

TEMPORAL ASPECTS
OF MEDIA DISTRIBUTION¹Robert G. Picard
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Time is a scarce resource that is becoming increasingly significant to the media environment and media research. The temporal demands of modern society are placing increased pressure on individuals' leisure time and media use, and simultaneously placing more pressures on media and their operations.

Ironically, these temporal pressures run counter to the milieu of the god of time and watchmakers, Chronos. In Greek mythology, Cronus was a Titan who ruled the universe during the Golden Age, a period noted for its tranquillity and harmony, in which no work or other pressures interfered with contemplation and perfect happiness. But because that ideal state does not exist today, there is a good deal of concern in media circles about the time spent by consumers using media and media time use as a component of other time use (see, e.g., Becker & Schoenbach, 1989; Dewerth-Pallmeyer, 1996; Neuman, 1992; Nieto, 2000). Temporal issues

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also play a significant role in dictating the markets, substitutability, and operations of media.

This chapter focuses on the relations of time to the preparation for production and distribution of media products and services. In this regard, time is an economic factor that is limited by its scarcity. That temporal scarcity affects industry and company structures and costs in media industries.

In our discussion, we approach time in its linear conception, extending backward and forward, as a measurable concept. We accept that the perception of time is highly structured by social conventions, and that its import and meaning in terms of media markets and operations is affected by the dominant collective view of time in developed Western society.

We do not engage in a broader discourse of the nature of time. Thus, we lay aside the philosophical debates of Aristotle of whether time is motion, of Plato and St. Augustine that time came into existence with God's creation of the world, of Hegel and Kant that time is an illusion or a subjective part of perception, of Newton that time exists independently of events, and of Einstein that time is a means of understanding distance between events. Our use of the concept of time employs a determinist construct and how it affects the preparation and distribution of media products.

TEMPORAL ISSUES OF CONTENT PREPARATION TIME

Temporal issues regularly affect the preparation of content for distribution. The first and most evident issue is the deadline. The deadline, of course, is that hour at which content must be moved from those who write, edit, lay out, and design it to the actual processing and production for distribution.

In magazines, for example, this means the day on which content must be sent to the printers. In newspapers, it is the hour in which content must leave the newsroom so that printing activities can take place. In television news, the deadline means the point at which no changes will take place in a newscast unless an extremely important story is breaking and can be included.

The issues of deadlines are probably more crucial in newspapers than any other medium, because moving a deadline back to accommodate a major story immediately incurs monetary costs. Moving a deadline in magazines may result in delays in production and distribution, but does not immediately incur costs in most cases. Similarly, moving a deadline in news agencies is done not by postponing completion of the general news or feature bulletin, but instead adding the delayed story at a later point. A similar mechanism is used in broadcast media.

When a newspaper moves a deadline back, however, the change increases the work time of content creation, editing, and layout for personnel, and nearly always forces prepress, printing, postpress and circulation personnel to work beyond their scheduled hours. This creates additional—and often significant—wage costs. An hour's delay can easily incur thousands of dollars of costs for even a small newspaper or tens of thousands for a large one.

Another significant temporal issue involves the effects of work shifts on when content is prepared for distribution. These work shifts create production and distribution cycles for individual media units in which specific activities take place at specific times (see Picard & Brody, 1997). In domestic settings, work shifts are scheduled to meet the local demands for covering daytime events, contacting sources of news during regular office hours, and preparing content for distribution at its appointed times. International newsgathering is based on the activities that must take place at domestic bureaus or domestic media that provide coverage for news agencies, so the work shifts of those bureaus or media play a role in when information is disseminated.

Except for extraordinary coverage, magazines, newspapers, television stations, and radio stations do not fully staff their content offices 24 hours a day. Even news services rarely staff bureaus throughout the day and only partly staff regional news distribution centers on a full-day basis.

