was the dominant method of delivering content to television viewers. However, satellite was gaining popularity due to the extensive channel selection and potentially better viewing quality. The Television Bureau of Advertising stated that satellite penetration was 13.2% in February 2002, an increase of 3.3% from February 2001. However, cable did still possess benefits over satellite, including offering local programming and the ability to split the signal to multiple televisions without requiring additional boxes. Even with these benefits, cable operators were always looking for a way to differentiate their product and the loudness issue could play a role.

There were two major stakeholders in the TV production lifecycle who would be affected by the purchase of an LM100, but who would not make the purchase themselves: TV show creators and home viewers. The creators of television programs often desired the highest quality sound possible and were allied with Dolby in its goal of delivering their artistic vision in both sound and picture to the home user. Creators also commanded some of the highest margins in the TV production lifecycle and were, therefore, the least price sensitive. Unfortunately, they were not likely to purchase the LM100 directly, but could strongly influence demand through requests for standardization and quality control. Dolby was hopeful that TV networks would also recognize the need for volume control and drive the solution. The LM100 was well positioned to take advantage of this type of regulation with the strong Dolby brand behind it, a reasonable price, and its advantage as the first product to market. Dolby believed the creators would direct their production houses to utilize the highest quality equipment available to achieve audio consistency.

Home viewers were the other potential influencer on adoption of the LM100. Nielson Media Research estimated that in early 2002, there were 110 million households in the U.S. Of these, 68% had cable, while 13.2% subscribed to satellite TV. Dolby estimated that approximately 28% of households maintained home theater systems with 4+ speaker Surround Sound. Dolby expected that these home theater system owners and anyone receiving a digital TV signal into their home (either via cable or satellite) would drive demand to fix the uneven volume issue. A growing number of high definition television (HDTV) owners, whose TVs relied on digital audio technology, would simply add to the growing number of TV viewers who expected consistent high-quality sound from their equipment and their content providers. Some variation in estimated DTV subscribers is evident, but the consensus settles around 9% of cable users. Penetration estimates for DTV range as high as 47% by 2008.

Potential Markets for the LM100

The benefits offered by the LM100 might appeal to any one of the participants in the TV production and broadcasting lifecycle. Therefore, possible target customers included:

- Production Facilities
- Post-Production Facilities
- Networks
- Local TV Stations
- Direct Broadcast Satellite (DBS)-Direct TV/Echostar
- Cable MSOs

Production and Post-Production Facilities

The LM100 could be used by production facilities to provide feeds to broadcasters at consistent volume levels, as designated by creators. Production facilities might also purchase Dolby’s LM100 as a way to differentiate their product from other production facilities’ when selling to broadcasters. Premium production and post-production facilities had bought Dolby equipment in the past and were
considered some of Dolby’s biggest advocates. While these premium production and post-production facilities (numbering approximately 55), would easily appreciate the benefits offered by the LM100, Dolby believed that the remainder would not. Most of the tens of thousands of production and post-production facilities were dedicated to lower-end production work, such as the production of commercials, and were not likely to be as interested in the benefits offered by the LM100.

Networks

There were approximately 220 networks in the United States. These networks compiled content from producers and then sent their signals onto broadcasters, such as local TV stations, cable MSOs, or DBS providers. Dolby believed that networks might be interested in the LM100, as a means of standardizing their outgoing feeds, as well as standardizing the content that came to them from production facilities. Networks exercised considerable control over production facilities and it was conceivable that they would use that control to require production facilities to send them content that had been standardized using the LM100. In this way, the networks had the ability to create a standard in TV audio production that relied upon the LM100. The benefit to the network would be consistent volume and quality control.

Local TV Stations

Local TV stations broadcasted signals in VHF and UHF and had existed for over fifty years. Because of signal attenuation, different geographic regions each maintained their own set of local TV broadcast stations. Although many TV viewers had migrated to cable or satellite TV, local stations still broadcasted their signal via the airwaves and even offered their content to cable MSOs. While local stations’ share of viewers’ attention had significantly decreased with the introduction of cable, there were still over 1,500 local TV channels broadcasting with a viewer base of 110 million households.

Direct Broadcast Satellite-Direct TV/Echostar

This was a small but growing market. DBS subscribers received channel feeds that were similar to those offered by cable providers; however, the signal was sent via satellite. In 2002, there were only 2 DBS companies in the U.S., with a combined subscriber base of approximately 13.2 million. These companies maintained 15 satellites, which translated into potential sales of just 15 LM100 units for Dolby.

