



FEEDBACK AND RESULTS OF CIS SECURITY SOLUTIONS' *TICK-R-TAPE* TECHNOLOGY

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Executive Summary

In 2019, the Loss Prevention Research Council worked with CIS Security Solutions and a participating retailer to test CIS' *Tick-R-Tape* technology in two StoreLabs located in Gainesville, Florida. A mixed-methods approach was used in this study, where results indicated that:

- 100% of retail offenders said they would not steal the product protected by the *Tick-R-Tape* technology.
- 81.82% of offenders were able to correctly identify the *Tick-R-Tape* as a theft prevention technology, and 63.64% understood the specific mechanisms of the technology.
- On a scale of 1 to 5, where 1 is "not at all likely" and 5 is "very likely", offenders reported being "not at all likely" to "not likely" to steal a product protected by the *Tick-R-Tape* (1.55 out of 5).
- Customers were generally unaffected by the *Tick-R-Tape* technology, where the average customer reported that the technology does not impact their decision to shop in-store (3.55 out of 5).
- Associates reported having a "favorable" and "positive" experience with the *Tick-R-Tape* technology.
- The versatility of the *Tick-R-Tape* technology increased the on-shelf availability as much as 630% compared to keeper boxes currently utilized by the retailer, and as much as 30.77% compared to the spiderwraps.

INTRODUCTION

Shoplifting remains a prominent issue within the retail sector. According to the 2019 National Retail Security Survey, the average shrink rate has remained fairly steady since 2014 - hovering around 1.4%. In 2018 it was 1.38%, a number estimated to cost the industry \$50.6 billion annually (NRSS, 2019). For this reason, retailers have turned to evidence-based technological solutions in an attempt reduce theft in their stores (Hayes, 2003; Johns, Hayes, Scicchitano, Grottini, 2017; Lab 2010). Package tags and wraps are widely used to protect merchandise. However, as retail offenders adapt and learn techniques to defeat these technologies, solution providers must respond by developing new, more secure ways to protect products. CIS Security Solutions Inc. developed and sought to test their *Tick-R-Tape* technology, a universal package tag designed to protect hard and soft merchandise.

In 2019, the Loss Prevention Research Council worked with a large department store chain to better understand the effects of implementing CIS' *Tick-R-Tape* in-store. The goals of the research were to:

1. Examine offender reactions to the *Tick-R-Tape* technology
2. Understand customer perceptions of CIS' *Tick-R-Tape* technology
3. Understand associate perceptions of CIS' *Tick-R-Tape* technology
4. Compare the *Tick-R-Tape* to traditional keeper boxes and spiderwraps by examining size differences and shelf availability between the technologies.

BACKGROUND

How It Works

CIS' *Tick-R-Tape* is advertised as a 5-alarm universal package tag, where it can be used on hard or soft packaging of different sizes and shapes. The *Tick-R-Tape* is so named because it can be used in two ways: the tick can be used alone or combined with customizable and conductive adhesive tape, which can be used with one or two strands on the packaging (pictured right). When the tag is armed, it will give visual and audible indicators to let the user know if it has made 1, 2, or 3 connections. There are a variety of different ways the tag can be alarmed:



- If the tag is removed without being disarmed
- If unauthorized detachers are used
- If the conductive tape is cut/removed
- If the tag passes through EAS pedestals
- The tag will also self-alarm through the EAS pedestals

Research Design

CIS' *Tick-R-Tape* technology was installed in two StoreLabs located in Gainesville, Florida. More specifically, the technology was trialed within the Beauty Department on various giftsets. A mixed-methods approach was used in this study. To better understand how the versatility of the *Tick-R-Tape* impacts on-shelf availability, size comparisons were made between two different keeper boxes and spiderwrap technology currently being used by the participating retailer.

Qualitative methods were used to explore in-depth reactions to the technology. An LPRC Research Scientist recruited eleven self-admitted shoplifting offenders, and in-person interviews were conducted in-store to better understand their reactions to the technology. After trialing the technology, store associates were also asked to give their feedback on the technology. Finally, customer intercepts took place, where they were asked to provide their opinions of the technology.