As a result, news that occurs overnight in Santiago, Chile, may not be prepared by a news bureau there and forwarded to a regional news center in Buenos Aires until the morning of the following day, unless it is a very large story warranting overtime efforts by the staff. Similarly, that news may be forwarded to media in Tokyo, Japan, but not prepared for broadcast or printing until the next day, because it may arrive between deadlines due to time zone differences.

ISSUES OF PHYSICAL DISTRIBUTION TIME

Significant temporal factors affect the time required for media content to be transferred to users. Print media face significant temporal issues in distribution, because physical products are involved and the issues are especially strong for newspaper and magazines. These issues also affect physical audio and visual materials such as CDs, videos, and DVDs, but to a lesser degree than they do media providing contemporary information.

Daily newspapers, for example, require same-day distribution if content is to be current and competitive with other daily information sources. In terms of distribution, this means that newspapers must be delivered in a timely manner to kiosks, newsstands, and other distribution points so that they are available to consumers at the expected morning or afternoon period.

In many locations, reading and lifestyle habits require home delivery of subscribed newspapers. The simplest and easiest method that can be employed for this purpose is the use of the post. If local custom requires morning delivery, postal distribution can be problematic because few postal systems are able to guarantee delivery prior to commuting or working hours. In many nations, including developed nations in Europe and North America, the postal systems are unable to guarantee even same-day, much less early morning, distribution locally or nationally.

This presents a significant problem for newspaper firms, because the news content is typically 12 to 24 hours old when the paper is printed. If the

post cannot deliver the paper until the day after publication, the paper is put into the position of providing yesterday's news tomorrow. This is clearly a competitive disadvantage by comparison to broadcast, online, and other news sources.

As a result, this temporal problem forces newspapers that want to have home delivery to establish their own home distribution systems, individually or jointly with other newspapers. But even with such a distribution mechanism, temporal constraints limit the distances at which papers can be delivered in a timely manner. This factor—along with reader demands for local content and advertiser demand for local audiences—is why newspapers tend to serve rather compact local geographic markets, and can serve national markets only in small nations unless satellite printing facilities are used.

In Finland, for example, newspaper delivery is expected at subscribers' homes in urban areas prior to 6:00 A.M. to allow subscribers time to read prior to their morning departure. Readers, as well as advertisers who want to promote sales and events on the same day that the paper is distributed, demand this delivery time. If the newspaper arrives too late for reading before subscribers leave their homes or after subscribers have departed, the news becomes stale and the advertising is rendered ineffective. To meet the time constraint, Finnish newspapers use a combination of special postal delivery and self-distribution systems.

The time constraints on newspapers are amplified when cross-border distribution is involved, because customs inspection time as well as the additional time for transfer between national postal and other distribution systems is required.

There is, however, a small international trade in newspapers that primarily serves travelers, government officials, and businesses needing significant and regular information about another country, as well as libraries and researchers. Because of the type of use these consumers make of the newspapers, the temporal factor is less important and they are sometimes willing to accept delays of a few days or even a week in distribution. Even within Europe, where internal trade and customs systems have been simplified by the common market, international newspaper trade is limited and amounts to only about 1% of the total newspaper circulation (Office of Official Publications of the European Union, 2000).

Magazines face similar time constraints in distribution but the pressure is somewhat lessened, especially for monthly magazines. Weekly publications, whether public affairs magazines or general magazines, face the same problems as newspapers in that their content is typically tied to contemporary events and their coverage must be deemed by readers as current.

In most nations, distribution to kiosks and newsstands can be accomplished within 24 to 48 hours because a variety of types of distribution systems operated by commercial or cooperative firms exist to serve this purpose. Similarly, domestic postal systems are typically able to deliver magazines to home or business subscribers within 48 to 72 hours.