Cable Television Multiple Systems Operators (MSOs)

The landscape within the Cable MSO market consisted of 11,000 cable head ends with 6 MSOs controlling 80% of these head ends. These six companies included AT&T Broadband, Time Warner Cable, Comcast, Cox Communications, Charter, and Cablevision. AT&T was the largest provider, with an estimated 13.7 million cable users; Time Warner listed 12.8 million users and Comcast placed third with a base of 8.4 million cable subscribers. Analysts suggested high growth in this area for the industry leaders, as the six were likely to capitalize on economies of scale. Dolby expected the demand for the LM100 to increase with demand for premium services. All analysts predicted strong growth in direct TV, but the cable market had stagnated. A report from the Television Bureau of Advertisers indicated a reduction in wired cable penetration from 71.0% to 70.3%. To date in 2002, approximately 44% of stations on the air offered the premiere Dolby Digital audio technology: Dolby 5.1 speaker Surround Sound. ABC, PBS, NBC, and Fox were all broadcasting in 5.1 as of early 2001. Due to the size of this market and the fact that a high concentration of the head ends were controlled by a few large players, this market offered a large potential for high volume sales if Dolby could successfully achieve entry.
LM100 Distribution Options

Dolby used three methods of distributing its product to the broadcast market: original equipment manufacturers (OEMS), systems integrators, and distributors. OEMs licensed Dolby technology and combined it with their video equipment for sale through their own distribution systems. Systems integrators designed new production facilities and could choose either Dolby or other OEM products for the build.

Dolby’s most common channel for equipment sales was the distributor. Dolby had traditionally used a limited list of distributors to reach its equipment-purchasing customers. Dolby strongly promoted single distributor sales areas and profit sharing on intra-regional sales. It was believed that this motivated distributors to push Dolby products because they were assured of making the sale. The reduced competition also improved revenues.

In the broadcast arena, Dolby’s list of distributors primarily focused on the production and post-production facilities. They sold decoding, encoding, and monitoring equipment for Dolby signals. The distributors were given a 20% to 30% discount on the price of Dolby equipment so they had room to negotiate with the end consumer.

Tom Daily’s group would perform sales calls for large accounts. This meant he would negotiate directly with the national TV networks, satellite television providers, and large MSOs. At the time of this case, Dolby had developed relationships with each of these groups, except the MSOs. Dolby also had not established distribution channels to smaller cable head ends and local television stations.

Competitive Landscape

Jeff Riedmiller, as the head LM100 product engineer, originally recognized the market for the LM100 while visiting broadcasters. The inability of competitive products to easily and accurately analyze loudness in a broadcasting environment caused station engineers recurring headaches.

The lack of a definitive measurement tool led to guesswork and constant tweaking by station technicians, who lacked the technical expertise of the engineer. This, in turn, produced large variability in output to consumers. As a result, customer dissatisfaction prompted complaints that often required further adjustment by technicians on duty. The LM100 was an alternative product that could end the “Spiral of Adjustment.”

Several products were currently used by broadcasters to deal with the loudness problem. These were:

- VU Meters
- PPM Meters
- Dorrough’s Loudness Meters
- Larson Davis Noise Analysis Products
- DK-Audio Metering Products

VU and PPM Meters measured sound, but performed virtually no averaging or analysis. They traditionally used a needle as the method of output, which bounced up and down so rapidly that getting a reading was very dependent upon the user. These meters retailed for under $50.

Dolby’s most formidable competition came from Dorrough’s. The Dorrough’s Loudness Meter, which was widely accepted, was easily used at the broadcasting site. Its major drawback came from its use of a proprietary loudness averaging method, rather than the Equivalent Loudness Method, which enabled the sound to retain its definition and contrast within certain thresholds. A Dorrough’s Loudness Meter sold for approximately $1000.
The DK-Audio Metering Product focused on the high-end, audiophile market. Often, it was used in music production. This line had nearly all the same attributes as the LM100. However, the product was designed for those who had a deep understanding of sound signals and loudness. Because the product had so many capabilities, it was unusable by station technicians and many station engineers. It retailed for approximately $6,000.

Because Dolby had developed multi-channel sound technology, its device was the only one that aggregated the sound over all channels: front, rear, left, right, and center. Competitive products examined each channel independently and required very complex calculations to meet the Equivalent Loudness Standards.

