

# Wi-Fi Technology Goes Hi-fi Technology

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## ABSTRACT:

*Technology is making rapid progress and is making many things easier. As the innovative thinking of person is increasing day by day, new methods for wireless networking has been evolved of which our present topic WIFI is the most accepted technology. This paper introduces WIFI and HIFI technologies in brief. The multiple-choice multi-dimensional knapsack Problem (MMKP) is a problem which can be encountered in real-world applications, such as service level agreement, model of allocation resources, or as a dynamic adaptation of system of resources for multimedia multi-sessions. In this, we investigate the use of a new model-based Lagrangian relaxation for optimally solving MMKP. In order to tackle large-scale problem instances, we curtail the search process for providing approximate solutions. We then apply the Cplex solver using both original and equivalent models. In this case, the Cplex solver becomes more efficient when the new model is used. Also, when the proposed method is considered as a heuristic, then it outperforms the Cplex solver using the original model: new solution values are obtained.*

## INTRODUCTION:

Wi-Fi, or Wireless Fidelity, is a term that is used generically to refer to any product or service using any type of 802.11 technology. Wi-Fi networks operate in the unlicensed 2.4 and 5 GHz radio bands, with an 11 Mbps (802.11b) or 54 Mbps (802.11a) data rate, respectively.

Wifi allows you to use your computer or other device to connect to the internet from anywhere there is a WIFI access point.

How? Access points, installed within a Wi-Fi location, transmit an RF signal to Wi-Fi enabled devices that are within range of the access point, which is about 300 feet. The speed of the transmission is governed by the speed of the pipeline fed into the access point.



And other hand the word Hi-Fi system simply means where there is precise reproduction of wonderful sound and that too without any

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distortion or noise. Hi-Fi or high fidelity is the word used by home stereo and audio listeners and enthusiasts also called as audiophiles.

To know what exactly (Hi-Fi) high fidelity is we have go back to the history. It was later in sixties that the High Fidelity industry had grown to its fullest, but its demand started to dim after its conversion to stereo sound system. Also after that the transistor revolution came into existence. Ideally, such systems can eliminate noise and distortion, and give an accurate frequency response. Music enthusiasts or audiophiles can collect the home systems components with hifi stamp. These systems are incorporated by creating new ideas and devices. Hi-Fi speakers play a very important role in enhancing the quality of music. Also consumers have to choose the right speaker type to suit their specific HiFi music needs.

Hi-Fi has evolved into a fine art as technology has improved the quality of every aspect of audio. As is usual there are the two steps forward one step back, which occurs in many areas of technology.

For example, when we first made the transition from vinyl records to CDs, there was something very wrong with the CD sound. This was partly due to the fact that test measurements were designed to pick flaws on the existing (vinyl) system. The flaws that were overlooked cause serious distortions, therefore reducing the confidence, enjoyment and interest of the general population.

## How are WIFI and HIFI same:-

From the preceding discussion, it might appear that WIFI and HIFI address completely different user needs in quite distinct, non-overlapping markets. While this was certainly true about earlier generations of mobile services when compared with wired LANs or earlier versions of WLANs, it is increasingly not the case. The end-user does not care what technology is used to support his service. What matters is that both of these technologies are providing platforms for wireless access to the Internet and other communication services.

In this section we focus on the ways in which the two technologies may be thought of as similar, while in the next section we will focus on the many differences between the two.

## Both are wireless

Both technologies are wireless, which avoids the need to install cable drops to each device when compared to wireline alternatives and facilitates mobility. Avoiding the need to install or reconfigure wired local distribution plant can represent a significant cost saving, whether it is within a building, home, or in the last -kilometer distribution plant of a wireline service provider.

In the US, the coffee chain, Starbucks, is now offering WiFi access from T-Mobile (a subsidiary of Deutsche Telecom, see [www.t-mobile.com](http://www.t-mobile.com) for more information). T-mobile is planning to offer hot spot coverage in over 70% of Starbucks' North America locations, as well as in a number of airports and hotels. T-mobile acquired the WiFi assets. Other public WiFi service providers include Boingo ([www.boingo.com](http://www.boingo.com)), Wayport ([www.wayport.com](http://www.wayport.com)), Hotspotzz ([www.hotspotzz.com](http://www.hotspotzz.com), formerly WiFi Metro). Hifi service provider HI FI

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### Both are access technologies

Both WIFI and HIFI are access or edge-network technologies. This means they offer alternatives to the last-kilometer wireline network. Beyond the last kilometer, both rely on similar network connections and transmission support infrastructure. For WIFI, the wireless link is from the enduser device to the cell base station which may be at a distance of up to a few kilometers, and then dedicated wireline facilities to interconnect base stations to the carrier's backbone network and ultimately to the Internet cloud. The local backhaul infrastructure of the cell provider may be offered over facilities owned by the wireless provider (e.g., microwave links) or leased from the local wireline telephone service provider (i.e., usually the incumbent local exchange carrier or ILEC). Although WIFI is conceived of as an end-to-end service, it is possible to view it as an access service.

