



The Inconvenient Truth of an Exploding Market



VERTEX INNOVATIONS



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01

Introduction



Endless opportunities to scale vs. a lack of skilled laborers

There is a critical worker shortage that is threatening to cost enterprise businesses as much as \$8.5 trillion in unrealized annual revenue. This ground-shaking number comes from a report recently released by [Korn Ferry](#), which analyzed several industries, including telecommunications, to reveal that there is a human talent shortage of 85 million people.

This shocking talent shortage comes just as the telecommunications industry is experiencing explosive growth. Never before has there been a greater demand for mobile data. Government, enterprises, municipalities, and consumers expect seamless connectivity at every step. Whether streaming on Facebook Live from the big game, monitoring stock market

changes on the subway, or uploading critical field data, mobile data is powering the way we move through life.

Carriers are expanding their networks in rural areas and working to build out 5G infrastructure as quickly as possible to support the capacity demands of so many devices. However, deploying 5G is not as simple as upgrading existing equipment.

To be in a position to gain the most profit as connectivity demands increase, wireless carriers and their vendors must build out their 5G network while supporting and even expanding their current infrastructure. Accomplishing this requires new training programs and a dramatic increase in operational efficiencies.

What is 5G?

5G networks operate based on a series of small cell sites. Each of these sites must be installed and connected to make 5G speeds available. This fundamental shift means that instead of building and maintaining a large tower to provide up to 45 miles of coverage, carriers will install and maintain small cell sites as close as every 500 feet. The sheer density of a small cell 5G network and the number of sites that must be installed and deployed translates into a substantial increase in labor demands.

Once deployed, 5G promises a dramatic increase in speed. Current 4G LTE networks deliver a peak data transmission speed of 1GB per second. Experts expect fully-deployed 5G networks to deliver speeds of 20GB per second – an increase of 20x!

It is important to note that increased data transmission speeds will not merely make the things we do online better – it will enable us to do things we cannot do now.

Why is 5G So Important?

Without 5G connectivity, the telecommunications industry cannot meet the demands of residential and business partners. This includes the advancement of:

- ✓ Telemedicine
- ✓ Smart Cities
- ✓ Medical Robotics
- ✓ Big Banking

The tower construction industry estimates that it will need to nearly double its workforce in order to upgrade America's networks to 5G.



Brandon Carr
FCC Commissioner

- ✓ Manufacturing and Industrial IoT
- ✓ Smart Grids for Energy and Utility Services
- ✓ Self-Driving Vehicles
- ✓ Connected Public Transit

Developing the networks to support advances in these industries is essential to bringing about the next revolution. When Henry Ford developed the automobile, it created an opportunity for Americans to go farther and experience more. It changed the landscape of our lives.

The connectivity is doing the same thing. Patients can improve the quality and even longevity of their lives through the advances made in telemedicine. From diagnosing a sick toddler with the flu through a mobile app to monitoring the vital statistics of a cancer patient recovering at home from chemotherapy treatment, telemedicine is just one reason that increased connectivity must be made widely available.

What is Stopping 5G?

In addition to the challenges presented by site density and the implementation of new technology and equipment, carriers and the wireless construction industry must continue to maintain the existing infrastructure while funneling assets and resources toward the development of a 5G network.

One major hurdle standing in the way of 5G network development is a lack of skilled labor. There are simply not enough experienced workers to handle the build-out of an extensive 5G network while maintaining and even updating the country's existing infrastructure.

Sixty-eight percent of workers claim that Training and Development is the most important company policy.



ClearCompany

5G implementation demands workers with radio frequency (RF) engineering knowledge and range of service experience. In many cases, these engineers must review designs and assess feasibility. It is not enough to just follow the plan presented. Instead, engineers developing a 5G network must verify that the placement of each site will meet the coverage needs of the project.

As the population moves away from trade-based professions, it is becoming increasingly difficult to educate and prepare enough resources to fill these positions.

In the United States, this gap is attributable to baby boomers moving out of the workforce by 2030 and younger generations not taking on the training needed to replace these workers. So how do we solve for this crisis?

Werner Penk, president of Korn Ferry's Global Technology Market practice, sees only one solution: "As with many economies, the onus falls on companies to train workers and also to encourage governments to rethink

education programs to generate the talent pipelines the industry will require."

Companies that will experience the most significant impact of resource shortages must begin training new workers, encouraging governmental support of education programs, and rethinking the way they manage projects.

To meet the demands of educating a new workforce while maintaining existing business growth and even expanding, companies must turn to experts in efficiency who can breathe new life into old processes.



02

Filling the Gap



To prepare for the future, wireless carriers and their vendor are developing and supporting training programs and looking for innovative partners.

Training to Gain an Advantage

In many ways, it is up to the wireless telecommunications industry to begin preparing their future 5G network laborers. To accomplish this, some are electing to create mentorship programs that partner seasoned workers with new hires. This enables new hires to build a foundation of wireless construction knowledge and RF knowledge while working in the industry.

To further support the development of a skilled labor force, companies are also implementing internal education centers.

These centers combine education in the latest industry innovations with company- and industry-specific standards to develop an employee that not only understands the technology and has the skills to implement it, but also knows how requirements change from one carrier to the next.

Utilizing an approach that educates workers in a way that encourages knowledge retention and verifies the real-world application is critical to the success of internal programs. It also creates an environment in which existing workers can participate in an educational program that creates opportunities for mobility within the company and eases continuing education and recertification burdens.

Preparing for the future of the wireless telecommunications industry is critical to the success of many other technological advances across a vast number of industries. As such, it is in the best interest of those both inside and outside the industry to begin tackling the labor gap and developing resources that streamline wireless construction education.