Finally, and perhaps most importantly, all competitive products were unable to read as wide a spectrum of signals as the LM100. Because Dolby had access to its signal code, the LM100 was able to decode standard digital, encoded digital, analog electrical, and radio frequency signals. Stations would have to purchase Dolby decoders in order to use competitive products on all of these signals.

Besides loudness measurement tools, Dolby also competed with end-user solutions. Companies such as Magnavox (Smart Sound®) developed technology that was embedded directly into the home theater, which controlled sound levels. So far, these solutions seemed to be technically inadequate, and were unable to span between different brand components of the home theater system.

**LM100 Pricing Options**

When pricing the LM100, Dolby had two options. It could either price at production cost plus a standard profit margin, or it could attempt to quantify the value of the benefits to the various customers and derive a commensurate price.

The first, “cost-plus” option would facilitate introduction into the cable head end market by keeping prices low. Dolby was considering a price of $3,000 to cover its $1200 marginal cost, distribution discounts, and profit. Penetration into the cable head end market would help Dolby strategically for future product releases. In addition, increased adoption of the LM100 within the entire broadcasting market would also increase the value of Dolby’s consumer products through improved performance.

The second pricing method could lead to higher profits within Dolby’s broadcasting division, but no hard data had been gathered about customer’s perceptions of value. Dolby was currently trying to identify where best to focus its market research efforts before the product launch in November. Daily and Riedmiller felt strongly that cable MSOs recognized the loudness problem and would value the LM100, because of reduced engineering and customer service attention.

Daily also recognized that this product would help cable head ends differentiate themselves in a market growing gradually more competitive. However, it was questionable if end users would notice, and be willing to pay for, this enhancement to just the audio portion of the TV viewing experience.

Value to the networks and content creators was even more difficult to quantify. The question for them became, “How often does someone change channels because of loudness problems?” However, if the networks did recognize the importance of consistent programming, they could require or recommend content providers to use the LM100 to verify loudness. Daily recognized that a complete “value analysis” involved some assumptions concerning factors: Customer Retention, Customer Service, and Technician time spent. He compiled the following data that might help him in estimating the benefits of the LM100 as a guide to a “value-based” pricing model:
### Customer Retention Assumptions (at the individual head end level)

| 105 M | Households in the U.S. |
| 69.4% | % of U.S. household with cable |
| 73 M | Number of U.S. cable subscribers |
| 10,000 | Number of U.S. cable head ends |
| 7,400 | Average number of subscribers per head end |
| $40 | Average customer revenue |
| $480 | Yearly cost of lost customer |
| 3% | Estimated % of cable customers switching to DBS (satellite) each year |
| 222 | Avg. annual number of cable customers leaving head end and switching to satellite. |
| 10 | Estimated # of customers that will remain with cable if sound quality is improved |

### Customer Service Assumptions (at the individual head end level)

| 50 | Number of customers calling each year with loudness complaints |
| 15 min. | Time spent by customer service reps with each customer |
| 12.5 hr. | Total time spent by customer service reps per year dealing with customer problems |
| $20 | Hourly wage of customer service reps |

### Technician Assumptions (at the individual head end level)

| 2 hr. | Time spent each week by technicians troubleshooting and adjusting loudness issues |
| 110 hr. | Total hours per year spent troubleshooting the loudness issues |
| $20 | Hourly wage for head end technician |

### Market Entry Strategy

Several questions loomed over Tom Daily, as he pondered an entry strategy for the LM100. Daily’s main dilemmas were which market to target and how to handle distribution of the product. The value proposition for each member of the TV broadcast value chain was slightly different and would require unique positioning and distribution. Should Dolby target multiple points along the value chain? If so, which ones and in what order? How should the product be priced? In previous product launches, Daily had personally handled sales to major networks. Should he continue to do so?

As head of marketing for the professional audio division, Daily naturally considered the impact of the LM100 on his product portfolio. If the LM100 were successful, there would be opportunities for launching derivative products. At the time, Dolby did not sell products directly to cable MSOs or local television broadcasters, both of which represented large potential markets. Although creating new distribution channels to reach these markets for the LM100 might prove expensive, Daily believed those investments would pay off in the long run if members of the markets then purchased other products from the Dolby portfolio. Daily wondered whether he should consider the future value of new sales channels when assessing potential markets.

Daily glanced one more time at the LM100 prototype sitting on his desk. This small black box certainly presented many questions for Daily in his marketing efforts. Although none of these questions seemed to have an easy answer, Daily decided he was ready to begin sketching out a market entry strategy for the LM100.
Notes

4. Ibid.