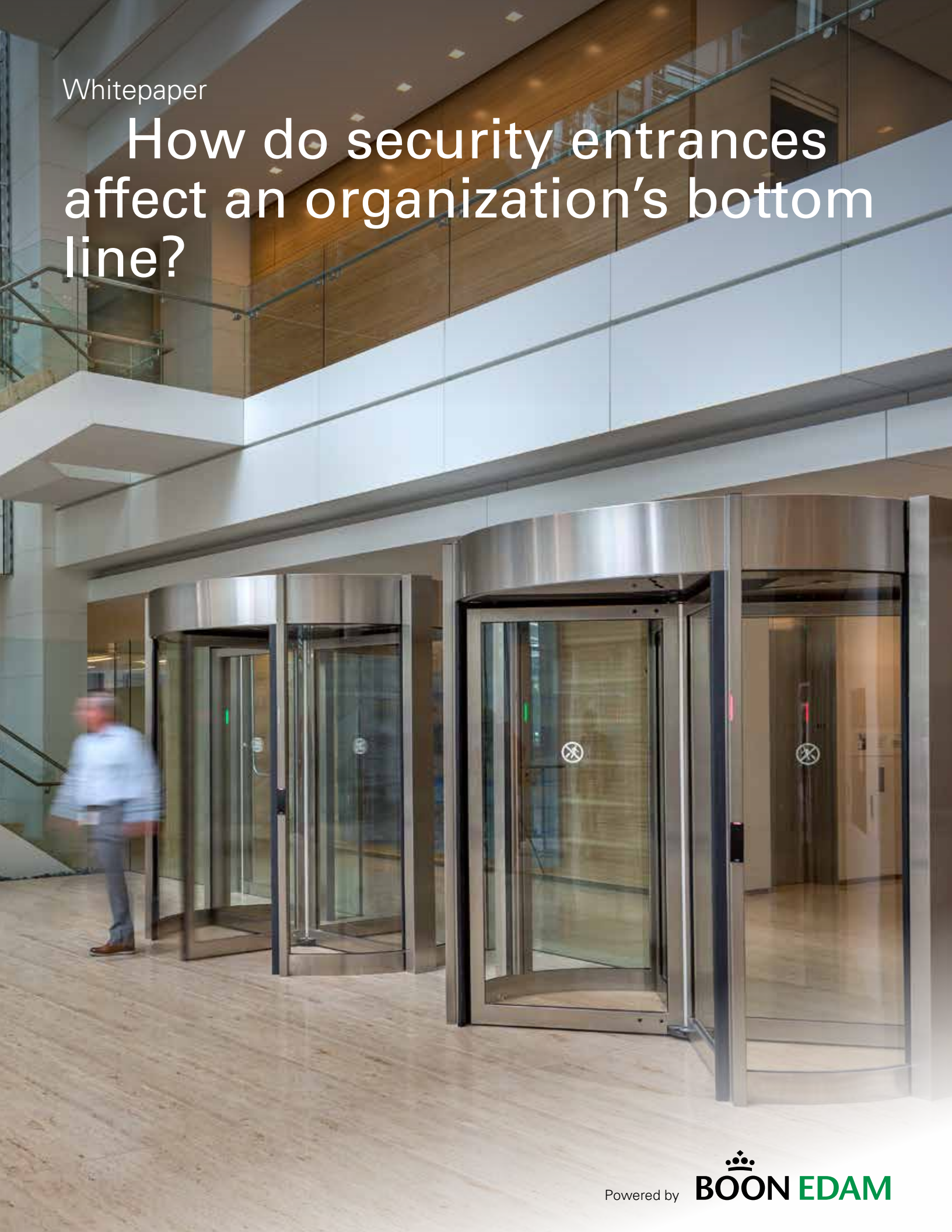


Whitepaper

How do security entrances affect an organization's bottom line?

