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### Enclosures: The heart of speedy telecommunications products and services

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By Ken Tumbison, President of Buckeye Shapeform | Tuesday, August 16, 2011



Speed. There is nothing of greater consequence in human communication than speed. Although we have come a long way since the pony express, the need for speed in the telecommunications industry is greater now than ever. Consumers not only demand fast transfer of vast amounts of information, but rapid rates of innovation can make today's technology obsolete seemingly overnight. To accommodate new telecommunications applications and ever-increasing data transfer requirements, consumers' servers need upgraded, bandwidth needs expanded, software needs developed, infrastructure needs built, and devices need created. And nearly every aspect of providing the latest, fastest, and highest-quality telecommunications products and services possible relies on enclosures with the capacity to serve as the centerpiece of the effort.

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Just as telecommunications industry leaders must predict and respond to the rapid change in demand for sophisticated and customized products that accommodate consumers' needs for speed, telecommunications equipment manufacturers supporting them are also beholden to market demand. In other words, the enclosures housing telecommunications technology must be produced and delivered rapidly, sophisticated enough to serve countless custom applications, and flexible enough to accommodate future market innovations as they reach the marketplace.

In an era when speed can mean the difference between a business's success or failure, telecommunications industry leaders must not just simply stay up with industry trends, but must be able to stay ahead of consumer demand. A large part of that effort is partnering with an enclosure supplier with the same goals and capabilities.

**Rapidly delivering data and equipment**  
 Not only are telecommunications industry leaders expected to make data transfer as fast as possible, but technological innovation in the 21st century moves at breathtaking speeds. Product life cycles are becoming shorter as industry leaders develop newer and better ways to provide consumers with the tools they need to succeed. Success, then, is dependent upon speedy and responsible collaboration between telecommunications innovators and their equipment suppliers. Enclosure manufacturers must have the expertise, experience, and capacity to meet impossible deadlines, to do more, faster, and to participate in all parts of the design and fabrication process in order to help you quickly adapt to consumer demand for new products and services.



Because success depends upon speed, providers of telecommunications products and services should choose an enclosure manufacturer that demands speed of itself. The enclosure manufacturer should take pride in on-time and per-spec delivery, making it quick and easy for telecommunications leaders to source cases that are ready for installation for virtually any application.

What makes such swift and accurate enclosure fabrication possible is found in the people and processes within the enclosure fabrication factory. First, enclosure design engineers should be trained and experienced on the latest CAD and 3D [design software](#). Next, after completion of the enclosure design, all human error should be removed from the fabrication process by seamless integration of the design software with state-of-the-art fabrication equipment. Such equipment cuts the enclosure to the required shape, punches the precise holes, accurately bends the material, removes rough edges, applies proper screen printing, and effectively completes the case in one fluid, streamlined process—all under one roof. This enclosure-fabrication process saves time and money for telecommunications industry leaders by allowing them to get products and services to market more quickly and more cost-effectively than their competitors.



**Customizing to sophisticated requirements**  
 As telecommunications industry leaders know, not only does every customer have specific telecommunications needs, but today's complicated telecommunications applications require a level of sophistication and expertise unknown to past generations. The enclosures housing the applications are no exception.

Depending on the application, enclosures may need to be in any shape or size. They may require a variety of hole punches. For mounting electronics, enclosures often require specific self-cinching inserts such as studs, standoffs, blind

studs, captive nuts, spring latches, rivets, and right angle standoffs. To create any shape enclosure and to ensure a uniform finish coating, dedicated CNC milling equipment should be used prior to finishing the material. If a durable and attractive finish is needed, metal enclosures are often treated with both an undercoat and a top coat of powder paint, water-based paint, or vinyl-clad aluminum. Other enclosures require effective shielding, ensured by utilizing overlapping seams and multiple fasteners, copper-beryllium and metal-impregnated gasketing, copper-nickel paint, and the placement of additional fastening hardware. Still other enclosures require single or multi-colored screen printing.

Custom enclosures sometimes require custom accessories, such as handles, feet and mounting solutions. 3D modeling is also necessary prior to fabrication in order to be sure that the custom case meets all the requirements of the specific application. And most importantly, money and time can be saved by outsourcing all these intricate value-added, customization services to a single enclosure manufacturer with the capability of performing all customizations in-house.

#### Specializing in unique orders

Because of the nature of today's telecommunications environment, providers of telecommunications products and services receive job requests of various sizes. On one hand, a small start-up may simply need networking capabilities. On the other hand, multi-national corporations may need telecommunications infrastructure to support millions of consumers on vast communication networks. To handle all types and sizes of applications, the ideal manufacturer is small enough to handle single or periodic orders, yet large enough to handle production-line orders in the tens of thousands—all with the ability to provide the same level of customer service to any customer, regardless of the order's size.

#### Defining customer service

The right enclosure manufacturer also understands that the dynamic telecommunications market is constantly changing. Such constant change requires resources that are often hard to come by, and the manufacturer's expertise is critical for you to be able to meet your customers' needs, even when you're strapped for resources. This expertise, coupled with an unparalleled level of technical service from start to finish, can be found at Buckeye Shapeform.

These real-world examples illustrate the many benefits of using Buckeye Shapeform for any telecommunications enclosure need:

- **Weather Data Gathering Technology.** Lockheed Martin's LMG-6, an advanced technology device used to capture radio signals from weather balloons and satellites, required a special enclosure to house the product. The company contracted the experts at Buckeye Shapeform for a solution. The LMG-6 required a 3.5" x 11" enclosure that was typically available at only a 1.75" x 10" or 12" size. In addition, the company wanted the option of setting the [instrument](#) on a flat surface, such as a desk or table, or installing the instrument within a self-standing rack to conserve space in military or commercial ships. Buckeye Shapeform modified its FC Series enclosure to fit the LMG-6 specifications and added a customized frame and adapter to the case so it could be installed within a 19" rack. Lockheed Martin has since developed three variants of the LMG-6 and called on Buckeye Shapeform to design each instrument's enclosure.
- **Automation System Solutions.** Industrial Indexing Systems, Inc. is a leading supplier of innovative automation system solutions including automation controllers, single and multi-axis servos, stepper controls, I/O, operator interfaces and associated hardware. Since many of its products require customized enclosures to house its complex components, Industrial Indexing has relied on the expert enclosure consultants at Buckeye Shapeform for years. Buckeye Shapeform recently suggested a re-design of their Emerald EMC-2000 in order to more efficiently and attractively package its components. Buckeye Shapeform utilized its Plastic Enclosure Technology (PET) to create a uniquely-sized, multi-unit enclosure with a metal rear mounting panel, emerald green ABS material, EMI copper-impregnated shielding paint, self-clinching inserts and card guides.
- **Computer Network Testing Machine.** Spirent Communications enlisted Buckeye Shapeform to customize an enclosure for a computer network testing machine, the EV-DO Network Emulator. Challenged by a tight deadline and by Spirent's needs for the enclosure to fit around a key component built by a third-party manufacturer, Buckeye Shapeform determined that the VersaFlex enclosure, Buckeye Shapeform's most versatile and customizable enclosure, would be the best solution for enclosing Spirent's existing component while still providing a functional space for the EV-DO Network Emulator. During the final stage of the project, Spirent's third-party manufacturer announced the discontinuation of its component and launched a new product in its place. To resolve this unexpected change and provide Spirent with a functional product despite the redundant steps in the process, Buckeye Shapeform redesigned the VersaFlex enclosure to encompass the new component and delivered the final product in less than six weeks.

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