



White Paper



Lowering Total Cost of Ownership for Self-Service Solutions

CSA's Turnkey Lifecycle Solutions Model Delivers High Quality Self-Service Solutions While Driving Down Total Cost of Ownership

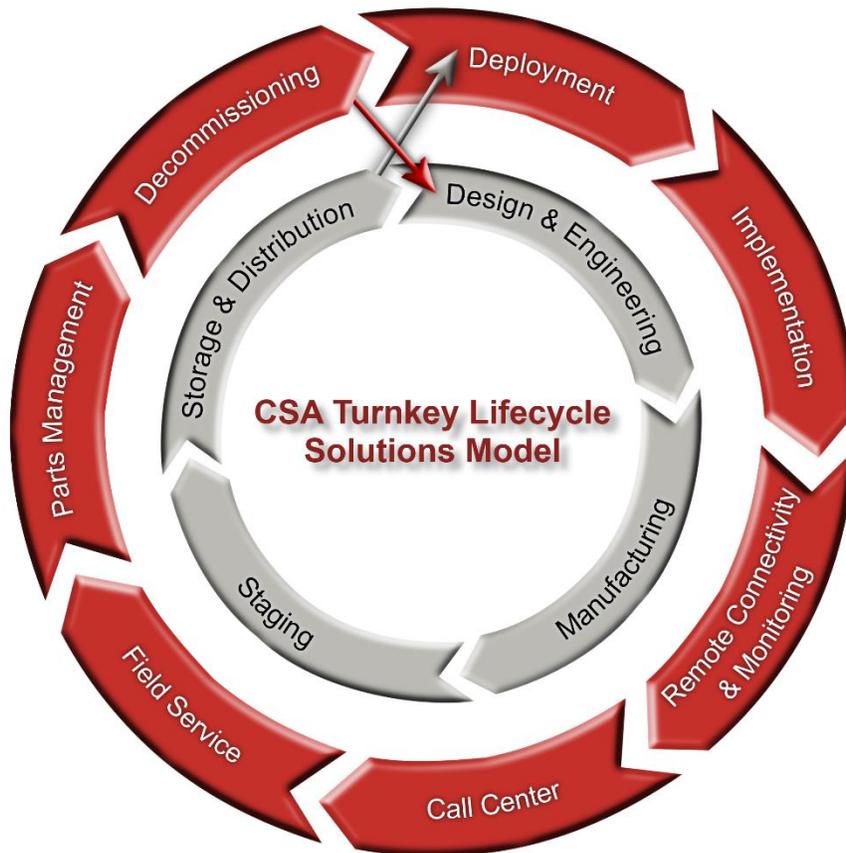


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Executive Summary

How much does a self-service solution really cost? Often those who purchase self-service solutions fail to take in to account the Total Cost of Ownership (TCO) of their investment. The result of not being informed or aware of the total cost of a solution over the entire lifecycle can sometimes be very costly and frustrating.

With self-service solutions, TCO is critically important to understand. The mistake that's often made is basing a purchasing decision on the cost of the physical product without taking into consideration the deployment, operating and maintenance costs associated with owning a self-service solution. Not taking TCO into consideration when evaluating self-service solution providers can lead to two potential traps. One is choosing a provider that only manufactures products and provides no support after the sale, which leaves you on your own to figure the rest out. And the other is choosing a provider that doesn't fully disclose the ongoing operational and maintenance cost leaving you exposed to having to pay whatever they decide to charge for the services and spare parts that you may be dependent on.

CSA's Turnkey Lifecycle Solution Model is designed to take the guesswork out of understanding TCO. The word *turnkey* means that we do it all. We're a premier service operations solutions provider and an innovative self-service manufacturer. The word *lifecycle* means we're there to support you from product creation to decommissioning. We provide upfront competitive pricing for every phase of the lifecycle which makes accurately predicting TCO simple and straightforward.

Not only does our model simplify understanding TCO, it also significantly lowers TCO by implementing innovative manufacturing and service operations strategies that maximize efficiency and resource utilization. This white paper takes a closer look at the cost components that make up the typical self-service lifecycle and expands upon how we are able to lower costs throughout the lifecycle, while actually improving quality. We'll delve into the strategies we've implemented to streamline our service operations. Then we'll look our strategy for lowering manufacturing costs by examining the advantages and disadvantages of the two traditional self-service manufacturing models and introduce a new integrated model that capitalizes on the quality and cost advantages of both models.



