

The String Machine Game Changer

Installment 1 of 3

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Game-Changer: String Machine Adoption in the Bowling Industry

When most people go out for a night of bowling fun they don't think about how the pins are picked up and put down. But the modern sport of bowling would be far different (and far less enjoyable) if not for essential pieces of equipment, known as pinspotting machinery.

Pinspotting Machines Enabled the Growth of Bowling

Pinspotting machines have been a centerpiece of bowling entertainment for over seven decades. The first automatic pinspotter was introduced in 1946 and considered game-changing technology at the time. It streamlined the laborious task of spotting bowling pins which, until then, had been done manually by "pin boys." It would not be an exaggeration to say that the advent of automatic pinspotting machines was a key driver for bowling's meteoric rise in the decades that followed.

**Back in the day:
Until about 1946,
bowling pins were
set and reset manually
by "pin boys."**

Types of Pinspotting Machines

Fast-forward to today and you'll find two types of pinspotting machines in use in bowling centers around the world: free-fall and string machines.



Free-Fall Machines

Free-fall machines derive their name from the fact that the bowling pins are not attached to anything as they go through the pinspotting process. As they sit untied on the pin deck, a combination of mechanical fingers and cups pick them up and re-spot them. The first automatic pinspotter was a free-fall machine, and this is still the most prevalent type in use today.



String Machines

Invented in the mid-60s, string machines lift and re-spot pins by connecting them to a drive mechanism using cords. String machines have fewer parts, require fewer adjustments, and demand less maintenance than their free-fall counterparts.

QubicaAMF Free-Fall Pinspotter

- 1946** AMF introduces the world's first automatic pinspotter
- 1952** AMF puts the 82-30 model automatic pinspotter into full production
- 1963** AMF introduces the 82-70 model pinspotter
- 1991** AMF introduces the 82-90 pinspotter
- 1996** AMF introduces the 8800 Gold pinspotter
- 2005** AMF and Qubica merge. Together, they unveil the first intelligent pinspotter, the 90XLi
- 2012** QubicaAMF introduces the XLi EDGE pinspotter, the most reliable pinspotter ever

QubicaAMF String Pinspotter Timeline

- 1973** Mendes, QubicaAMF's predecessor, introduces the Mendes String Pinspotter for duckpin and five-pin bowling
- 1990** Mendes introduces the venerable ME-90, which quickly becomes one of the most successful string pinspotters
- 2002** Qubica acquires Mendes and introduces the TMS string pinspotter for tenpin bowling
- 2008** QubicaAMF enhances the TMS string pinspotter with an easier-to-use control system
- 2019** QubicaAMF introduces the EDGE String pinspotter, the world's most innovative string pinspotter

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The String Machine Trend

Despite having been around for over five decades—and being less complex and expensive to operate than free-fall, string machines were, prior to 2015, mostly used in niche bowling applications such as:

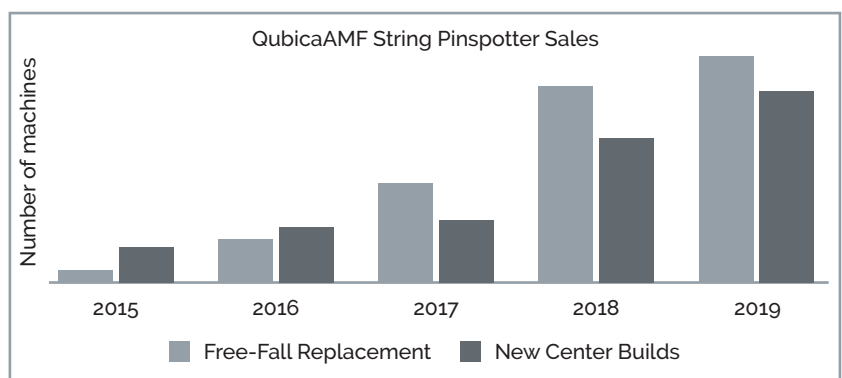
- Five-pin and duckpin bowling formats in Canada
- Tenpin bowling in a few European countries
- Mini-bowling games like QubicaAMF's Highway66

Over the past decade, however, the bowling industry has undergone some changes that play into the strengths of string machines and now they are better positioned than ever to become more mainstream.