Internationally, however, distribution of magazines can take between 1 to 3 weeks among developed nations unless specialized distribution services are employed or reciprocal contracts among domestic magazine distribution systems speed the process. For single-copy sales, both the costs of such specialized distribution services and the number of unsold copies are high, making the situation undesirable. In total, only about 4% of the circulation of magazines in the European Union (EU) crosses any national border (*Cross Border Distribution and Pricing*, 1997). As a result of temporal and cost issues, as well as linguistic issues, the magazine industry structure tends to be national and dominated by domestic titles.

The physical distribution of books faces far fewer temporal constraints than that of newspapers and magazines, because their content is not so dated by immediacy requirements. They are not without their own temporal requirements for books on current affairs or strong unexpected demand for specific titles; but these requirements can typically be met by traditional and rapid cargo delivery services.

In the global setting, however, distribution between continents is often problematic and can add months to distribution time. In order to overcome some of the global temporal problems of book distribution and marketing, many publishers sell regional, as well as linguistic, rights to their titles, so that the problems of general distribution from North America to Europe or Europe to Asia are avoided.

Note, though, that the problem of book distribution has become significant for firms engaged in electronic commerce of books. Consumers who select and purchase books online tend to expect fairly immediate fulfillment of their purchases. This problem is compounded because most online booksellers stock only a limited number of titles themselves and rely on publishers' distribution systems to ship orders that are passed on by the online firms. Although many publishing companies attempt to process orders within 2 to 3 days, some firms take weeks, and this can create unhappy relations among the customer, bookseller, and publisher.

Even when an order is filled, the parcel must be dispatched to customers through a commercial or postal distribution system, a process that can take between 48 hours and 3 weeks depending on the method and price of distribution selected. When transborder shipment is involved, the distribution process can add 2 days to 2 weeks to the time requirements, depending on the efficiency of customs services.

In most ways, the physical distribution times for audio and video recordings are affected by temporal problems similar to those encountered by books. But international regional distribution practices and piracy issues resulting from the nature of these products also affect audio and video temporal distribution issues.

Audio and video products created in the United States, for example, are typically released later in Europe, Latin America, Asia, and Africa. This occurs because of distribution requirements for physical copies, requirements for secure transportation of master tapes or copies from which copies for those re-

gions will be produced, and the subtitling or dubbing of video products. The temporal delays create problems for both industries.

Recordings of popular artists made available for sale in the United States and Europe prior to their release elsewhere are often transformed into digital files that are available on the Internet and violate the copyrights of the songwriters, publishers, artists, and recording companies. These digital files can lower demand for the recordings once they are officially released. Sometimes these Internet files include not merely single songs but all the songs on a CD. These files can be used to create counterfeit recordings for sale in regions where they are not yet available in stores, as well as cheaper recordings than the authorized versions available in shops.

The delays also promote pirated copies of motion pictures that are achieving success in the United States and elsewhere. These regularly appear in video or DVD form worldwide before their global theatrical release. Sometimes pirated video recordings of popularly anticipated films appear even before their initial release, because of the time between final edit and transportation of copies to theaters.

The temporal problems creating these delays are being addressed by major media firms and are an impetus toward greater globalization by major media firms.

THE PRICE OF PHYSICAL DISTRIBUTION TIME

As noted earlier, there is a link between distribution time and cost for media with physical form. This economic factor in distribution involves both costs for distribution services and the fact that providing distribution in less time is more expensive. As illustrated in Fig. 4.1, when the time available between completion of production and delivery is short, distribution costs are highest, but they decline as the time available increases. This occurs because when it is possible to take more time, the materials can be combined with others materials being shipped, to gain savings by efficient use of truck, rail, aircraft, ships, and other transportation methods.

A German book publisher who needs to deliver 20 boxes of books to a bookshop in London by 9:00 A.M. tomorrow morning illustrates this problem. To ensure on-time delivery, the publisher will need to use either an express delivery service or its own delivery personnel and truck to send the shipment by ferry. However, if the books are not needed for 5 days, a traditional freight delivery service can be used at great cost savings.

