# THE THREE WAVES OF SECURITY INNOVATION

## EARLY INTERNET

FIREWALLS & ANTI-VIRUSES

Attack Vectors to Monitor: Limited

**1989:** First firewall, packet filters, developed by DEC

**1988:** Robert Morris introduces the first computer worm, effectively shutting down the early Internet

WAVE 1

**1991:** Symantec releases first version of Norton Anti-Virus

**2000:** The Melissa and ILOVEYOU viruses infect tens of millions of PCs, causing email systems around the globe to fail

## THE RISE OF MOBILE & CLOUD

APT, NEXT GEN FIREWALLS & END POINT SOLUTIONS

Attack Vectors to Monitor: Hundreds

**2009:** Palo Alto Networks launches next generation firewall containing application awareness, full stack visibility, extra-firewall intelligence, and upgrade paths

**2009:** FireEye coins the term "Advanced Persistent Threat" in response to polymorphic viruses

The rise of cloud and mobile create millions of new entry points. Deployment of new end point technology increases

WAVE 2

**2013:** Yahoo suffers the largest data breach in history, affecting 3B user accounts

Trend toward visbility and control of managed assets, primarily reactive response

New malware samples range from 30K to 50K per day

## THE ERA OF INFINITE DATA, AI & IoT

NEW APPROACHES: CONTEXTUAL, AI-BASED, PROACTIVE

Attack Vectors to Monitor: Millions

**2017:** Equifax breach exposes financial information of 143M consumers. KRACK and BlueBorne exploit WiFi and bluetooth on billions of devices

**IoT compromises increasing.** The top three botnet kits — Andromeda, Gamarue and Wauchos — estimated to be responsible for compromising more than a million devices a month

WAVE 3

More than 200,000 new malware samples released per day

New attack vectors exponentially and continually increasing and evolving

Sophisticated adversaries launch precision targeted attacks that rely on demographics and psychographics

## THIS IS NOT A HUMAN SCALE PROBLEM ANYMORE

Balbix is security for the Third Wave. Using specialized AI and deep learning for continuous inventory and monitoring of the attack surface, Balbix BreachControl™ offers predictive assessment of breach risk, a prioritized list of mitigation actions, and prescriptive fixes to avoid breaches and increase cyber resilience.

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