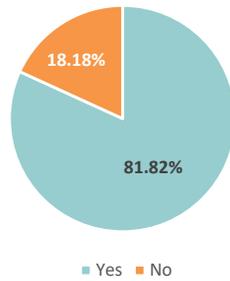
Results

Offender Feedback – *See, Get, Fear*

Eleven self-admitted shoplifting offenders were recruited by an LPRC Research Scientist. They were asked to meet in one of the two StoreLabs, where they were escorted into the beauty department and asked a series of questions about the *Tick-R-Tape*. On average, the shoplifters in this study reported stealing a total of \$299.50 per month. However, the totals varied widely - the lowest reported value was \$20, and the highest was \$1,200 per month.

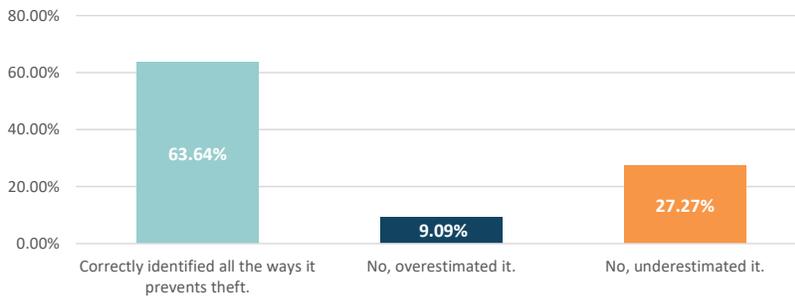
The offenders were first asked if they had noticed *any* anti-theft or loss prevention technologies in the store. 100% of respondents noticed *some* technology in-store, and nine of the eleven (81.82%) specifically pointed out the *Tick-R-Tape* (see Figure 1). When asked, all respondents were able to correctly identify the technology as an anti-theft device.

Figure 1. Did the offender correctly identify the *Tick-R-Tape*?



Next, they were asked to describe the mechanisms of the *Tick-R-Tape*. Seven of the offenders (63.64%) correctly identified *all* the ways the technology prevents theft. One overestimated it, stating that they believed it to be a tracking device of some sort. Three of the offenders (27.27%) underestimated the capabilities of the *Tick-R-Tape*. Of those, two of three did not know that cutting the tape will set off the tick alarm itself, and two did not know that the tick itself would alarm if tampered with.

Figure 2. Do they understand what it does?

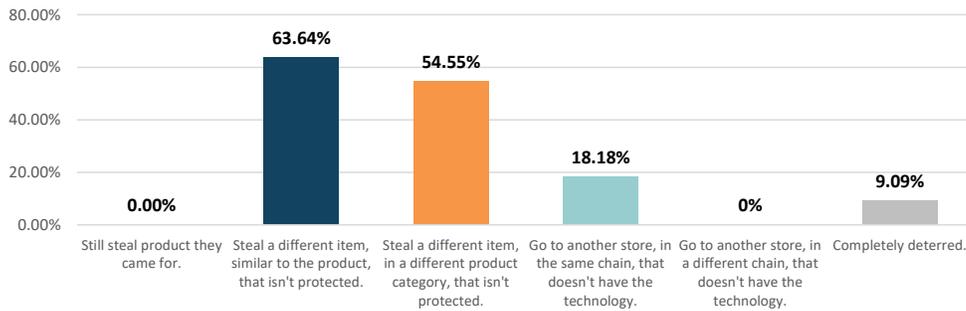


We also wanted to test the deterrent power of the technology. First, shoplifting offenders were asked what their reaction would be if they entered a store using the *Tick-R-Tape*. The responses were open-ended and coded based on the content; therefore, offenders could react in multiple different ways. Of the eleven offenders, none indicated that they would still attempt steal the product they came for, suggesting that the technology is an effective deterrent for the protected product itself (Zone 1). In other words, 100% said they would be deterred from stealing that protected item. Seven offenders (63.64%) reported that they would instead take an unprotected product in the *same* product category, and six (54.55%) would take an unprotected item in a *different* product category. Two of the respondents (18.18%) would go to a different store *in the same chain* that is not currently using the technology, and one (9.09%) would be completely

deterred from stealing that day (see Figure 3).