Once dismissed, string machines are better positioned than ever to become mainstream.

Around 2015 the bowling world began to look at string machines differently. Suddenly, new bowling entertainment investors started choosing string machines instead of free-fall. In fact, since 2017, string machines have been included in over 90% of QubicaAMF's new center investor projects in the United States. 100% of these customers have chosen QubicaAMF string machines for subsequent projects.

More recently, research has shown that older free-fall machines are increasingly being replaced by string machines within existing bowling centers as well. In 2019, nearly 70% of the QubicaAMF pinspotters sold to existing bowling centers were string machines that replaced existing free-fall.



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What's Driving the String Machine Trend?

String machine adoption has never been greater than it is right now. What's driving the trend? What's changed that makes them more attractive to existing center operators and new center investors?

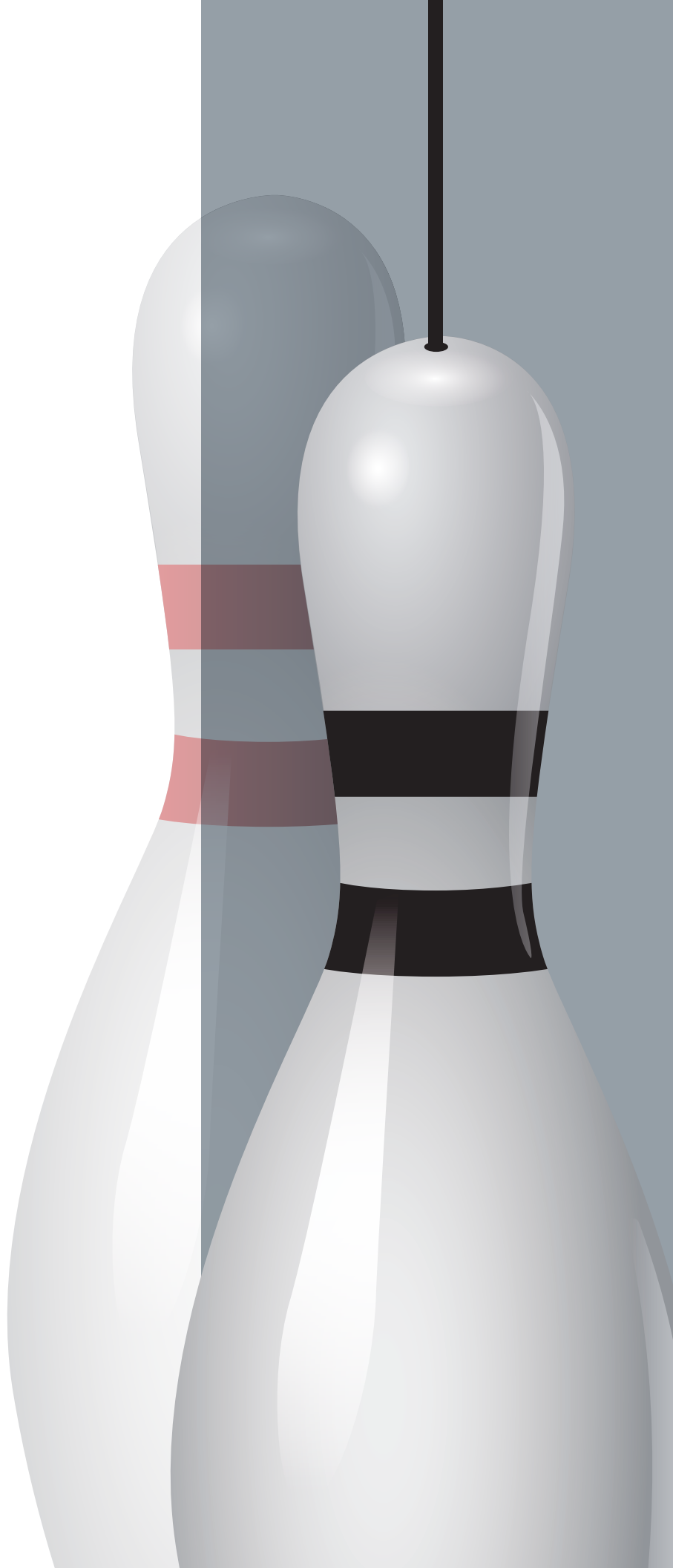
There are three primary drivers:

