Centripetal

TOTAL DHS SBIR INVESTMENT
$1.8 million

IMPACT
Novel cyber threat intelligence enforcement solution that protects the networks of some of the world's largest critical infrastructure organizations, including financial services institutions, retailers, government agencies, universities, hospitals, and public utilities.

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Malicious cyber activity costs the U.S. economy hundreds of billions of dollars each year as cybersecurity threats and breaches continue to increase rapidly across public and private sectors. To address a problem of this magnitude, Centripetal developed a disruptive solution to augment the cyber threat intelligence (CTI) cycle with machine intelligence to improve efficiency and reduce operating costs of cybersecurity analysis. The company now delivers an automated, intelligence-driven, patented Threat Intelligence Gateway solution to customers via CleanINTERNET®, a cybersecurity service that enforces massively scaled CTI on live in-transit traffic to stop and triage threats, enabling network operators to conduct near real-time investigations on CTI-matched events and iteratively improve their network's cyber defenses.

Sean Moore, Ph.D., is the Chief Technology Officer and VP of Research at Centripetal, and has led the overall technology vision previously working as a Principal Investigator for cybersecurity R&D programs sponsored by the Department of Homeland Security (DHS) Science and Technology Directorate (S&T), the Defense Advanced Research Projects Agency, and the Intelligence Community. "We had the disruptive idea of deploying massively scaled active intelligence to live in-transit networking traffic to protect networks from global cyber threats. At the time, only DHS S&T believed this was possible," said Moore. "It was a radical idea, and we needed several fundamentally new technologies to do this. The Small Business Innovation Research (SBIR) Program provided seed funding that helped us develop commercially viable products that we could market and sell. It took us four years to get to commercial viability."

So, what exactly did this novel idea do? Distributing and applying CTI to in-transit traffic should prevent most cyberattacks, but typically CTI is not applied quickly enough—and at the necessary scale and dynamics—to live, in-transit traffic to prevent attacks in the first place. Furthermore, it is extremely difficult to collect, process and activate CTI on a network. The available body of CTI is very large, complex, dynamic, noisy and diverse in fidelity. Conventional "security stack" technologies—firewall, intrusion detection and prevention systems, proxies, etc.—cannot meet this challenge, and neither will the "next-gen" layering of these legacy ideas. Centripetal's RuleGATE® Threat Intelligence Gateway can automatically collect, process, and apply all available CTI to stop attacks proactively before any damage is done to networks.

Security teams have struggled without having a single integrated platform that could process and enforce the necessary amount of CTI to protect networks. With funding from DHS, Centripetal developed technology that accelerates human cyber analysts productivity and efficiency by factors of a thousand or more with the invention of the Threat Intelligence Gateway. RuleGATE® fundamentally changes how cyber teams use CTI to filter network traffic, allowing them to eradicate threats and rapidly focus on investigating the 1% of advanced threats with unknown severity. This innovation allows cyber analysts to triage millions of events per day, focus on investigating the highest risk events, and producing reportable findings and remediations faster. While the requirements and collection stages to determine cybersecurity threats are automated with the RuleGATE®, the analysis stage still depended on human cyber analysts and their advanced skills. This manual analysis process limited an analyst to examining only a few threats per day.

"It's important to keep an eye on the mission scale of the federal customer while focusing on the commercial market technical scope when working on SBIR-funded technology," notes Chris Gibbs, Vice President of Global Sales at Centripetal. "You can't be solely focused on government sales or customers because you won't get the product market fit that you need. The government wants to see technologies deployed and these products have to reach broad markets."

In addition to CleanINTERNET®'s successful adoption by the public and private sectors, Centripetal has patented many system technologies from their extensive research and have continued to develop and commercialize CTI solutions using SBIR and other funding sources. This intellectual property portfolio includes 71 issued U.S. patents to date, more than 25 international patents, and many pending patents. Centripetal's number of installations and customer base has continued to grow by 100% year over year, and the company now supports some of the largest financial services institutions, retailers, government agencies, universities, hospitals, and public utilities globally. Furthermore, the company has grown from just four employees at the time of its first SBIR-funded project in 2010 to over 80 employees today. Looking to the future, Centripetal plans to continue to innovate in CTI-driven cybersecurity and to further defend networks against the ever-changing threat landscape.