ISSUES IN DISTRIBUTION TIME OF NONPHYSICAL MEDIA

The actual distribution of physical products is not a problem for nonphysical media based on analog and digital signals. Nevertheless, such media encounter a variety of temporal issues.

In broadcast media such as radio and television, for example, the broadcast distribution and reception of material by audiences is simultaneous, so broadcasters create and distribute material intended for certain audiences

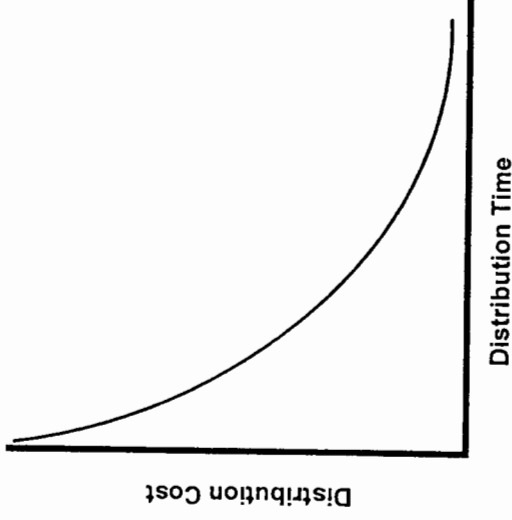


FIG. 4.1 Effect of distribution time on distribution cost.

available at different times of the day. The possibility of targeting materials to those available in various dayparts allows broadcasters to seek audiences who are preparing to go or are already traveling to work in the morning, those who are at home or in their workplaces during the day, those who are traveling home in the evening, and the more general audience at home in the evening.

A certain amount of time shifting is possible if consumers use recording devices such as videocassette recorders, but temporal constraints essentially mean that most audiences receive materials when they are broadcast. Even when VCRs are used for time shifting, advertisers are wary of the value of the audience. This limitation has led to efforts by the broadcasting industry to find ways to create digital television on demand that will increase the ability and ease with which audiences can accomplish time shifting of reception. Thus, audiences can be more effectively measured for advertisers.

Broadcasting is also affected by time zones. A major sporting event, such as the Formula 1 race at Suzuka, Japan, will be run and broadcast in the day-time in Japan, but the live broadcast will be received in the very early morning in Europe. These types of temporal issues are usually overcome by rebroadcasting later in the day or using a tape delay in which video of the event is received live by broadcasters but not distributed to their viewers until later.

The problems of time zones are problematic for media in nations that are geographically large on the East–West axis, cross more than one meridian of longitude, and have multiple time zones. In the United States, for example, when it is 7:00 P.M. in Washington, D.C., it is 4:00 P.M. in Los Angeles and 3:00

P.M. in parts of Alaska. Russia suffers similar problems in reverse. When it is 7:00 P.M. in Moscow, it is 2:00 A.M. the following morning in Vladivostok.

These problems make it difficult to broadcast news and entertainment nationally without use of local tape delays. Although tape delays are not a particularly significant disadvantage when entertainment programming is involved, they date the information involved in news programming. When the national evening news is broadcast in the United States, for example, it is broadcast live for the Eastern and Central portions of the country but then rebroadcast for the West Coast, Alaska, and Hawaii. In order to make the news more current, the news hosts make the initial live broadcast, have dinner, and then return to broadcast both updated stories as well as tape-delayed portions of the original broadcast.

For global broadcast media, the differences in time zones present even more difficult operational problems when news and other time-sensitive information is involved. If the broadcast firm is large enough, such as CNN, it has the opportunity for 24-hour news operations. Even then, because most news is created during daytime hours across time zones, global operations with a fixed broadcast base create work-shift and production cycle problems at the site of the global broadcast and separate the base from the daytime region in which news is occurring.