When asked how likely they would be to steal an item protected by the *Tick-R-Tape*, the average response was 1.55 out of 5, meaning offenders were “not at all likely” to “not likely” to attempt to steal that product.

Figure 3. Offender Reactions to the *Tick-R-Tape*



Next, the offenders were asked if they had any suggestions on how to make the technology more *noticeable*, make the function *easier to understand*, and make it more of a *deterrent*. The responses included:

Noticeability:

- “Maybe add signs explaining what it does.”
- “That’s extremely noticeable, it can’t really be improved. Like the keeper boxes too. But the Tick-R-Tape is more of a deterrent, like ‘might as well sit on the curb, waiting for the cops to come get you’.”
- “They’re noticeable, they will keep people away. Signs maybe?”
- “It should be less noticeable. It [the tick] is too big. It should be okay for anyone to pick up.”
- “Brighter flashing lights.”
- “More red, brighter, more blinking.”

Understandability:

- “Write ‘alarm’ on the tape.”
- “Signs and such and other informational devices. Explain its more likely to alarm and more advanced than tags.”

- *"It looks like an Inspector Gadget¹ or Kids Next Door² shit. It's pretty understandable."*
- *"Make the tape and branding more obvious... It's already is real high tech and a good deterrent."*

Deterrent:

- *"Would add something describing why it's there. You won't make them as scared with this. You need to scare people. Make the purpose more recognizable, add that the bars will alarm since not all tags do. Make tape one bright color so it's easier seen. Like a mop bucket. You wouldn't be able to tell the tape from holiday packaging. It's less of a deterrent that way."*
- *"It's already a credible theft. Maybe a picture of a dude in jail and 'this could be you'. That's about it."*
- *"It's doing an awesome job of keeping people away."*
- *"It took picking it up and manipulating to tell that it was adhesive, but you'd already look suspicious looking that closely anyway. Make the circuits more obvious. Pretty cool, to be honest."*
- *"Most high-tech thing I've ever seen."*

Customer Feedback

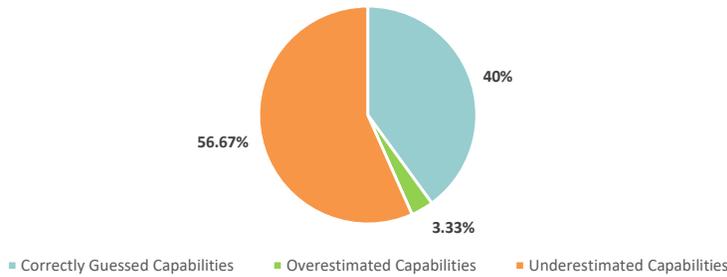
Next, we wanted to see how customers reacted to the *Tick-R-Tape* technology. Thirty customer intercepts took place between both StoreLabs. First, they were asked how comfortable they felt shopping in-store. An overwhelming majority (90%) said they were "very comfortable" shopping in the stores, and 89.66% reported feeling "very safe".

Before the *Tick-R-Tape* was shown, customers were asked if they had noticed loss prevention technology in the area. 23 customers (76.67%) indicated that they had noticed technologies such as alarm sensors, cameras, pedestals, and clothing tags. After being prompted, they were then asked to guess what they think the *Tick-R-Tape* does (see Figure 4). Of the thirty respondents, twelve (40%) were able to correctly guess all the capabilities of the *Tick-R-Tape*. One (3.33%) overestimated the capabilities of the technology, stating that they believed it to be a tracker of some sort. Seventeen (56.67%) guessed the purpose was to deter theft but underestimated the capabilities.

¹ Inspector Gadget (1983) was an animated series about a bionic police inspector, outfitted with high-tech gadgets to help solve his cases.

² Kids Next Door (1998-2008) was an animated series about a group of children who fight villains from their high-tech tree house headquarters.

Figure 4. Do Customers Understand the Mechanisms of the *Tick-R-Tape*?



