

---

# Nashville: The City of Medicine and Music

## Part I: A Leader in Healthcare



*Image: The Children's Hospital at Vanderbilt, Wikipedia*

According to data gathered by the Tennessee Department of Economic and Community Development, Tennessee is No. 1 in the Southeast and No. 2 in the United States for medical equipment and supplies exports for five consecutive years. In addition, more than 342,100 Tennesseans are employed in the healthcare and medical device industry.<sup>1</sup> In Nashville specifically, Vanderbilt University is an employer of almost 20,000 people, about 16,000 of which work at the medical center, along with being the location of innovative biomedical and pharmaceutical research efforts.<sup>2</sup> Several major healthcare companies, such as HCA Holdings Inc., are headquartered within Nashville and the surrounding areas of Franklin and Brentwood. In addition, there are numerous other pharmaceutical, biomedical, and healthcare related companies who have a presence

---

within Nashville and the surrounding area of which include pharmaceutical industry leaders such as Pfizer Inc. and Bayer Corporation.<sup>3</sup>

Since January 2011, Tennessee businesses in the health care and medical devices sectors made commitments to create new jobs and investment within the state of Tennessee. These investments have generated 11,682 in new jobs and a total investment of \$1.26 billion from January 2011 to February 2016. Of these investments, approximately 60% have occurred in Williamson and Davidson counties, of which include Nashville, Franklin, and Brentwood.<sup>1,3</sup>

Relative to the rest of the Southeast and other parts of the nation, data from TNECD showed that Tennessee has a greater employment concentration for the health care and medical devices sectors by assigning a “Location Quotient” to specific sectors within the healthcare and medical devices industry that compares Tennessee’s employment relative to the national average. Some major sectors in the industry with their respective Tennessee LQs include: Surgical Appliance and Supplies Manufacturing, 3.28; Medical, Dental, and Hospital Equipment and Supplies Merchant Wholesalers, 1.71; and Medical Laboratories, 1.43. These LQs suggest that, relative to the rest of the nation, Tennessee is a leader in medical device manufacturing and healthcare research. The fact that Medscape ranked Tennessee No. 1 on the Places to Practice list for 2015 is also supportive of this conclusion. In addition, \$680 million worth of pharmaceuticals and medicine were exported from Tennessee in 2015.<sup>3</sup>

Of the many leading investors who are committed to expanding the already prominent healthcare industry within Nashville and the surrounding areas, Vanderbilt University is certainly one the largest while simultaneously being dedicated to medical research. According to Vanderbilt’s 2015 website and financial report, \$682 million was awarded to Vanderbilt to sponsor research efforts of which \$551.5 million was used to sponsor research at the Vanderbilt University Medical Center (VUMC) and \$265.3 million was received from the NIH. Overall, the total revenue from healthcare services was over \$2.8 billion for the fiscal year of 2015, only a small portion of the almost \$40 billion impact on Nashville’s economy.<sup>2,4,5,7</sup>