Typical Self-Service Lifecycle Costs

When purchasing a self-service solution it can be easy to overlook some of the costs associated with owning and operating it. Most reputable self-service manufacturers provide what is required to produce a product. This typically includes design, engineering, manufacturing, staging and shipment. However, there are other costs that need to be considered when evaluating a self-service solution.

CSA's Turnkey Lifecycle Solutions Model provides all of the product and service cost elements that encompass the typical self-service solution lifecycle. Here we'll cover the elements that come into play after the finished product is ready to ship from the manufacturer.

Storage and Distribution

There are several factors that can affect the timing associated with the deployment of a self-service solution. These factors include site locations, site readiness, availability of installation resources and sometimes the availability of end-user training resources. Effective deployments require a coordinated plan to insure that each product arrives at the right place and at the right time. A safe and secure storage location is needed until each site location is ready for the product to be installed.

Deployment and Installation

An effective deployment consists of a centrally managed deployment project team that collaborates with the client and the installation technician for each site location to set expectations, ensure site readiness, coordinate shipments and setup installation technician schedule. This team should clearly understand all requirements including technical scope, scheduling parameters, site survey requirements, pre-site planning and on-site installation requirements of the project.

Cellular Connectivity

With most self-service solutions it's important to have the capability to proactively monitor real-time data and to have control over your products remotely. This capability requires that each product is equipped with the right cellular connectivity hardware along with right wireless carrier service plan. This requires determining the ideal hardware and carrier to ensure optimal performance based on the application, environment and geographical locations of your products.

Remote Monitoring

This requires specialized software that allows you remotely monitor and manage your products. Ideally, the software should have built in security with the capability to provide instant fault alerts, utilization reporting, remote diagnostics, remote software updates and remote refreshment of advertising messaging. Along with the software, you'll need available resources that are trained on how to operate the software.

Call Center

When there's a problem, your clients will need available and responsive telephone support. A well run call center should have trained and knowledgeable personnel that are equipped with the support tools to remotely troubleshoot the problem and provide a prompt resolution. If the problem can't be resolved remotely, they need the systems in place that enable them to source any parts that may be needed to resolve the problem and dispatch the closest available field service engineer for an onsite repair.

Field Service

Most self-service products will require maintenance and repairs to be performed on-site. Most businesses that deploy a nationwide self-service solution don't have a nationwide team field service engineers to deliver the on-site maintenance, which leaves them with a couple of options. They can attempt to provide the field service themselves, which can be very expensive and delay response times. Or they can partner with a third party service provider that already has a nationwide field service team in place. When evaluating a service partner, it's important to verify that their technicians are thoroughly trained and equipped with the latest tools, technology, spare parts and resources required to efficiently resolve customer problems.

Spare Parts Management

Often one of the largest contributors to extended product downtime and repeat service visits is the inability to source repair parts in a timely manner. Even if a technician is local, they can't resolve the problem without the required parts. Therefore, having a spare parts inventory and distribution strategy is critically important. The best strategy is to utilize a system that can accurately monitor inventory levels and track parts delivery and returns. In addition to a system, a distribution strategy should be implemented to manage shipping cost. This requires a thorough analysis to determine warehousing locations and inventory requirements.

Decommissioning

With the fast pace that technology evolves, the day will come when your current self-service products reach their end of life and need to be decommissioned. Although, removing a product from a client's facility doesn't seem to be that complicated, there are some important aspects of decommissioning that need to be considered. Can it be locally resold, scrapped or recycled? Is there sensitive data that needs to be securely removed? Is dismantling, cabling removal and cleanup required? If you're replacing your older product with a new one, then ideally your installer should have the capability to decommission the old one. The bottom line is that the right decommissioning strategy will save you time and money.

Service Operations Strategies that Reduce Total Cost of Ownership

Our roots are in the delivery of quality service operations solutions. CSA was founded in 1998 and over the years we've gained a wealth of experience that we've used to continually refine our service delivery strategy to minimize operating cost and improve quality. Here are some of the strategies that contribute to our ongoing effort to decrease TCO for our clients.

Advanced Service Management System

One of the fundamental elements required to run an efficient service organization is an advanced service management system. The system that we operate on enables us to efficiently administer contracts, scheduling, parts, and analytics, while also providing a web based client portal. It's a cloud based solution with mobile applications that run on any mobile device. Our field service workforce is equipped with the mobile technology that increases their productivity and improves customer response time. It provides visibility into spare parts stock during the scheduling process and ensures that the right technician with the right parts is dispatched, thereby increasing first-time fix rates. Our system ensures that critical contracts and entitlement data is accurate, available anywhere, and visible to the right parties throughout the service delivery cycle.