**Always deliver
more than
expected.**



Larry Page
Co-Founder of Google

Relying on Centers of Excellence

One way that telecommunications carriers are preparing for this skills gap is to partner with vendors that have the in-house capacity to manage projects effectively.

Companies with a fully-functioning and experienced Project Management Office (PMO) provide the extra bandwidth needed to support project managers that are already carrying a large workload and need assistance to accomplish large-scale projects.

Fully-staffed PMOs provide a full cycle program management model to bring projects to organized and effective completion. By identifying bottlenecks early and planning mitigation into the process, projects are completed on-time and on-budget.

In large-scale carrier projects, a construction oversight company with an in-house PMO provides carriers with:

- ✓ Site upgrade solutions
- ✓ Advice on best fiber paths
- ✓ Proactive schedule management
- ✓ Program and project cost management
- ✓ Scalable staffing models
- ✓ Vendor coordination

Companies with evolved and mature Centers of Excellence provide customers with an opportunity to improve their current projects and prepare their workforce for the demands of tomorrow.

**You will be
defined not just
by what you
achieve, but by
how you survive.**



Sheryl Sandberg
COO, Facebook

Utilizing Vendors to Fill Talent Gaps

Wireless carriers rely on a broad group of vendors to complete projects. Each vendor brings a specific set of skills to fill in gaps and complete the project efficiently.

Whether your team is missing specific skill sets in a geographic region or does not have the in-house talent to manage a task, partnering with the right vendor can solve for both current and future needs.

Utilize vendors that routinely train their employees and provide internal mentorship programs to ensure that the latest technological advancements and skillsets are employed on all projects. Not only will project success soar, but your in-house teams will gain the benefit of working alongside highly-skilled experts.

Companies that prepare their workforce and processes now for the emerging skills gap and worker shortage are poised to capture the onslaught of new opportunities that will result when supply can no longer keep pace with demand. Secure reliable, experienced vendors now to ensure that your company is prepared to benefit from the need for highly-skilled workers.



03

Driving
Operational
Efficiencies



In the wireless telecommunications construction industry, a Project Management Office (PMO) is the exception rather than the rule? Why?

The primary reason for PMO scarcity is that few organizations understand what a PMO brings to an organization. The functions of the PMO and Project Managers are often conflated, and since Project Managers are already in-place, a PMO seems redundant and unnecessary.

Within a healthy PMO, the primary responsibility for managing projects rests with the PM. The PMO provides support, tools, and governance that enable the PM to perform at their best.

Implementing a PMO allows businesses to do more with their current skilled labors by alleviating administrative responsibilities and ensuring seamless and responsive field support.

What Does the PMO Do?

If the PMO is not managing projects, then is the office purely an administrative function? No.

The PMO is so much more than admin. A PMO, manages, supports, and develops standards, education, and continuous improvement. These standards and educational opportunities improve the efficiency and effectiveness of every PM in the field.

Many Project Managers spend their days in the field, jumping between field sites, vendors, suppliers, and customers all to keep projects running smoothly by removing roadblocks and facilitating task completion. It is challenging to get all of the information gathered in the field back to the home office and receive feedback.

The PMO bridges the space between remote PMs and the home office by providing communication and collaboration support and linking those in the field with those in the office.

How Does the PMO Support Project Managers?

The PMO provides PMs with support, mentorship, education, guidance, and governance. Project Managers often have extensive reporting requirements that may keep them tied to a desk when they should be in the field.

The PMO can step in to alleviate some of this burden by sharing knowledge and getting requests from the field to the right person in the office.

Often, each region is assigned a dedicated Project Coordinator who is readily available to help PMs fight fires, alleviate bottlenecks, and solve project-slowing problems. This approach to team collaboration has created a precedent for knowledge sharing.

Project Managers also rely on the PMO to provide reporting and documentation support, which enables PMs to do more of the work they love.

PMO Supports Education and Mentorship

From their first day on the job, Project Managers are supported by the PMO.



**Your value will
not be what you
know; it will be
what you share.**



Ginni Rometty
CEO, IBM

In the highest functioning PMOs, training begins by spending time in the PMO learning about all of the available resources.

In addition to learning about PMO support, new PMs are thoroughly trained on all company tools so that from their first day in the field, they are educated and ready to go. When the PM starts in the field, the PMO provides constant support for the first 90 days. After the first 90 days, assign the PM a local mentor to guide the new hire past potential pitfalls.

A new hire supported by the PMO gives new PMs more certified training in the first 30 days of employment than many would receive in a year of employment without a PMO.

The scalable, flexible design of the PMO allows every team member to access industry standards and best practices from anywhere in the field or the office. With the backing of the PMO, PMs have the resources they need to implement and adhere to those standards.

Realizing New Efficiencies

PMO implementation brings in new capabilities, both expected and unexpected. With additional reporting support, projects are, of course, more efficient. However, there is also an overwhelming change in the atmosphere of everyday work. The PMO creates a greater sense of connection between the home office and remote workers. It provides more than just governance; it gives field workers a renewed passion for growth.

This passion for growth allows teams to tap into existing staff and allocate five to ten percent of an SME bandwidth to mentor co-workers and begin filling skills gaps internally.



04

Conclusion



There are Endless Opportunities to Scale...Don't Miss Out!

The wireless construction industry is sitting on the verge of a fantastic onslaught of opportunities. From supporting existing infrastructure demands to building out 5G networks, those companies that prepare the right systems, vendors, and skilled resources stand to play the most prominent part in this market explosion.

Begin building vendor networks, streamlining operational efficiencies, and developing skilled labor educational programs today and be prepared to scale your business to meet the construction and connectivity demands of the very near future.

Let Vertex Innovations help you with your next telecommunications infrastructure or data center project.

[Learn More >](#)



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