



Case Study

How one of the largest package delivery companies in the world uses iBwave to deploy & manage their Wi-Fi networks across thousands of sites.

INTRODUCTION

As one of the largest package delivery and logistics companies in the world, one of our newest iBwave customers came to us wondering how our software could improve their existing process for deploying and managing their many Wi-Fi networks across tens of thousands of facilities around the world.

WHAT WERE THE KEY CHALLENGES?

From the start, it became clear that the biggest challenge they were facing was just the sheer number of sites they had to manage around the globe. With tens of thousands of facilities, all ranging in size, type and location, logistical and process challenges were proving to be costly.

Here are the four main challenges they were experiencing prior to iBwave.

1

Managing Thousands of Sites and Sharing Survey Information

How to design, deploy, and manage the Wi-Fi networks for the thousands of facilities they had around the world, in an efficient and cost-effective way? And how can documentation be better shared and accessed by the teams on the ground at all of those facilities to reduce troubleshooting time and costs?

2

Streamlining Site Surveys & Enabling Convergence

How to reduce the time it takes to complete site surveys and store the information in a central repository to reduce the need to do multiple types (Cellular/Wi-Fi) of site surveys at one facility.

3

Network Design Quality & Optimization

How to optimize designs to reduce costs and improve the quality of designs to reduce troubleshooting post-installation?

4

Designing Reports & Documentation

How to reduce the amount of manual labor and time put into tracking costs associated to the Wi-Fi networks?

WHAT WAS THE SOLUTION?

The good news is, we've helped many other companies with the exact same issues, especially when it comes to managing multiple sites. It's an aspect of our software solution that sets us apart from any other competitor on the market.

Here is how we did it.

The iBwave Design Suite is a powerful combination of our robust mobile app for surveying, our powerful network design software for design optimization, and iBwave Unity, our SaaS-based enhanced cloud solution that connects them both and provides a simple way to monitor, manage and access all of your sites and documentation from one place.

To give you a quick high-level overview of how they all work together, here is a visual of how they interact with one another through the lifecycle of a Wi-Fi network design project from survey to design, deployment and maintenance.

Collect Wi-Fi & cellular measurements and capture site documentation

Optimize network design & run accurate 3D predictive network simulations

Easily generate network design, implementation & costing reports

Save & share survey & site documentation in the cloud for troubleshooting & future upgrades



SURVEY



DESIGN



DEPLOY



MAINTAIN



iBwave Mobile

iBwave Unity

iBwave Design

SOLVING THE CHALLENGES

Here is how the iBwave software suite specifically helped this customer to overcome the key challenges outlined above.

Managing Multiple Sites

An Overview of the Challenge

Managing multiple sites is a big challenge for many large Enterprise companies and this customer was no exception. With tens of thousands of facilities located across the United States, the biggest challenge was how to manage the design documentation in a single location to simplify the maintenance and troubleshooting of the network for the 'Corporate Technical Support Group' technicians located at the facilities across the globe.

Previously when using *Air Magnet*, survey and design documentation and reports were not centralized in a place where the technicians at the different facilities could access them when troubleshooting or validating a network's performance.

There was also the issue of having to ship a *Netscout* device out to the facilities whenever a troubleshooting issue arose—often a time consuming and expensive cost.

To solve these issues, the powerful combination of iBwave **Mobile Planner**, and iBwave **Unity** were implemented.

How the Challenge was Resolved

iBwave **Unity** is our advanced cloud-based site and project management software that gave this customer a single repository to keep all of their documentation — designs, survey data, site documentation — centralized and synchronized. For the technicians on-site this means they can now easily access previous design and survey data, to have a baseline and test against.

The problem of having to ship a technician a testing tool each time was solved with our mobile app, iBwave Mobile Planner. With no dongle licensing to worry about, various sites can now keep their own mobile app (usable on any Android mobile device) and use it to survey and test each of the facilities when there was an issue.

The Business Impact

While no exact number can be given because every site and every troubleshooting effort varies, it's been seen by our customer that this solution saves them an estimated 50 hours for the average site/troubleshooting effort.

50 HOURS SAVED

-  Site Surveys
-  Network Tests
-  Troubleshooting
-  Design/Redesign
-  Sharing Documentation