- Operational challenges with free-fall machines
- A transition to entertainment-focused bowling
- Increased bowler acceptance

Operational challenges with free-fall machines

In 1946, the automatic free-fall pinspotter was the engine that enabled bowling to explode in popularity. However, in 2020 studies show that free-fall machines present bowling centers with some of their biggest challenges:

- **Finding Experienced Technicians**
Free-fall machines—old and new—are complex and require skilled technicians to maintain them. It has become extremely hard to fill these positions, and the problem is getting worse as older technicians retire. Many younger people don't have an interest in becoming bowling technicians, and thus are not stepping in to fill the ranks.
- **Delivering a Great On-Lane Bowling Experience**
Today's centers must provide the best on-lane bowling experience possible



to continue earning the consumer's entertainment dollar. The shortage of bowling technicians has many centers struggling to keep their free-fall machines running reliably to deliver on this. For others, as their technicians retire, it's just a matter of time before this becomes a problem.

- **Operational Costs**

Operational costs for free-fall machines are one of the biggest challenges centers face today. Labor, parts and electricity costs that centers spend on their free-fall machines are typically between \$2.5K and \$4.5K per lane per year, and as high as \$6K in some cases. These costs vary based on things like center size, lineage, machine type and age, technician experience level and business model. Maintaining free-fall machines typically costs significantly more than other bowling center attractions, such as arcades, laser tag, or the restaurant and bar.

A transition to entertainment-focused bowling

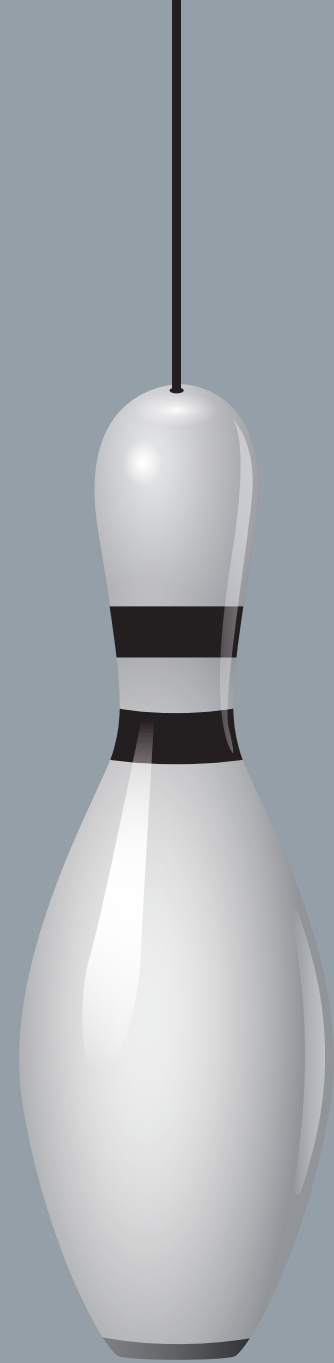
Bowling has shifted from an activity once dominated by sport leagues to an activity in which entertainment and the casual bowler are a key focus—making string machines a viable option existing operators and investors building new centers.

Increased bowler acceptance

Bowling centers operating string machines have reported many times over that the majority of their casual bowlers don't realize when they are bowling on a string machine, and of the ones that do realize, most are very happy with the experience.

Additionally, many existing centers with sport leagues that replaced free-fall machines with string machines have reported acceptance from their sport league bowlers to be high after the switch.

Considering these challenges, it's easy to see why string machines are an effective solution. Their simplicity makes it easier to find people to maintain them, easier to keep them running reliably for a smooth guest experience; and their operational costs are a fraction of free-fall machines. Moreover, acceptance by both casual and sport league bowlers is generally very good.