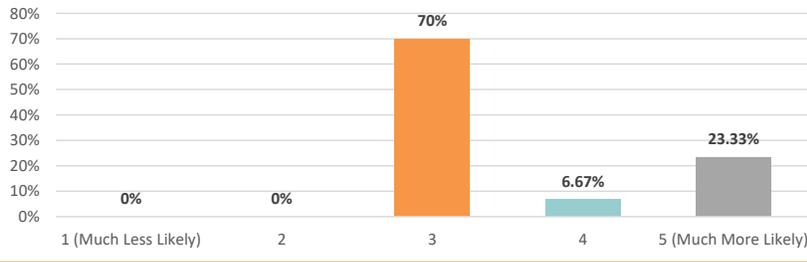
Of those who *underestimated* the *Tick-R-Tape*, it was common for them to misunderstand the purpose of the tape, where they tended to believe it was holding the tick in place or that it would not sound if tampered with. Other common responses included:

- It just alarms the pedestals.
- It will alarm the pedestals and the tick will alarm, but the tape does nothing.
- The tape is holding the tick on.

Next, we asked customers how safe and comfortable they felt in the presence of the technology compared to other shelving units. One customer indicated that they felt “much less safe” and “much less comfortable” - citing the sensitivity of the technology. However, the majority reported being “neutral” to “more comfortable” (3.83 out of 5) and “more safe” (3.97) with the *Tick-R-Tape* as compared to other shelving units.

An overwhelming majority, (93.33%) saw the technology as loss prevention rather than as customer service. Customers held fairly neutral opinions for how the technology would impact their shopping habits. When asked if the technology would make them more or less likely to shop in the store, the average was a 3.55 out of 5.

Figure 3. On a scale of 1 to 5, where 1 is "much less likely" and 5 is "much more likely", does this technology make you more or less likely to shop here in the future?



Next, we asked what could be done to the technology to make customers feel safer or more comfortable. Responses included:

- *"It's much more visually appealing than those [keeper boxes]. I would purchase this item with this rather than in that."*
- *"It's intrusive for smaller items, too covering. I'd probably shy away from it."*
- *"Make it less sensitive. I touch it and it starts beeping."*
- *"The device is too big, the tape is cool, but it should be invisible. I don't want to see it."*
- *"Maybe a small sign explaining the purpose - like 'enhancing customer safety'."*
- *"It's really obvious... maybe make the [store] branded tape more clear and make the black thing [the tick] smaller."*
- *"I'm not sure that there's anything else you could do, seems very secure."*
- *"This is pretty good; I just don't want the sensor to go off."*
- *"Make it smaller, it's intimidating."*

Next, we wanted to understand how the mechanisms of the technology impacted customer feedback. First, questions were asked to understand how having the packaging taped shut affects their purchasing decisions. Nineteen of the thirty customers (63.33%) indicated that the tape blocked the packaging. Despite this, customers generally did not seem deterred by it. When asked if having the packaging taped shut makes them more or less likely to purchase a product, the average was a 3.5. This indicates that they had, on average, neutral opinions of the technology. It is notable to mention that customers saw both benefits *and* drawbacks to the tape:

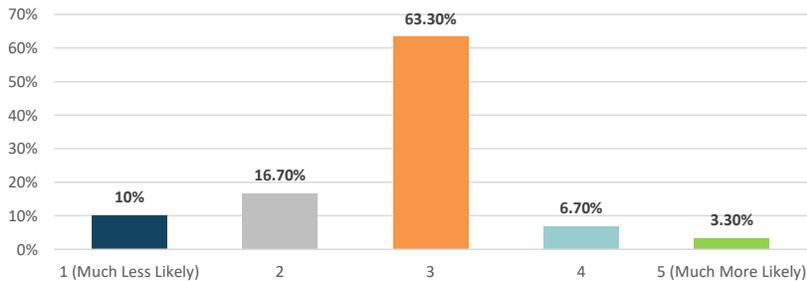
- *"I like it - I don't want to purchase something that's been opened."*
- *"If I had to guess it may make it [the product] look more valuable, which could be a good thing."*
- *"I'd be slightly more [likely], because it means it hasn't been opened."*
- *"There would need to be a tester if I can't open it."*