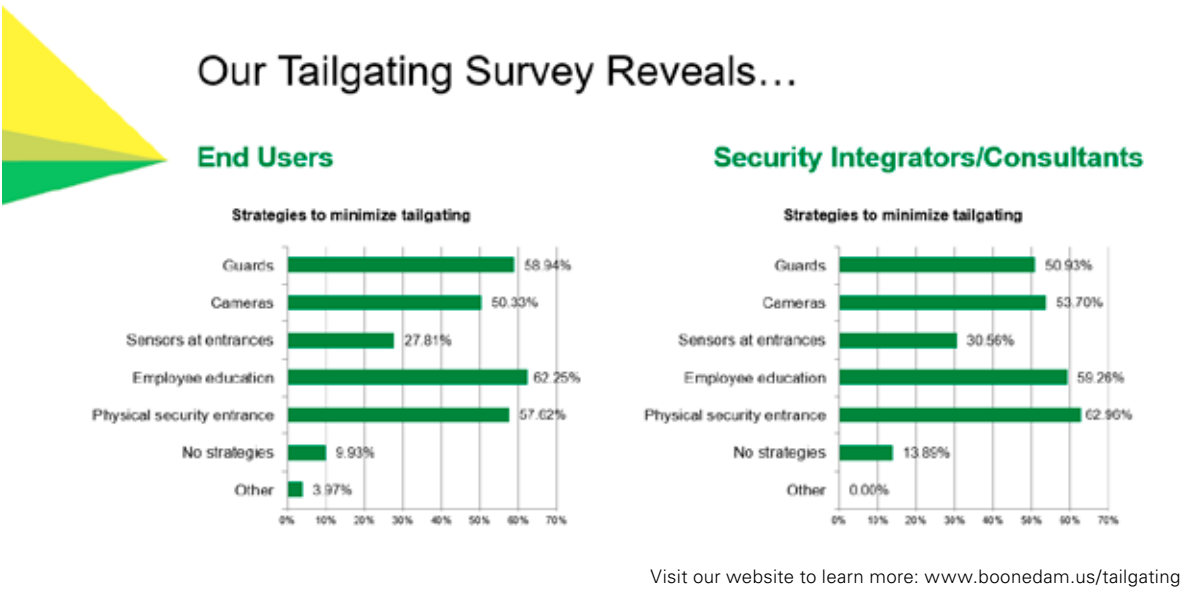




Defining Basic Tailgating Prevention Capabilities and Goals

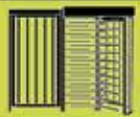
Not all security entrances work the same way. Their different capabilities, therefore, have an impact on an organization’s overall anti-tailgating strategy in terms of capital outlay, manpower needed, annual operating costs, ROI, and user education and preparation.

Below is an excerpt from a survey conducted in late 2014 by Boon Edam. It reveals that both end users and security professionals agree that there are three critically important components to a successful anti-tailgating strategy: Guard force, employee education, and technology mix. During his presentation at ASIS 2015, Chad Parris, from Security Risk Management Consultants, articulated a concise argument that “Technology does not equal Security.” Hence, an effective security strategy requires all three components to achieve results.



So, what is the best recipe for success within any given organization for the successful implementation of an anti-tailgating strategy? How does a given strategy affect an organization’s bottom line? These questions can be answered, but we first must understand the capabilities of security entrances themselves; capabilities which correspond to specific goals you want to achieve.

First, we’ll introduce the four Levels of anti-tailgating entrance capability based each product’s working principles. After, we’ll delve into the impacts of each of the four Capability Levels to the organization in terms of recommended supporting security technologies, guard force, user education, financial costs, and the potential to measure results and gain a ROI. The table below lists the four Capability Levels along with its associated security entrance type. A Capability Level can also be seen as a goal, e.g., “Do you want to detect tailgating or prevent it from happening?” Below this table we’ll discuss further what is shown and hopefully dispel any myths or assumptions.

CAPABILITY LEVEL	BARRIER TYPE	DETECT?	PREVENT?	CAPITAL COST	NEED GUARD?	RATIONALE
LEVEL 1 CROWD CONTROL Tripod Turnstiles						• No sensors/alarms • Can be jumped
LEVEL 2 DETERRENT Full Height Turnstiles					*see below	• Full height barrier deterrent • No sensors/alarms • Typically on fenceline or perimeter • Piggybacking in same compartment possible with collusion
LEVEL 3 DETECTION Optical Turnstiles		✓				• Sensors/alarms present • Requires response from staff • Can be jumped or rushed through
LEVEL 4 PREVENTION Security Revolving Doors & Portals		✓	✓			• Sensors/alarms present • Rejects both tailgate and piggyback attempts**

* Fenceline or perimeter deployments typically do not use supervision.
** Piggybacking is two people in the same compartment in a mantrap portal or security revolving door.
Tailgating is following in a trailing compartment in a security revolving door.