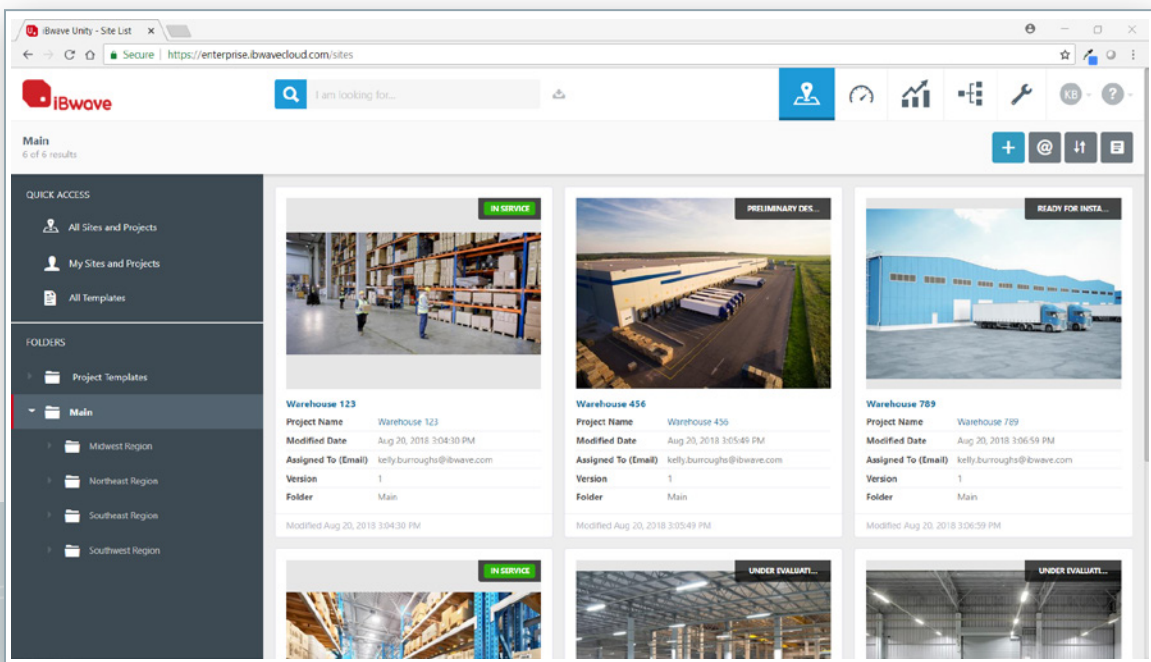
How?

Breaking it down, the estimate stems from the following:

- Having baseline design and survey documentation to start the troubleshooting
- Not having to ship a testing tool/train users on it
- Easily sharing data and information post-troubleshooting survey

Next, let's look at the challenges of being able to consider the LTE network while doing their Wi-Fi site surveys.

iBwave
Unity



Converged Site Surveys (Cellular + Wi-Fi)

An Overview of the Challenge

Convergence—a word we are hearing more and more from our large Enterprise customers when it comes to managing their network and for this particular customer, an important requirement for doing site surveys.

Why so important?

While the size of their many facilities varies, the largest and most active facilities (storage and shipping warehouses), can often span more than two million square feet and many of their apps rely on the cellular network to perform.

For that reason, it was important for this customer to understand not only their Wi-Fi coverage, but also their cellular coverage inside and outside their venues and the impact of it on their Wi-Fi network.

Prior to iBwave, to collect the data for the cellular network it was a complicated and costly process, with two main challenges:

- 1** Since they did not have the right tools or training, they had to outsource the collection of the cellular data to a third party company, leading to high costs and very long delays, often taking weeks to complete.
- 2** Because the Wi-Fi and Cellular data couldn't be collected at the same time, multiple site walks for the same facility would have to be performed, doubling the site survey time it could take if they just had one tool to do both.
- 3** Without a central repository for documentation, they would often have to repeat the surveys because data could not be shared properly.

How the Challenge was Resolved

These three issues were resolved with the use of our cloud-based site management software **iBwave Unity**, and our mobile app, **iBwave Mobile Planner**, to perform the surveys. Enabling full Wi-Fi active and passive surveys as well as cellular data collection with all major cellular survey tools, collecting both the Wi-Fi and cellular site data at the same time became

simple to do. And with the implementation of the iBwave Unity cloud solution, all survey data collected could now be stored in a central repository, eliminating any risk of lost data that needs to be re-collected.

By having one tool to now collect both sets of data, it also eliminated the time delays and costs associated to having to use a third party tool to conduct the cellular survey.

The Business Impact

While not able to put an exact number on it, the time and cost savings are significant now that there is no need to outsource a piece of the work, and all data that is needed for a complete design is documented. A survey that may have taken weeks before to gather all data can now be done in days.

“The ability to gather both cellular and Wi-Fi network data ourselves at the same time, in one tool without the help of a third party, is invaluable to us in terms of time, cost and documentation.” – Senior WLAN Design & Support Engineer

Finally, let’s look at the last challenge resolved by using iBwave software—design optimization and quality.

Improving Design Quality & Optimization

The Challenge

When it comes to any type of wireless network design, if the design is not done well from the start, then it can lead to two things: **1)** costly troubleshooting and re-design later, and **2)** a design that is not optimized and therefore more expensive than it needs to be.

These two issues are the main reasons our iBwave software is so focused on enabling design optimization and network performance prediction accuracy. We pride ourselves on making sure our customers have the best wireless network design software to deliver the highest quality of designs to their end-users in the most cost-effective way possible.

For this customer, the quality of the designs they were getting from *AirMagnet*, and the level of troubleshooting they had to dedicate their resources post-installation, was proving to be a costly challenge. As was the over-designing of the networks – why add more Access Points if coverage and capacity can be maximized for less?

The Resolution

Both of these challenges are ultimately resolved by the powerful features and prediction capabilities in iBwave Design. With features like 3D modeling, inclined surface modeling, propagation through floors, and prediction calibration, the quality and accuracy of the designs will improve significantly.