Finally, while CIS advertises their *Tick-R-Tape* as being residue and damage-free, we wanted to better understand how the tape would impact customer perceptions if it presented the possibility of damaging the packaging. Specifically, they were asked: "On a scale of 1 to 5, where 1 is "much less likely" and 5 is "much more likely", how likely would you be to purchase the product knowing the packaging may be damaged upon removal"? The average was a 2.77 out of 5, where customers reported being slightly "less likely" to purchase the product if the packaging could be damaged. However, a majority (63.3%) of customers were "neutral" about it:

- *"It's fine as long as the return policy still applies."*
- *"It doesn't bother me."*
- *"It's just packaging."*

The main concern arises if the product itself is a gift, which was cited by all the customers who were less likely to purchase a product if the packaging was damaged.

Figure 4. How likely would you be to purchase the product knowing the packaging may be damaged upon removal?

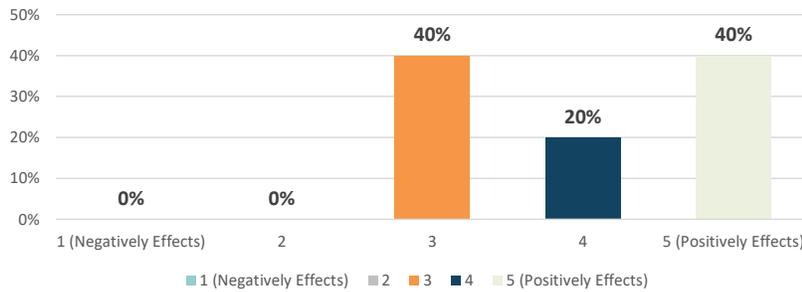


Associate Feedback

Associates were asked whether the technology positively or negatively affects their ability to provide customer service. The average score was a 4 out of 5, meaning that associates generally believed that the *Tick-R-Tape* positively impacts their ability to serve customers (see Figure 6). Notably, none of the associates thought that the technology would negatively impact their customer service. When asked, associates also reported that they rarely get approached about the technology by customers.

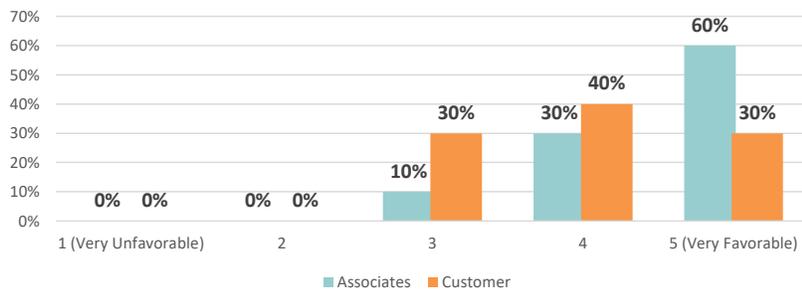
CIS Tick-R-Tape Results

Figure 6. How does this technology affect your overall ability to provide customer service?



Store associates were also asked to estimate the deterrent power of the *Tick-R-Tape*, where 1 is “not at all effective” and 5 is “very effective”. The average was 3.8 out of 5, meaning the associates believed it to be a *somewhat effective* deterrent for retail offenders. Finally, they were asked to rate the overall experiences with the technology, where 1 is “very unfavorable” and 5 is “very favorable”. They were first asked to rate the *customer* experiences, where the average was 3.9 out of 5. These results indicate that the store employees think that customers had “favorable” experiences. Next, they rated their own experience with the *Tick-R-Tape*, where 1 is “very negative” and 5 is “very positive”. Overall, associates were very pleased with their experience, rating it a 4.5 out of 5 (see Figure 7).

Figure 7. Associate and Perceived Customer Experiences with the *Tick-R-Tape*.



In a series of open-ended responses, associates were asked to give details of their experience with the *Tick-R-Tape*:

- “The new one [Tick-R-Tape] is much better.”