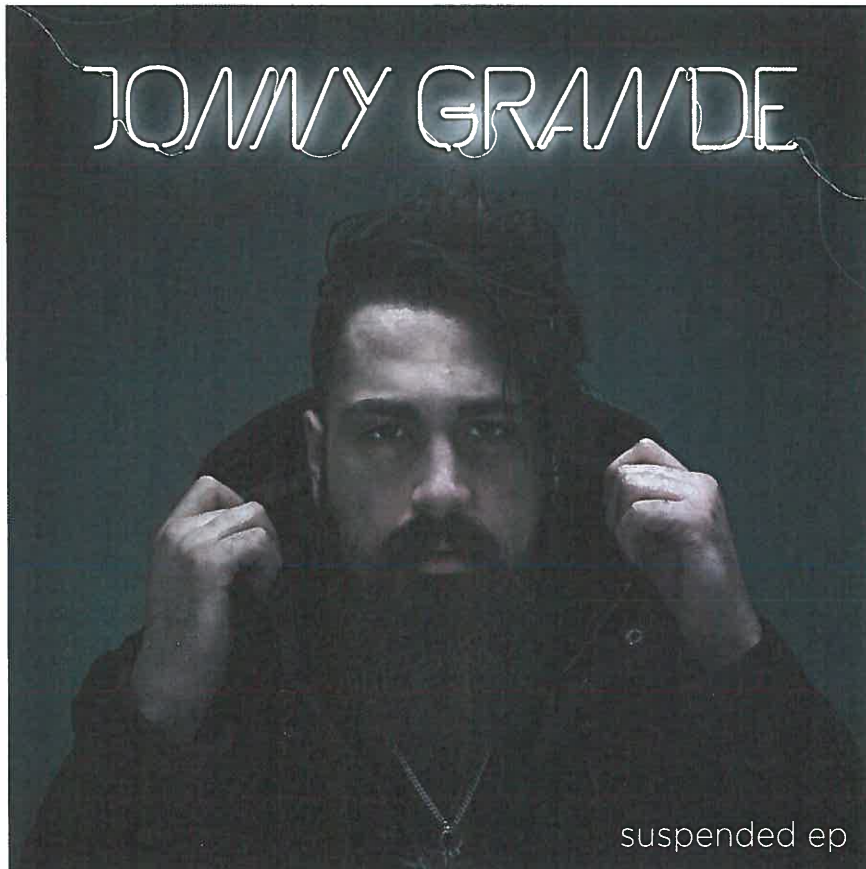
---

For an entrepreneur in the Southeast interested in taking their ideas and innovations to revolutionize the healthcare industry, there would be no hesitation to look towards Nashville for opportunity. The Nashville Entrepreneur Center, or NEC, is well-aware of Nashville's thriving healthcare industry and, consequently, has an entire program at the NEC called "Project Healthcare" dedicated to transforming the healthcare industry. According to PH's press release in early February of 2016, "The initiative provides year-round create, launch and growth support to health care startups and entrepreneurs by connecting them to the critical curriculum, community, connections and capital resources needed to turn their ideas into realities."<sup>5</sup>

This initiative by the NEC to promote growth and innovation within the healthcare industry is not without strong support either. Google, along with selecting Nashville as one of the cities in the Southeast to receive Google Fiber, is additionally supporting Project Healthcare through their other initiative, Google for Entrepreneurs. At the NEC itself however, Google also provides the facility with the support and technology it needs to operate successfully as an business incubator within the state of Tennessee.<sup>5,6</sup>

---

## Part II: The Music Metropolis



*Image: Grande Haus Music, used with permission*

With currently more than 80 record labels, 130 music publishers, and 180 recording studios, Nashville has been appropriately known as Music City, U.S.A. for decades and has evolved from being the center of country music to becoming the capital not only of Tennessee, but also of global entertainment. Overall, Nashville's music and entertainment industry provides a \$10 billion benefit across the region along with hosting some of the largest music publishers nationwide, such as Sony and Universal Music Group. The Nashville music and entertainment industry has grown to such a significant size that economist Richard Florida proclaimed Nashville as "The Silicon Valley of the Music Business".<sup>8, 9, 12</sup>

More than a quarter of music publishers within the United States are located specifically in Nashville. In addition, Nashville has ratio of 7.8 out of every 1000 jobs specifically in the Nashville music industry, providing about 56,000 jobs in total. Nashville also outpaces some of the largest cities in the nation in terms of music industry activity and has seen a 5.5% growth within the entertainment industry over the past five years. In comparison, New York, Austin, and Los Angeles have music industry employment ratios of only 2.0, 2.6, and 2.8, respectively. <sup>8, 9, 10, 13</sup>

According to a RIAA study on the Nashville music industry, some branches of the music industry within Nashville possess some exceptionally large location quotients. For the music publishing, record production, and sound recording studies branches and their respective LQs of 31.3, 12.5, and 4.1, their strong presence will only be matched by their future growth. RIAA additionally found that, relative to other cities known nationally for their strong music and entertainment industries, Nashville’s average industry earnings and industry establishment are unproportionally greater, as is illustrated in figure one. <sup>13</sup>