The Results

Accurate prediction results leads to high-quality optimized designs and ultimately less troubleshooting post-install.

Simplifying Reports & Documentation

The Challenge

Reports and documentation are part of almost any wireless network design project and it is no different for this large Enterprise customer.

Of importance for them are accurate costing reports. Prior to iBwave the process to produce these types of reports was manual, tedious and time consuming, often taking almost an hour to put one together, and often at the risk of human error as there was no way to automatically generate them.

The Resolution

With iBwave now in place, that time previously spent on manually creating reports is eliminated and costing reports are generated in a matter of seconds with one click.

Additionally, costing reports can now be generated at both the individual project basis, or across several different projects, using **iBwave Unity**. For example, if they want to track costs across particular building types (warehouses, depots, etc) or for a certain region, that is now simple to do in either a report or dashboard.

Here are some costing report examples.

Project Cost Details										
Project name:					Design company:					
Project creation date:					Design:					
Type	Manufacturer	Model	Description	Inventory#	Qty	Unit cost	Equipment cost	Construction cost		
Antenna	Antenna	3M601272P-F42	3.1GHz-3.6GHz Ceiling Mount Antenna - 600-900 MHz / 1710-2100 MHz - N-Female, 600MHz		25	31,540.00	788,500.00	0.00		
Attenuator	Cellular Specialists Inc.	30dB Variable Attenuator	30dB Attenuator 0-3000MHz 6 30dB		N/A	3	5145.00	15,435.00	0.00	0.00
Cable	Andrew	24500	120W 11m 1F Patch Cable for 18.1Port SDRing - SMA Connectors		24	340.00	8,160.00	3,960.00	0.00	0.00
Cable	RFI	RS-2-500FL	1.275m 50 Ohm Coaxial Cable RG58, 50 Ohm		N/A	1000.00	100.00	100,000.00	0.00	0.00
Cable	Andrew	75-FR100W-SM	75 Ohm Coaxial Cable - Low Loss - 100MHz - 75 Ohm		24	36.00	864.00	3,960.00	0.00	0.00
Connector	RFI	184-0712	1/8" Male BNC to 1/8" Connector for 12.75m		50	50.00	2,500.00	0.00	0.00	0.00
Filter	Andrew	DRNY	120W 11m 1F Patch Cable for 18.1Port SDRing - SMA Connectors		N/A	3	5465.00	16,395.00	0.00	0.00
Splitter	Comba	DC-20K-02000M	1:1 Verso (SMA) Connector Cable: 800-2700 MHz, N-Female Connectors 200mm and 180mm between SMA @ 2x43dBm		N/A	24	560.00	13,440.00	0.00	0.00
Corresponding datasheet: DC-20K-02000M										
				Material	616,473.00		616,473.00			
				Site Survey (30x 15x 50)	0.00		0.00	1740.00		
				Programming (20x 1500 Hz)	0.00		0.00	35,000.00		
				Total per column	616,473.00		616,473.00	184,440.00	0.00	0.00
					Grand Total		616,473.00	184,440.00	0.00	0.00
Nb floor	total area	equipment cost	construction cost	total total						
01	20712.28 sq.m	18,617 / sq.m	87,597 / sq.m	65,214 / sq.m						

Project Cost Details										
Project name:					Design company:					
Project creation date:					Design:					
Type	Manufacturer	Model	Description	Inventory#	Qty	Unit cost	Equipment cost	Construction cost		
Cable	Generic	CAT-5	Category 5 cable	N/A	1377.46 feet	\$0.00	\$0.00	\$0.00		
Connector	Generic	RJ-45	RJ-45 connector	N/A	44	\$0.00	\$0.00	\$0.00		
Network Equipment	Ruckus	Smart Controller	24-port GbE Web-Managed PoE Switch	180005	3	\$0.00	\$0.00	\$0.00		
Radio Transceiver	Ruckus	ZoneFlex R500 (2016-08-12)	ZoneFlex R500 Series - 802.11ac, Dual-Band Concurrent, Indoor Access Point - Int. Omni-Directional 2x2	901-R500-XXXX	19	\$645.00	\$12,255.00	\$0.00		
Radio Transceiver	Ruckus	ZoneFlex R700 (2014-10-01)	ZoneFlex R700 Series - 802.11ac, Dual-Band Concurrent, Indoor Access Point - Int. Omni-Directional 3x3	901-R700-XXXX	3	\$995.00	\$2,985.00	\$0.00		
							Subtotal	\$15,240.00	\$0.00	\$0.00
							Total per column	\$15,240.00	\$0.00	\$0.00
							Grand Total	\$15,240.00	\$0.00	\$0.00
Nb floor	total area	Equipment cost	Construction cost	Grand total						
3	0 Sq. feet	-	-	-						

Conclusion

By using the powerful solution of **iBwave Unity + iBwave Mobile Planner and iBwave Design**, this large Enterprise customer is now able to manage the thousands of sites across the world from a single location – resulting in higher-quality Wi-Fi networks and less time and money spent troubleshooting them.