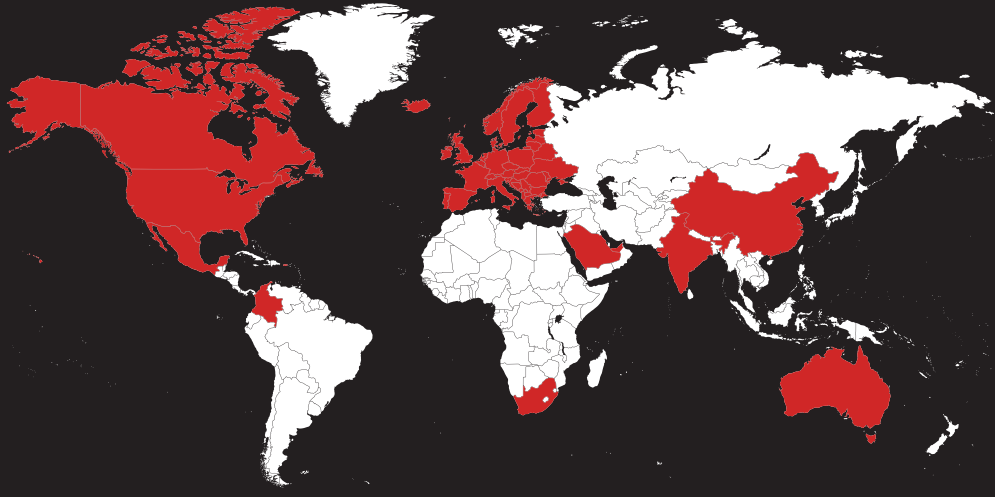


String Machine Benefits:

- Easier to operate and maintain
- More reliable for better guest experience
- Lower operating costs

String Machine Adoption is Spanning the Globe

QubicaAMF has seen over 800% growth globally in string pinspotter shipments since 2015. The map below shows the countries with the greatest rates of string machine adoption.



Across the globe some of the world's largest bowling operators are adopting string machines

Bowlero Corporation, the largest bowling operator in the world, with over 300 centers and 12,000 lanes, chose QubicaAMF string pinspotters for their last 3 new center builds, totaling 101 lanes.

Hollywood Bowl, the largest bowling operator in the U.K., with over 60 centers and over 1,400 lanes, is using QubicaAMF string pinspotters for their new center builds. Additionally, they are replacing free-fall machines within some existing centers with QubicaAMF string pinspotters.

Tenpin, the second largest bowling operator in the U.K., with over 40 bowling centers and 1,100 lanes, is replacing their free-fall machines with QubicaAMF string pinspotters. To date they have replaced over 800 of their 1,100+ lanes of free-fall machines.

TEEG, Australia's largest bowling operator, with over 45 centers and over 1,000 lanes, is using QubicaAMF string pinspotters for their new center builds. Additionally, they have replaced free-fall machines in 9 centers totaling 202 lanes with QubicaAMF string pinspotters.

What Increased String Adoption Means for the Industry

Over the past 50 years string machines have emerged from the sidelines to become a very viable and popular mainstream technology—one that's transforming the industry and expanding the reach of bowling. String pinspotters have proven themselves to be good for all types of bowling applications - from niche applications like five-pin and mini-bowling games to mainstream tenpin bowling and reinvented formats like duckpin bowling.

With their inherent simplicity and reliability, they have been well accepted by casual and league bowlers alike. Just as important, because of their proven operational benefits they have been embraced by bowling center owners and operators as well who, because of these machines, are realizing unprecedented growth and profitability.



In 2019 QubicaAMF introduced the EDGE String pinspotter, the amazingly simple way to offer bowling.

Recognizing the trends and needs in the industry related to pinspotting machines, along with the opportunities to improve the string pinspotter experience, QubicaAMF introduced the EDGE String pinspotter in 2019. It's the newest, most advanced string machine, delivering three unique and essential benefits for today's operators and new investors:

- A simple and robust pinspotter any bowling staff member can operate
- An innovative smartphone app called Tech Wizard, that makes operation even easier by proactively informing & guiding staff
- An amazingly reliable and authentic experience for bowlers

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MAKING BOWLING AMAZING

