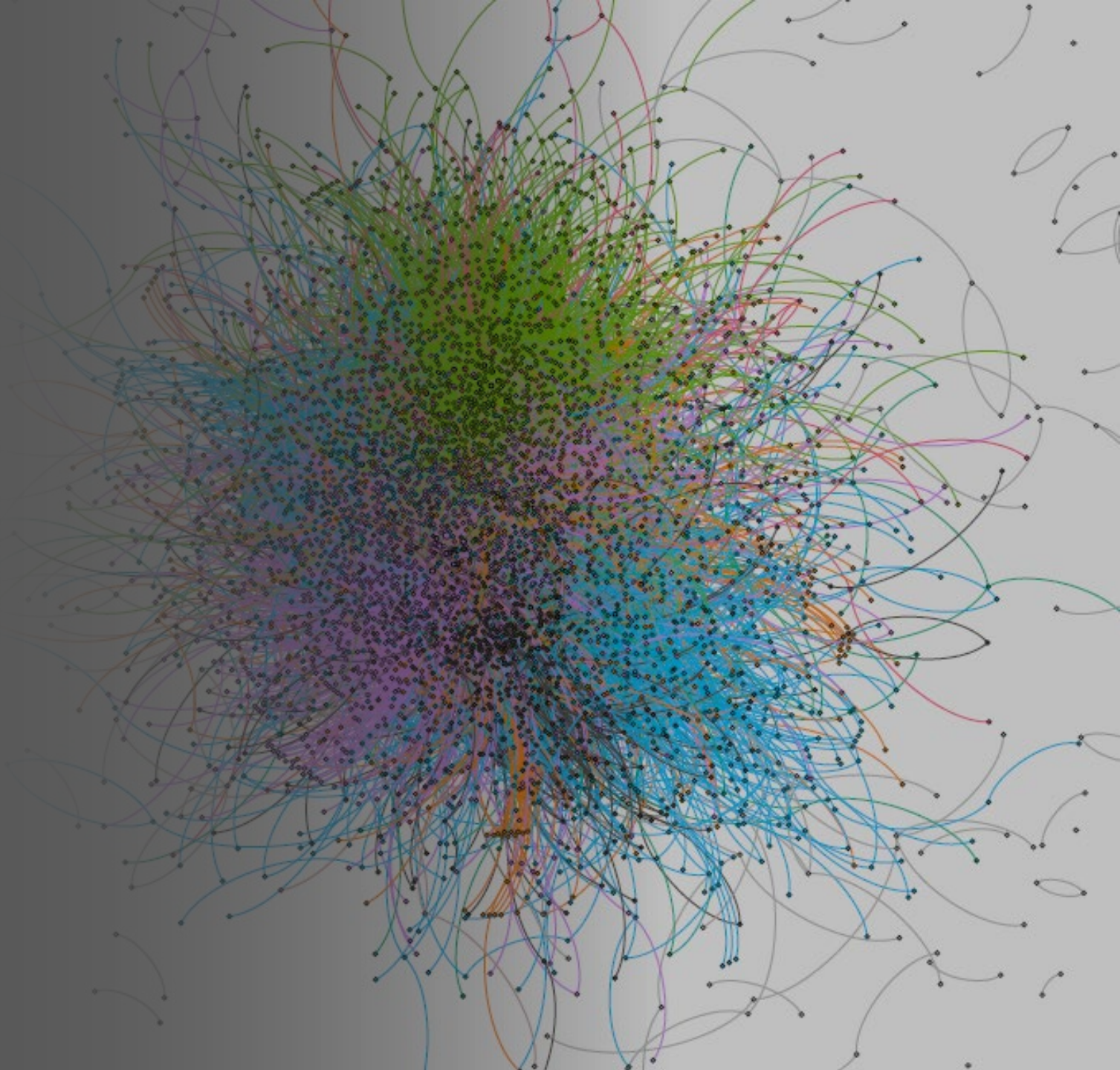




Systemic cyber risks

Jonathan Welburn
RAND Corporation



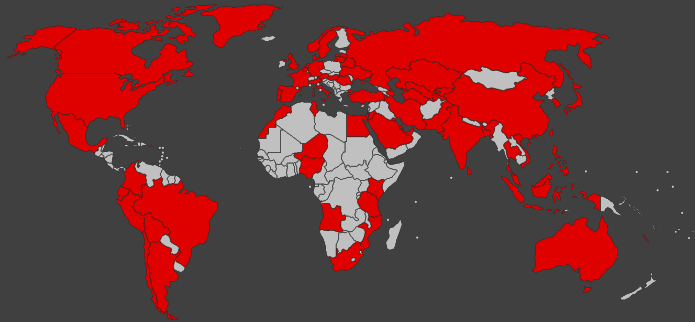
systemic cyber risk



DYN

DDOS attack on major domain name provider