Modernized Training System

In order for a service workforce to have the skills to promptly resolve customer problems requires effective and ongoing training. However, instructor led classroom training can be expensive. To cost effectively keep our workforce well trained, we implemented a training system that enables us to accelerate and maximize employee performance. The system allows us to combine instructor-led classroom training with self-paced, virtual classroom, mobile and online training which provides an inexpensive and timesaving way to keep our workforce well trained, compliant and highly competent.

Creation of a Lean Field Service Workforce

The greatest challenge of operating a nationwide field service workforce is maximizing service engineer utilization by evenly distributing the workload along with managing high travel costs and meeting response time commitments in remote geographic locations. We addressed this challenge by employing a strategy that leverages on our industry diversity and professional workforce. In addition to being a service provider in self-service industry, we also are a service provider in several other high-tech industries. This industry diversity combined with a professional and adaptable workforce allow us to cross train and strategically place our field service engineers in geographical locations that maximizes their utilization and on-site response time while minimizing travel costs.

Advanced Quality System

We've implemented service quality standards and processes that are designed to ensure that the services we deliver are consistent and cost-effective. These quality standards represent the range of business practices and processes that are required to economically deliver the highest quality service. We regularly monitor key performance metrics to ensure we have optimized our business

processes to drive the highest levels of operational performance, efficiency and customer satisfaction.

Strategic Facility Location Strategy

We took several factors into consideration when deciding on the geographical location of our facilities with the objective of minimizing our operational cost without compromising quality. Our strategy was to pick economical locations that would minimize distribution cost for spare parts and equipment. To meet our distribution objectives required two facilities. One to serve the western half of the US and one to serve the eastern half. To meet our economic objectives we chose locations that had lower infrastructure and labor costs. We also factored into our decision areas that have universities and technical colleges that provides us with a local talent pool to pull from.

Innovative Manufacturing Strategy that Reduces Total Cost of Ownership

Does lower price mean lower quality? Many believe that higher quality can only be produced at a higher cost. Therefore, they assume that higher prices imply higher quality. And typically when comes to quality, you get what you pay for. However, with self-service products that's not always the case. CSA's innovative manufacturing model has proven that you can produce high quality products at a very competitive price.

We'll take a look at the advantages and disadvantages of the two traditional self-service manufacturing models and introduce our new integrated model that capitalizes on the advantages of both traditional models.

Traditional Manufacturing Models

The two most common self-service manufacturing models that are widely used are domestic and offshore, which both have their advantages and disadvantages. Proponents of offshore manufacturing say the lower operational and labor costs are among the primary reasons why companies choose to outsource. Lower production costs mean it is possible to produce each self-service product for less money, making it easier to sell them at competitive prices in the marketplace.

Where offshore manufacturing has the potential to do the most damage is decreased quality control, minimal product development/improvement and lower quality materials and workmanship that go into the products. The other tradeoffs are higher shipping cost, flexibility between production, supply chain control and speed to market.

Proponents of domestic manufacturing typically have established manufacturing facilities in the US and believe that the only way to ensure quality is to be totally in control of all aspects of production. They see obvious quality advantages to having design engineering integrated with production operations. Furthermore, they have more control over the supply chain to ensure timely delivery of materials, the ability to quickly address any product defects and reduce lead times.

Where domestic manufacturing falls short is that it's more expensive, making it more challenging to be price competitive. This becomes more of a risk factor in the self-service industry because rarely would a customer just purchase one self-service product. Self-service purchases typically range from a minimum of 100 units to as much as 10,000 or more. Due to the size of some self-service orders, competitive pricing becomes critically important.

CSA's Integrated Manufacturing Model

After a thorough evaluation of the pros and cons of domestic and offshore manufacturing, we determined that the optimal solution was to create an integrated model that capitalized on the pros of both models. We took a common sense approach to determine where certain manufacturing

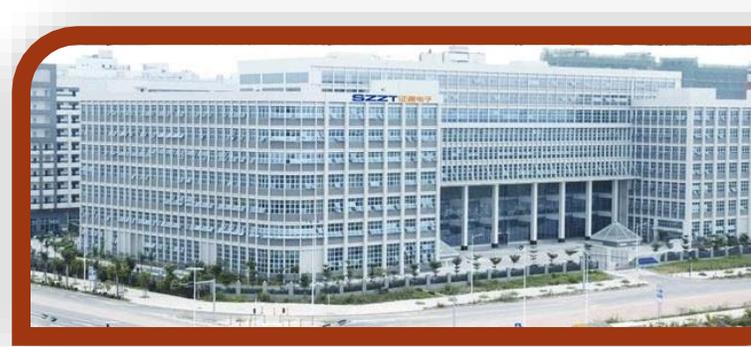
The integrated model capitalizes on the advantages of both models by combining the low cost advantages of offshore manufacturing with the quality control advantages of domestic manufacturing.

functions should be located. The right location of these functions is driven by quality, cost and availability of talent.