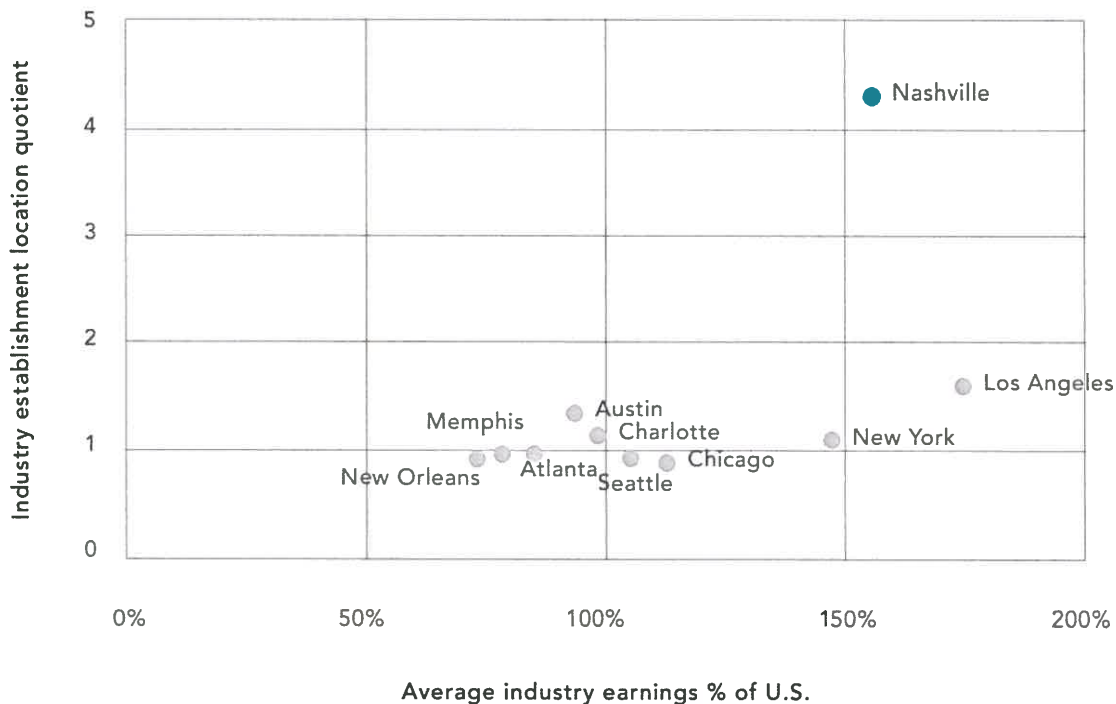


Fig. 1: Nashville’s overall level of earnings within the music industry relative to other major cities. <sup>13</sup>

---

Just as Vanderbilt University serves as an educator for students seeking to work in the healthcare industry, Belmont University plays a similar role for those seeking to play an active role in Nashville's visual and musical entertainment industry. Belmont's Mike Curb College of Entertainment & Music Business has been accredited by the AACSB International and the ABET for their high standards and achievement for both business and technology related studies, respectively, within the music and entertainment industry. In addition, the Curb College has also been featured in *Billboard*, *Time Magazine*, *Rolling Stone*, and *Business Week*. Through the combination of a thriving music industry and a strong university focused heavily on visual and musical arts that is able to educate and connect students to the industry, Belmont will serve, in part, to provide the next generation of producers and artists with the experience and skill sets needed to continue the growth of Nashville's world-renowned music scene.<sup>9, 14</sup>

As with the healthcare industry, the Nashville Entrepreneur Center also clearly recognizes Nashville's booming music and entertainment industry. Appropriately, the NEC has also established an accelerator program titled "Project Music" to promote technological innovation through the building and support of music or entertainment-oriented startups. The program seeks to help its selected participants step-by-step through educating them on their industry, connecting them to mentors and industry experts, and helping them with their pursuit of potential investors. Music-based startups should also be hopeful in seeking the right talent for their venture, as employment in Nashville's entertainment industry is expected to grow by 2.7% over the next five years. Overall, Nashville is highly ranked as an industry leader in the music and entertainment industry, being No. 1 for employment in music publishing, No. 2 for number of music publishing establishments, and No. 3 for employment in sound recording industries, record production, integrated record production and distribution, musical groups and artists, and musical instrument manufacturing.<sup>9</sup>

---

### Part III: Nashville, Beyond the Data

While it is clear that Nashville possesses a strong grip on both the healthcare and entertainment industries, there exists an exceptional potential for growth, expansion, and innovation of these industries through the development and utilization of existing and future technologies. If the necessary technological innovations are properly implemented, Nashville has the potential to be one of the “smartest” cities in the nation, being a leading example for cities across the world seeking to invest the required resources into becoming a smart city. Nashville in particular, due to its strong healthcare industry and due to it being a site for the Google Fiber project, could become a community that entirely embodies advanced health and wellness. With a gigabit network infrastructure entirely developed by Google along with IoT through the usage of personal “wearables”, real-time health data of individuals throughout the Nashville community could be relayed to and monitored by health professionals consistently. This data would provide a much more detailed progress report of individual health and wellness and, through the usage of computer algorithms, could detect irregularities within an individual’s heart rate, body temperature, or other vital signs and promptly alert the doctors and nurses much more quickly than a traditional check-up or even an emergency call at the time of an incident would be able to offer. Consequently, maintaining the health of Nashville residents would become a much more proactive process rather than a reactive process, saving thousands of lives.