Disabled Amazon, Twitter, Spotify, Netflix, PayPal, CNN, Box, Swedish government

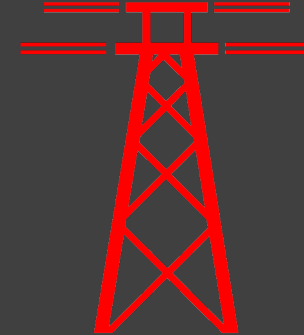


WannaCry/ NotPetya

Malware attack

Global reach

High cost to diverse sector

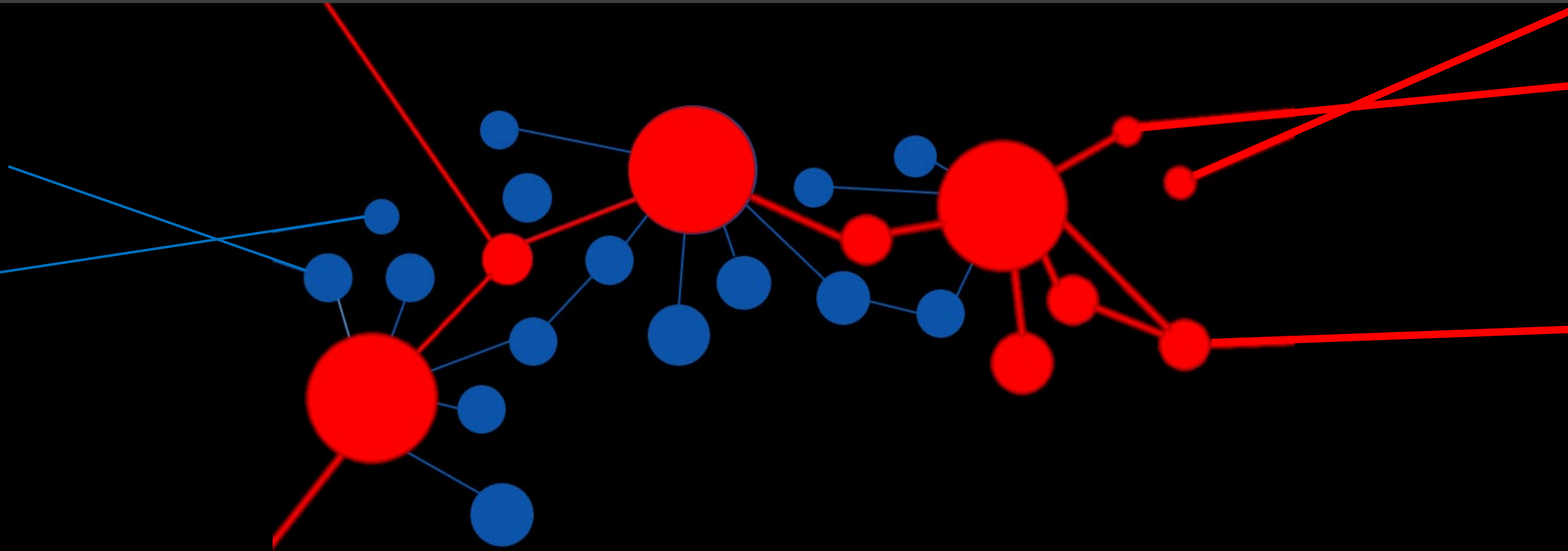


Power grid attacks

Russian intrusion into U.S. power grid

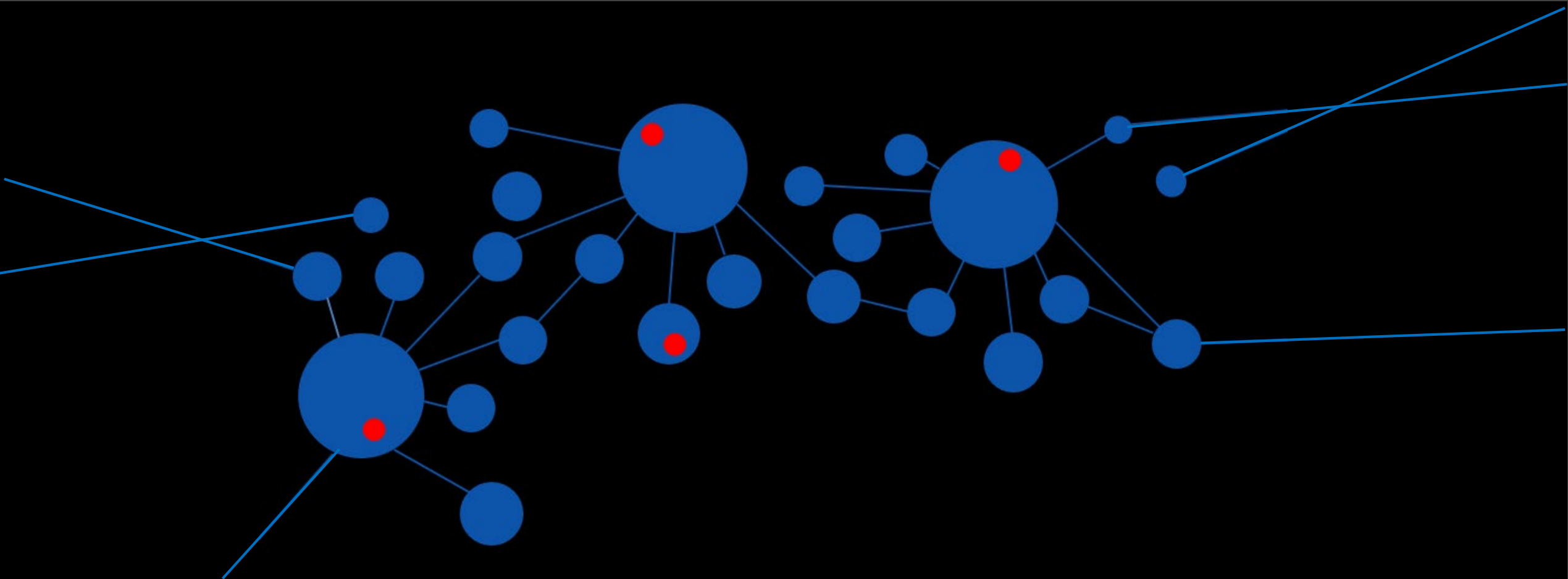
2016 Russian attack on Ukrainian power grid