One answer to this issue is the creation of regional broadcast centers in three locations, each corresponding to a group of 8-hour time periods. These might be, for example, located in New York, London, and Tokyo. As the workday ends in one location, the primary broadcasting can be passed off to the next location. This process, borrowed for multinational corporations and some superpower government agencies, permits global 24-hour operations with primary staffing only during normal working hours but allows the full range of company services to be offered simultaneously everywhere in the world. This pattern of operation is increasingly being integrated into Cable News Network (CNN) and may appear more strongly in BBC World, Sky News, Deutsche Welle, NHK, and other operations attempting to provide global, round-the-clock news operations.

News agencies such as Reuters, Associated Press, and Agence France Presse have not yet adopted the revolving global operations model, although they distribute analog and digital nonphysical products. This is because the structure of agencies is based on domestic news operations that feed regional news operations, and ultimately service global operations. As a result, the primary sources of news and information preparation and distribution are the domestic and regional news centers rather than a global center that produces material for the regions and nations. As noted previously, this structure creates some delays in global distribution unless the news is a highly significant story that merits a special bulletin.

The Internet also presents temporal issues for major content providers. It has some of the immediacy of live broadcasting, but the age of its news and contemporary information typically falls somewhere between that of broadcasting and newspapers. This occurs for three reasons.

First, the time of distribution and time of reception are not simultaneous for most Internet material providers and audiences. Even active users of the Internet check for material primarily in the morning or evening, and sometimes during the day if they have computers with Internet access at their workplace. This means they go for hours at a time without attending to content temporary news or information that may be distributed by Internet content services. The hours of use issue is compounded by the physical connection required for use. Electronic manufacturers, however, are developing wireless applications to allow for mobile connectivity that can be used by individuals to acquire information when they are away from their computers.

Second, news and other contemporary information available on the Internet, with the exception of real-time financial data, are distributed by news services that gather and distribute information in a manner similar to their distribution of scheduled news bulletins to other media. As a result, news available by the Internet becomes dependent on the work shifts and work flows of media, so information may have been distributed as much as 24 hours prior to the report's Internet publication, depending on the news service. Admittedly, the majority of major news providers for Internet portals—such as the world's top news agencies—update material more frequently, but it is not unusual for the news to have been originally distributed 2 to 8 hours before.

Third, both commercial and institutional Internet service providers have been struggling with issues of service interruptions and reliability. Although the major service providers tend to have the best systems and servers, and often have backup systems that are used in the event of problems, service disruptions have not been uncommon in recent years. These typically delay the arrival of content material. Institutional service providers, such as universities and companies offering access through their networks, are not hampered by customer service demands of commercial service providers and tend to have fewer backup systems. As a result, it is not unusual for those who rely on such institutional service providers to find servers down for maintenance or other problems for significant periods of time.

Because of its global nature and the manner in which it spans time zones, the Internet presents temporal problems with regard to scheduling online meetings and events, downloading material, and other Internet-based applications. To help overcome this problem, an alternative time measurement, Internet Time, has been introduced. Internet Time is not based on time zones, and is not affected by daylight savings time changes. Instead, it divides the day into 1,000 beat counts. Although not quite the "star date" of *Star Trek* notoriety, Internet Time provides a workable means of overcoming some of the global temporal problems (<http://www.swatch.com/internettime/>).

TEMPORAL ISSUES IN MARKETING

The time required to market media products and services is related to the relations of media with consumers and the frequency of their publication or re-

lease. Marketing and promotional efforts for motion pictures, for example, begin prior to the beginning of production, continue during filming, and increase in intensity during postproduction and release periods. Thus, the marketing of motion pictures is often a 2-year activity. This lengthy lead time for marketing is required because each film is an individual product and the audience for each film differs from that of previous films.

Similarly, the marketing time for TV programs ranges from 3 months to 2 years prior to broadcast, depending on the nature of the program. For programs resulting from acceptances of initial concept pitches to broadcasters, marketing the program to consumers will begin concurrently with the production of initial episodes. For a large-scale costume drama, miniseries, or similar production, marketing will also begin with production, often as much as 1 year prior to broadcast. Syndicated off-network programs will be made available to other broadcasters 1 to 2 years prior to broadcast, and consumer marketing may also begin 3 to 6 months prior to broadcast. As with films, television programs are individual products and need individual marketing. This requirement combines with the lead time for production and broadcast scheduling to result in long marketing periods for the products.