The Four Capability Levels

Level 1: Crowd Control

“Crowd control,” related to tailgating prevention, means “High capacity controlled entry.” This Level is often deployed in areas where large numbers of people need to access a secure area during limited amounts of time, e.g., stadium entry, factory shift changes, transit terminals, or even an 8 am rush into a high-occupancy, high rise building. This Level employs simple technology to achieve the goal of high throughput, and offers the lowest capital cost. There are no detection sensors of any kind. But, it can be defeated by jumping over or crawling under the entrance. Therefore, manned security is needed to deter tailgating attempts and/or to respond quickly after an incident.

Level 2: Deterrent

This Capability Level is a special one reserved for outdoor, perimeter locations on a fence line, such as entrances into parking areas or university campus dorm areas. The rugged, full height barrier serves as a deterrent to climb-over attempts. Full height turnstiles and gates have a moderate capital cost and have no presence detection sensors or alarm systems. With collusion, two small people can physically piggyback in a single compartment. Due to being spread out over

large distances, guards are typically not present to monitor such entrances continuously, thus this Level is aptly named, “Deter.”

Level 3: Detection

This Level is where sensor technology comes into play to detect when tailgating occurs and to then sound an alarm. Optical turnstiles fall into this category, and they have a moderately expensive capital cost. It is important to know that tailgating is possible regardless of the height of the barriers; when the barriers open for a few seconds, a second person can rush through. This Level, therefore, requires the presence of a guard to deter attempts and/or respond immediately.

Level 4: Prevention

Level 4 is true tailgating and piggybacking prevention. The two entrances that can do this are a security revolving door and a mantrap portal. These entrances are the most expensive in terms of capital costs due to the sophisticated technologies within. However, no security guards are needed to monitor these entrances.



Exploring the Impacts of Tailgating Prevention Strategies

Let’s dig deeper into each Capability Level to determine the potential for measuring success and ROI. The previous table has been expanded to show other factors: Throughput, Metrics Capability, Recommended User Education, Annual Operating Costs and Payback. After you’ve reviewed this expanded table, let’s move on to what is depicted in more detail.

Level 1: Crowd Control

Throughput: Waist high turnstiles can process up to 30 people/minute, including access control processing time. If you have a lot of two-way traffic during shift changes or lunch, then the max throughput per direction falls to 12-15, not 30. Adding more turnstiles to accommodate this traffic pattern affects capital cost.

User Education: Waist high turnstiles do not typically require user orientation training.

Metrics Capability: Waist high turnstiles can count the number of people entering or exiting. The access control system can track all presented credentials. Due to lack of detection sensors or alarms on turnstiles, there is no way to track jumping or crawling infractions.

Strategy Implications: With the limited metrics available, you must rely on manned security to verify who is coming and going, process visitors, create

infraction reports, etc. You must also manage guard staff’s ongoing training, shift coverage, and procedures. You can only track/measure what is reported or observed by the staff. This strategy is vulnerable to distractions, favoritism, and absenteeism, which all create opportunities for infiltration.

Payback/ROI: Level 1 payback is its value as a visual deterrent. Due to reliance on security staff to provide all metrics and response, the annual operating costs are high relative to other Capability Levels.

Level 2: Deterrent

Full height turnstiles at the perimeter or fence line, are used to deter infiltration into a facility or campus.

Throughput: Full height turnstiles handle up to 18 people/minute, including access control processing time. They are most efficient during one-way rush periods. If you have a lot of two-way traffic during shift changes or lunch, then max throughput per

direction is 7-9, not 18. This means you might need to install more turnstiles than planned, which affects capital cost.

User Education: Full height turnstiles typically do not require special user education.

Metrics Capability: Full height turnstiles can count the number of inbound and/or outbound people. Combined with an access control system, you can track submitted credentials. There are no sensors or alarms to track climb over and piggybacking—when two people squeeze together into the same compartment on a single authorization.