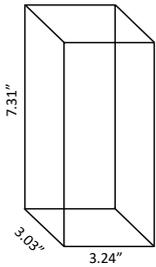
- *“They are way better than the spiders. I hate those, I love these [the Tick-R-Tape]. I want them to go on the tech stuff too.”*
- *“I just want to know why we can’t use that [the Tick-R-Tape] for technology. I would prefer to use the same type of technology for all products... The spider wrap takes too long and customers get aggravated. It’s just easier.”*
- *“Compared to the spiderwrap it’s easier to take off - you just twist it off. The spider hurts my finger sometimes.”*

Tick-R-Tape Sizing

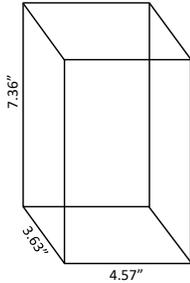
We were also interested in how the size of the *Tick-R-Tape* would contribute to on-shelf availability. Some of the advertised benefits of using CIS’ *Tick-R-Tape* technology include its size and versatility. The tape itself remains flush with the product, adding virtually no bulk. The “tick” is also smaller compared to traditional keeper boxes and spiderwraps, adding only 0.79 inches of bulk onto the packaging. It is also flexible – the tick can be placed anywhere on the packaging to maximize shelf space.

We compared the size of the *Tick-R-Tape* to two different keeper boxes and a spiderwrap currently being utilized by the retailer. All four technologies were used in-store to protect a brand of perfume, with the packaging dimensions being 4.25” x 2” x 2”. In calculating the volume of space taken up by the original product:

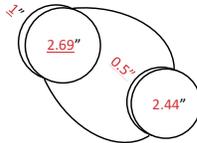
- Keeper Box #1 adds an additional 2.06” of height, 1.24” in width, and 1.03” in depth
- Keeper Box #2 adds an additional 2.11” in height, 2.57” in width, and 1.63” in depth
- The Spiderwrap adds an additional 1.5” in either height, width, or depth, depending on the placement of the product
- CIS’ *Tick-R-Tape* adds an additional 0.79” in either height, width, or depth – the flexible design allows the tick to be placed on the product in a way designed to maximize shelf space



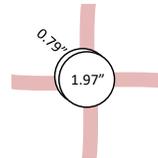
Keeper Box #1



Keeper Box #2



Spider Wrap



CIS Tick-R-Tape

Using the dimensions of the shelf space in the LPRC Engagement Lab, we were able to assess the number of units that would fit on a single shelf to provide some context. The shelf itself measured about 48" x 12" x 18". If fitted in Keeper Box #1, the maximum number of units allotted is 84, while Keeper Box #2 could comfortably fit 60 units on the shelf. Finally, because the spiderwrap can be placed in three different ways (front, sides, and top), we estimated the maximum number of units in all three positions. When placed on the front, 288 units can fit on the shelves. When on the sides, the maximum number of units on the shelf is 312, and when fixed on the top, the number of units that can be comfortably placed on the shelf is 432.

The *Tick-R-Tape's* flexible design allows the tick to be placed anywhere on the packaging. If the tick is fitted on the front or back of the units, the shelf could comfortably hold 384 units. If fitted on the sides of the unit, the shelf could hold 408 units. If the tick was placed at the top, the number rises to 432. Thus, the versatility of the Tick-R-Tape increased the amount of on-shelf-availability in our Engagement Lab by a maximum of 421.2% compared to Keeper Box #1, and 630% compared to Keeper Box #2, and 30.77% compared to the spiderwrap.

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References

- Hayes, R. (2003). Loss prevention: senior management views on current trends and issues. *Security Journal*, 16(2), 7-20.
- Johns, T. L., Hayes, R., Scicchitano, M. J., and Grottini, K. (2017). Testing the effectiveness of two retail theft control approaches: an experimental research design. *Journal of Experimental Criminology*, 13(2), 267-273.
- Lab, S. R. (2010). *Crime Prevention: Approaches, Practices, and Evaluations: Seventh Edition*. Cincinnati, OH: Anderson Publishing.

Rosenbaum, D. S. (1988). Community crime prevention: A review and synthesis of the literature. *Justice Quarterly*, 5(1), 323-395.