To keep manufacturing cost low we partnered with SZZT who is the leading self-service product manufacturer in China. To

maintain a high level of quality control we perform the final assembly, component integration, staging and testing at our US facilities. This allowed us to implement a quality assurance program that comprehensively tests every self-service before it leaves our facility. This model also gives us more supply chain control through the implementation of a sourcing strategy that emphasizes leveraging purchasing power, identifying suppliers globally based on their products and capabilities, and regularly evaluating supplier performance.

With our integrated manufacturing model, we regard ourselves less as manufacturers, but more as manufacturing managers. As manufacturing managers, we focus on managing our strategic partnerships with our supply chain, logistics and manufacturing partners. We've created continuous improvement communication loop with each of our partners to ensure that the all self-service components and the finished products are consistently reliable.



Offshore Capabilities

We chose SZZT as our manufacturing partner because of their proven track record as China's leading self-service product manufacturer. SZZT is located in the SZZT Industrial Park in Shenzhen, China.

Their commitment to quality is reinforced by their ISO9001: 2008 certification and their implementation of a six sigma total quality management system.

Their plant covers a floor area of 32,000 square meters and a building area of over 110,000 square meters and has the capacity to produce over 100,000 self-services annually. SZZT employs a proven design, engineering and manufacturing processes resulting in a shorter time to market, reduced risk, lower manufacturing costs and enhanced product quality.

With the SZZT partnership we provide both customized and standardized solutions. With SZZT's portfolio of standardized self-service products and our combined design and engineering capabilities, we have the flexibility to provide solutions to meet a wide variety of self-service needs. For custom solutions, our designers have a collaborative system in place to combine our expertise with the SZZT design and engineering team to enhance creativity and ensure that system design and functionality specifications are accurately communicated and met.



The advantage of our standardized solutions is that they're more cost effective and can be delivered rapidly by utilizing a modular design methodology and employing established protocols for hardware and software. This also allows for the rapid development of prototypes for pilot phases. After a successful pilot phase, we can ramp up production to volumes that can exceed 1000 units a week.

Domestic Capabilities

Our two US facilities located in Utah and Tennessee and are equipped with the latest technology to reliably provide assembly, integration, staging and secure storage. Both facilities follow stringent quality processes to ensure that the products produced are consistent in both quality and dependability.

Our facilities are strategically located to minimize operating cost in three primary areas...distribution, commercial property and skilled labor. We are able to minimize the cost associated with nationwide deployments by having facilities that serve as deployment hubs for each half of the US. Also, our facilities are located in areas where the commercial property prices and skilled labor costs are below the national average.



The 20,000 square foot Utah facility serves the western half of the US while the 60,000 foot Tennessee facility serves the eastern half. Additionally, the Tennessee facility has access to an additional 30,000 square feet of secure warehouse storage, which provides us with the capability and capacity to undertake large engagements with minimal delay.

Our US facilities are staffed with a professional self-service team with expertise in design, engineering, software development, program management, manufacturing, total quality management and service operations. We also have unique expertise working with the FDA. CSA's compliance and validation team are FDA regulation specialists that provide services directly to FDA-regulated companies. Leveraging this expertise enables us to ensure that there will be no surprises when dealing with FDA regulations.

Conclusion

It's clear to see the value of understanding TCO when evaluating self-service solution providers to truly comprehend the total lifecycle cost of the solution. And failing to take TCO into consideration could result in choosing a solution that has hidden problems and cost that show up over the long-term.

The advantage of CSA's Turnkey Lifecycle Solution Model is that you know exactly what the TCO is upfront with no surprises or hidden costs. And we're there as your partner to support you throughout the lifecycle. If there's a problem, we own it and get resolved promptly. We also have a stake in the dependability of our products. What you pay for support is fixed throughout the lifecycle, however, our cost to deliver that support is not. Therefore, it's in our financial interest to produce reliable high quality solutions.

In addition to providing predictable cost and ongoing support throughout the lifecycle, we're committed to driving cost down. We're always working to refine the service delivery and manufacturing strategies covered in this white paper to continually increase the value of the solutions we provide.

To learn more about how CSA can help make your self-service project successful and on budget, visit www.csakiosk.com.