Strategy Implications: With limited metrics and no piggybacking alarm, unmanned full height turnstiles are often part of a multi-tiered plan, where other types of security entrances are relied upon to enter and move deeper inside buildings. Therefore, the impact of the overall strategy depends on the Capability Level deployed for the buildings themselves.

Payback/ROI: The payback of full height turnstiles is solely as a perimeter deterrent. Ongoing capital costs are very low (maintenance and tune ups) relative to other Capability Levels because there is typically no

direct guard supervision, or they are remotely monitored.

Level 3: Detection

Throughput: With access control integration, optical turnstiles with barriers can process up to 30 people/minute, including access control processing time. If traffic becomes heavy in both directions, expect throughput in a single direction in the teens and plan the number of turnstiles you need accordingly (affecting capital costs).

User Education: Because of the sensors, alarms and moving barriers, all users should be trained on safe use.

Metrics Capability: Optical turnstiles are equipped with presence detection sensors, and therefore can provide metrics: number of authorized personnel inbound and outbound, and number of tailgating incidents/alarms. Certain models with dense sensor arrays can be set up to alarm and count jumping or crawling attempts. Access control can track all credentials submitted.

Strategy Implications: The metrics are similar to waist high turnstiles with an added bonus: you can count tailgating incidents and strive towards elimination. However, you must rely on manned security at the site to respond quickly to alarms, which brings to bear similar ongoing management and costs as with waist high turnstiles.

Payback/ROI: The payback of optical turnstiles is in their value as a strong visual deterrent. Due to reliance on security staff to monitor and respond quickly to infractions, annual, ongoing capital costs are high relative to other Capability Levels.

CAPABILITY LEVEL	BARRIER TYPE	DETECT?	PREVENT?	CAPITAL COST	NEED GUARD?	THROUGHPUT PER MINUTE	ORIENTATION RECOMMENDED	METRICS CAPABILITY	ANNUAL OPERATING COST	PAYBACK
LEVEL 1 CROWD CONTROL Tripod Turnstiles						30				
LEVEL 2 DETERRENT Full Height Turnstiles					*see below	18				
LEVEL 3 DETECTION Optical Turnstiles		✓				30	✓			
LEVEL 4 PREVENTION Security Revolving Doors & Portals		✓	✓			40/6	✓			

* Fenceline or perimeter deployments typically do not use supervision.

Level 4: Prevention

Level 4 includes security revolving doors and mantrap portals, which are able to detect and prevent tailgating.

Throughput: A security revolving door can handle a maximum of 20 people per direction simultaneously, for a total of 40 people/minute. A mantrap portal can process up to 6 people per minute, but only one at a time. If you require dual authentication, this number will be lower. Capital costs are impacted by how many entrances you need during peak one way and two-way traffic flow periods.

User Education: Because of the sensors, alarms and moving parts, a user orientation program is a must.

Metrics Capability: Due to sophisticated near-infrared sensors and optic technologies, Level 4 entrances offer a rich assortment of metrics, such as authorization received, passage completed, tailgating/piggybacking rejections inbound or outbound, biometric access control rejections, safety rejections, and

emergency button rejections. You can use the access control system to count rejections and then investigate the optic records to discover why those rejections occurred. Most importantly, through sensor calibration, you can begin to predict and quantify, with a low margin of error, your actual risk of infiltration.

Strategy Implications: Detailed and predictive metrics without the need for security staff makes Level 4 the most reliable strategy to prevent tailgating and piggybacking. By understanding and determining false acceptance and rejection ratios, and verifying a door's performance over time, you can develop an objective, predictable and quantifiable risk that can be managed.

Payback/ROI: Level 4 enables the elimination or reallocation of security staff, thus providing a financial payback on the investment. Ongoing capital costs involve routine maintenance only. The financial benefits and strategy implications are the main reasons more and more companies are finding Level 4 appealing.



We've only skimmed the surface by showing these Capability Levels and their unique impacts. We hope this information will motivate a discussion in your organization as to your current vulnerability to tailgating; the possible costs of the wrong person getting into your building; and what commitment of time and resources your organization is willing to make to further limit your tailgating vulnerability.