At a larger level, the data used to monitor the health of individual residents could provide a picture of Nashville’s health as a whole. Detecting abnormalities in the general population during particular flu or cold seasons would allow the CDC to better assess seasonal trends in illness and reduce the likelihood of viral or bacterial outbreaks within Nashville for the future. Given Nashville’s large, capital-city population, the sample size of the data has potential to provide valuable, life-saving data to be used and extrapolated appropriately in the implementation of effective sanitary procedures in cities across the nation and even worldwide.

If people are feeling well more often than not, there is no doubt that they want to go out and celebrate. Through a combination of Google Fiber and Nashville’s music

---

industry, residents of Nashville will be able to experience entertainment like never before. Just as wearables will provide constant monitoring of health-related data, so will the physical web be able to enrich people's experience of the visual and musical arts, eventually providing opportunities for virtual reality experiences. Companies such as the Nashville-based BKON Connect, Inc. are seeking to provide this type of experience. Through the usage of small devices that link a mobile device to a specific URL describing the nearby object (person, place, or thing), residents of Nashville will be able to instantly be better connected to the events within their community. If for example a person hears a song by an artist unknown to them, they can quickly utilize the power of the physical web to get additional information about the artist, suggestions to similar artists, nearby events, upcoming concerts, and much, much more, simply by connecting to the nearby information beacon. The potential for this technology extends far beyond entertainment however, and can be utilized for healthcare, transportation, dining, tourism, and a number of other industries that will inevitably provide a significant benefit to the Nashville economy.<sup>17, 18</sup>

With such an innovative and unique entertainment infrastructure, Nashville's music industry and, consequently, its popularity, will continue to grow, hosting more concerts and shows than ever. The question may then arise, if this increase in event activity will further congest Nashville with an undesirable amount of traffic at times of high activity. However, given that Google already has an interest in the growth of Nashville, there is likely to be future collaborations between Google and the city of Nashville. That being said, Google may seek to use Nashville as a pilot city for its self-driving car technology, and while this technology is already being tested in places such as Austin, Texas and Mountain View, California, Nashville may be one of the first cities to experience this technology within the Southeast. In addition, as of late January of 2016, there were several reports that Senator Mark Green, R-Clarksville, has pushed for an amend to the Tennessee driving laws to allow for the operation of Automated Vehicles (AVs). In utilizing AVs for such large music events in Nashville, there is a huge potential to avoid unnecessary traffic jams that result in wasted time and fuel along with an increase in overall CO<sub>2</sub> emissions. Through the combination of the two innovative Google technologies: Google Fiber and Google self-driving cars, Nashville transportation could be



---

revolutionized, with a personal taxi-system more time-efficient and cost-effective than ever.<sup>19</sup>

The Nashville entrepreneurial scene is as just as progressive socially as it is with its business operations. According to a study performed by Wallet Hub, Nashville is the best city in the United States for women entrepreneurs and women-owned businesses for 2016. In addition, Chattanooga was the next best city for women entrepreneurs, taking the No. 2 position on the Wallet Hub ranking, Memphis taking No. 4, and Knoxville No. 15.<sup>89, 90</sup> Business Insider also ranked Nashville as the 4<sup>th</sup> best city for millennial entrepreneurs, with Knoxville ranked number No. 7. A study from Thumbtack also stated that Tennessee was ranked No. 7 on the top 10 list of the best states for overall friendliness towards small businesses.<sup>91, 92, 93, 94</sup> For Nashville and for Tennessee, these rankings suggest a bright future ahead for entrepreneurial growth within these particular regions of the Southeast.

IoT. AVs. Gigabit Internet. All these innovations and the ones to proceed them have an exceptional amount of potential to continually revolutionize the life and well-being of Nashville residents. The Nashville population will become one of the first to experience an environment and, consequently, live a lifestyle unlike anything that is currently implemented today. Their way of living will be efficient, productive, healthy, informed, and, most importantly, connected to the city of Nashville that adapts to its needs, just as they do.