Books, audio products, and video media also offer individual products to consumers. These media require separate marketing efforts that typically begin 2 to 3 months prior to release, and continue if the release enjoys prolonged success.

Two types of print media do not enjoy significant lead time for marketing: newspapers and magazines. Because of the frequency of their appearance and the need to keep content contemporary, it is difficult for either to engage in significant marketing of the content of individual editions. The primary means for counteracting this problem is subscribed circulation. By marketing subscriptions, these print media reduce the specific content choices of audiences and instead sell a branded consistency of type and quality of content. Most marketing efforts in such media go toward establishing and nurturing the brand image, subscription sales, and single-copy sales based on the brand rather than specific content. These activities help overcome the temporal problems of marketing media products that are frequently available.

Only a small amount of marketing effort goes to promotion of specific content, such as posters of the day's most intriguing headlines that are delivered to news agents along with newspaper copies, or posters of a magazine's cover that are delivered to kiosks and other sites that sell single copies of magazines.

CONCLUSIONS

Although a number of temporal issues affect the market structure and operations of media, the primary contributor is the time sensitivity of the medium or, more specifically, the content that it conveys. Media industries vary greatly in terms of time sensitivity, reflecting the different roles they play for

audiences. Differences in their relative sensitivity are shown in Fig. 4.2. These differences in sensitivity affect the locations from which audiences can be served, the production and distribution operations of media, and the substitutability of media.

The lessened substitutability of media is an important contributor to the structure of units of both a medium and media overall. Audiences desiring information with immediacy are not well served by news magazines, books, or informational CDs. Individuals wanting contemporary information through news magazines are not well served by news magazines from other nations or regions because of the distribution time involved. Likewise, individuals needing a daily newspaper before 7 A.M. would probably not find newspapers from distant localities useful.

Temporal issues, then, are significant economic factors that affect the structures, competition, and marketing efforts of media firms. An understanding of their impact is needed to better comprehend the intricacies of media economics and the effects they have on the availability of content.

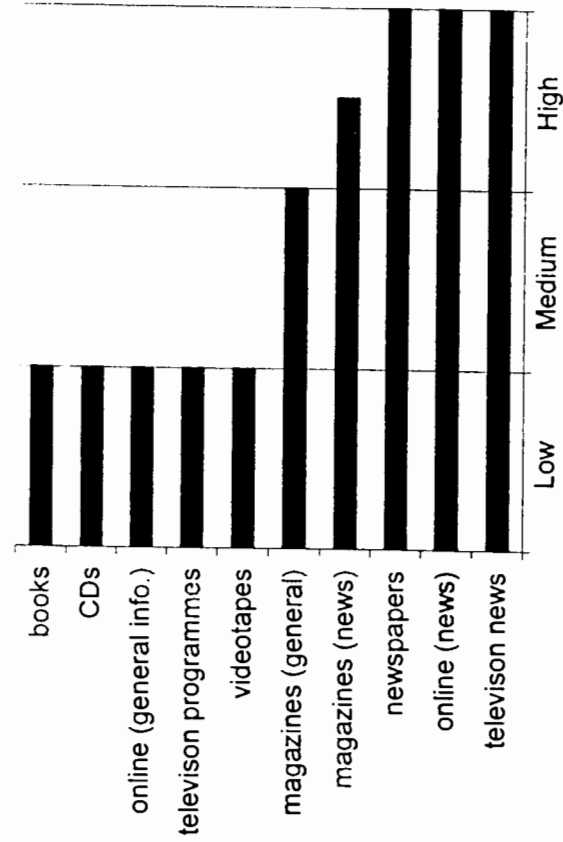


FIG. 4.2 Time sensitivity of selected media.

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