cascading systemic cyber risk



Domino effect across firms connected by supply chains and computer networks

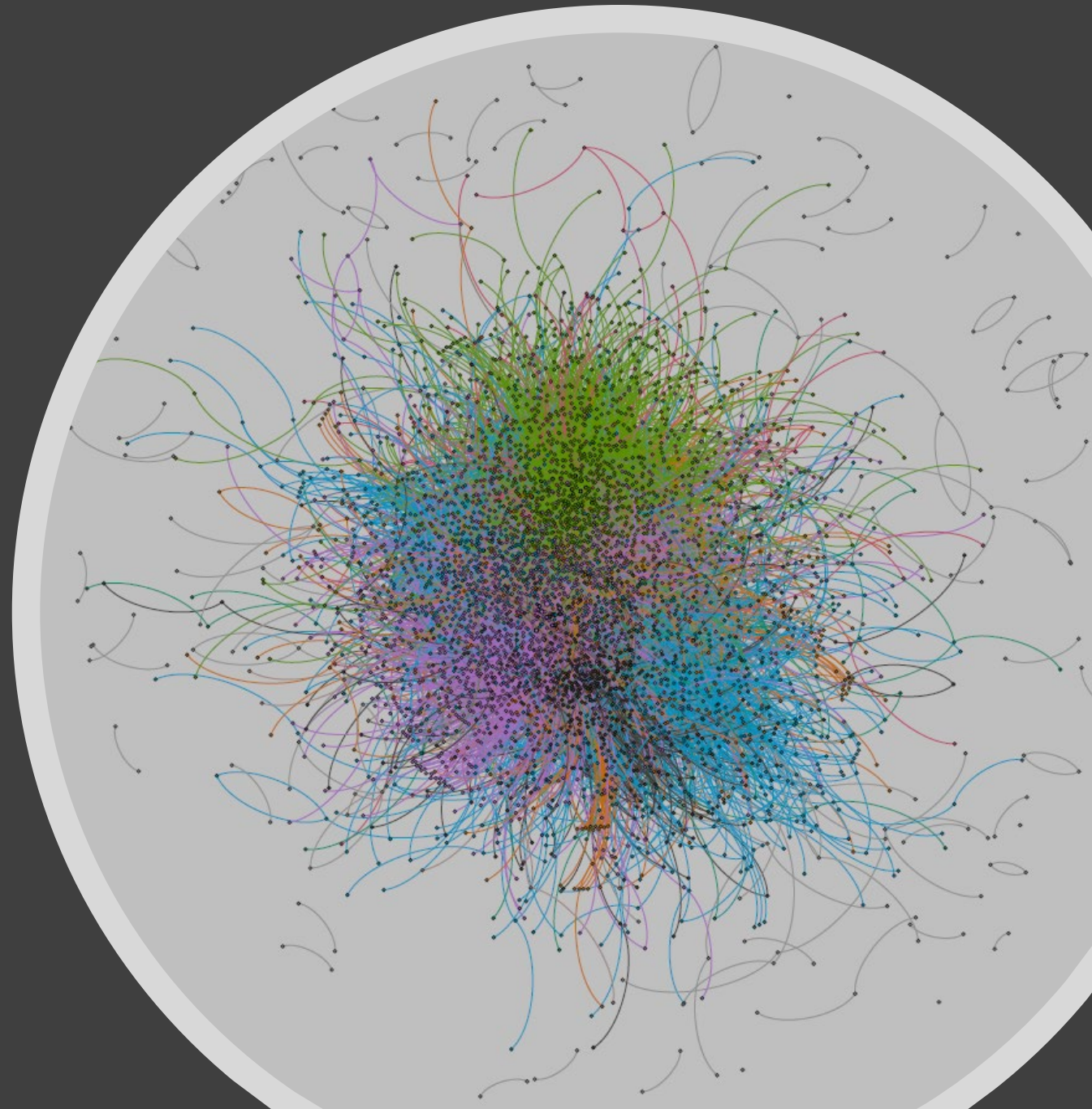
common cause systemic cyber risk



Common software or hardware vulnerability exploited across multiple firms

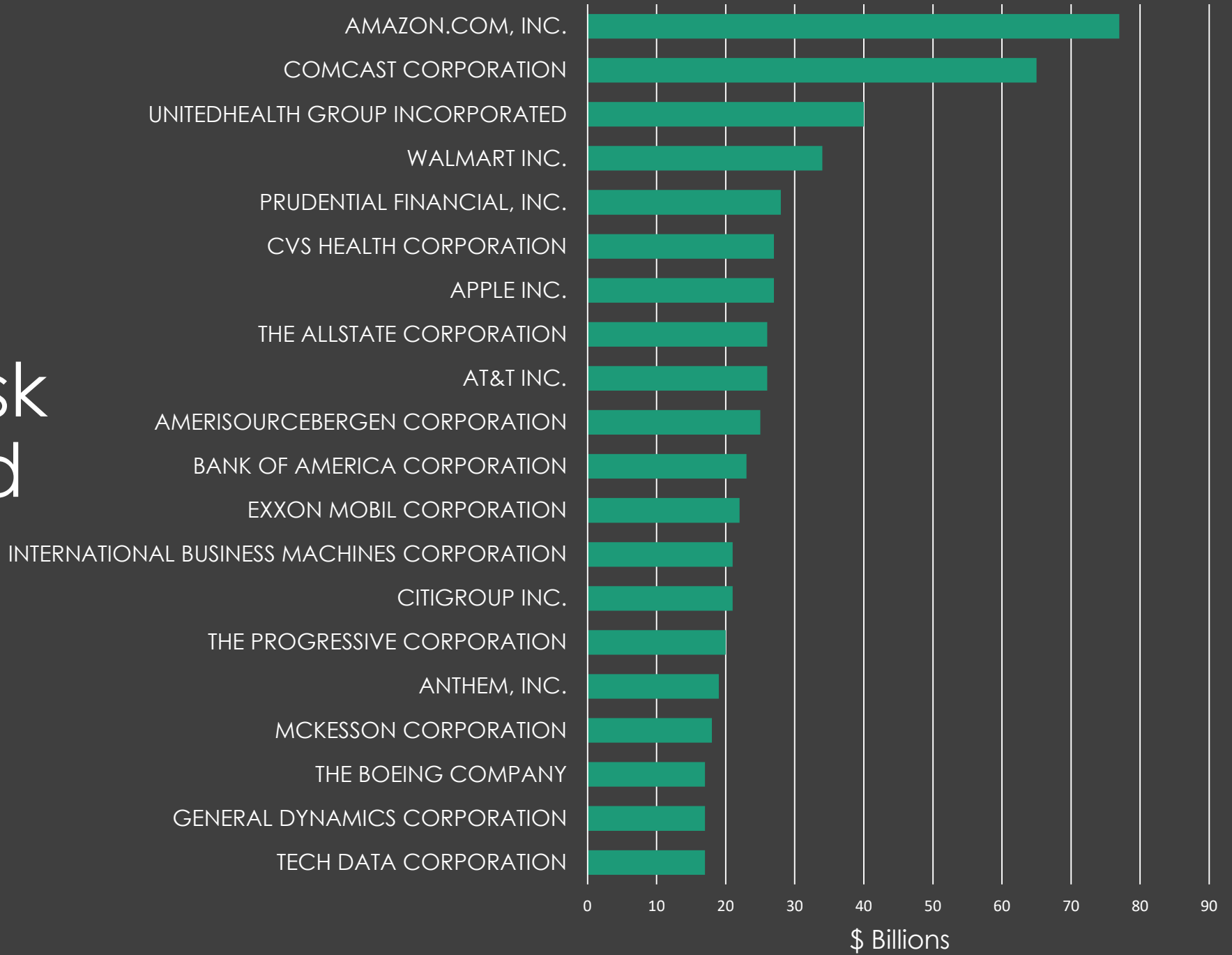


Importance of firm-level networks





Systemic Risk in the Broad Economy



The Zoom logo, consisting of the word "zoom" in white lowercase letters on a blue circular background.The Doordash logo, featuring a white stylized "D" icon followed by the word "DOORDASH" in white uppercase letters on a red circular background.The Slack logo, featuring a colorful icon of four overlapping shapes (cyan, green, yellow, red) followed by the word "slack" in white lowercase letters on a purple circular background.The Disney+ logo, featuring the word "Disney" in its signature script font followed by a plus sign, all in white on a dark blue circular background.

The pandemic has driven a rapid economic transition

The Amazon logo, featuring the word "amazon" in white lowercase letters with a yellow curved arrow underneath, pointing from the 'a' to the 'z'.

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Systemic Risk in the Broad Economy: Interfirm Networks and Shocks in the U.S. Economy, Welburn, Strong, Nekoul, Grana, Marcinek, Osoba, Koirala, and Setodji, RAND Report, RR-4185-RC, 2020.
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https://www.rand.org/pubs/working_papers/WR1311.html