### Both offer broadband data service

Both WIFI and HIFI support broadband data service, although as noted earlier, the data rate offered by WiFi (11 Mbps) is substantially higher than the couple of 100 kbps expected from WIFI services. Although future generations of wireless mobile technology will support higher speeds, this will also be the case for WLANs, and neither will be likely to

compete with wireline speeds (except over quite short distances).

### How they are different

Wi-Fi (play /'waɪfaɪ/), or WiFi, is a mechanism that allows electronic devices to exchange data wirelessly over a computer network. A device enabled with Wi-Fi, such as a personal computer, video game console, smartphone, tablet, or digital audio player, can connect to a network resource such as the Internet via a wireless network access point. An access point (or hotspot) has a range of about 20 meters (65 ft) indoors and a greater range outdoors. Hotspot coverage can comprise an area as small as a single room with walls that block radio signals or a large area, as much as many square miles, covered by multiple overlapping access points.

High fidelity—or hi-fi—reproduction is a term used by home stereo listeners and home audio enthusiasts (audiophiles) to refer to high-quality reproduction of sound to distinguish it from the poorer quality sound produced by inexpensive audio equipment. Ideally, high-fidelity equipment has minimal amounts of noise and distortion and an accurate frequency response.

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Steve Dossick was frustrated by the limitations of his wireless home network. Last November when finally it became clear that he would not find a device capable of storing his MP3s and photos in one place and transmitting them wirelessly throughout

his sprawling Silicon Valley house, Dossick's entrepreneurial instincts kicked in. He built his own solution. The result is Martian Technology, a storage technology company in Menlo Park, CA.

With less than \$100,000 in seed capital, Dossick and his team of 10 built a wireless hard-drive-based storage device that connects to a Wi-Fi setup and can stream music anywhere in the network. But Martian is just one of many tiny startups exploiting the growing Wi-Fi infrastructure. These new enterprises are building products that join the living room and the PC. Using off-the-shelf components and capitalizing on license-free slices of the wireless spectrum, these companies are figuring out ways to stream music, photos, and even videos straight into the home theater.

Wi-Fi, or Wireless Fidelity, creates a wireless Ethernet network using access hubs and receiver cards in PCs and even handhelds. According to In-Stat/MDR, a market research firm based in Scottsdale, AZ, nearly 11 million Wi-Fi hubs in the United States are connected to broadband Internet feeds. By 2005 the number of hubs will triple.

Even traditionally cautious telecom companies such as AT&T, T-Mobile, Verizon Wireless, and Sprint are jumping into the Wi-Fi fray, betting that this new technology will add to the bottom line. "So far Wi-Fi has been used primarily for data transport, but it has been so popular that now people want to extend it to different applications," says Gemma Paulo, a senior analyst with In-Stat/MDR. Widespread applications have so far included such devices as webcams and game console

extensions, and this year the hot Wi-Fi products are likely to be "media adapters," special devices that equip home entertainment units to access files on PCs.

## Features:

- The Ultimate in Creative Flexibility
- UI your clients will thank you for
- The easiest, most flexible templating system you've ever used
- Minimal Learning Curve
- Guest wireless network
- Channel Agility
- Wi-Fi CERTIFIED Passpoint
- Spectral Analysis
- Open Source Software
- Wi-Fi CERTIFIED Miracast

## CONCLUSIONS:

This paper we introduced the HIFI and WIFI technologies. We show in this paper comparison of HIFI and WIFI. In this we show qualitative comparison of two wireless technologies that could be viewed simultaneously as substitute and/or complementary paths for evolving to broadband wireless. Traditional radios are based on dedicated hardware. The two technologies are WIFI, which is the preferred upgrade path for mobile providers, and HIFI, one of the many WLAN technologies. The goal of the analysis is to explore two divergent world views for the future of wireless access and to speculate on the likely success and possible interactions between the two technologies in the future. While the analysis raises more questions than it answers, several preliminary conclusions appear warranted. First, both technologies are likely to succeed in the marketplace. This means that the wireless

future will include heterogeneous access technologies so equipment manufacturers, service providers, end-users, and policy makers should not expect to see a simple wireless future. Thus, we expect these technologies to be complementary in their most successful mass-market deployments. Third, we also expect HIFI to offer competition to WIFI providers because of the lower entry costs associated with establishing HIFI networks. This may take the form of new types of service providers, in end-user organized networks, or as a low-cost strategy for a wireline carrier to add wireless services. The threat of such HIFI competition is beneficial to prospects for the future of last kilometer competition, and will also encourage the adoption of HIFI technology by WIFI providers as a defensive response. Our analysis also suggests a number of areas where further thought and research would be beneficial.

## References:

- [1] Alven, D., Arjunanpillai, R., Farhang, R., Kansal, S., Khan, N., & Leufven, U. (2001). "Hotspots—connect the dots"
- [2] Drucker, J., & Angwin, J. (2002). New way to surf the web gives cell carriers static. Wall Street Journal On-line. November 29.
- [3] Salez M., Delorme Y., Peron I., Lecomte B., Dauplay F., "A 30% bandwidth tunerless SIS mixer of quantum-limited sensitivity for Herschel/HIFI band 1", 2002, SPIE Proc. Vol.4855, 2002 02