Economic impact of DDoS attacks

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As DDoS attacks result in the unavailability of network resources for the intended user they can lead to economic losses for businesses in various ways. These losses can be both direct and indirect Anderson et al. 2012.

- Financial damages due to infrastructural downtime, loss of online traffic, paid ransom and customer compensation etc. are accounted as direct losses.
- Damage to company’s reputation and impact at stock prices etc. are considered to be indirect.

Threat of DDoS attacks lure companies into investing in protection and insurance services hence, making it an economic decision for the firms.
The diagram illustrates the interdependencies between various actors involved in DDoS attacks and the economic impact thereof. The actors include:

- **Attacker**: Initiates the attack.
- **DDoS protection companies**: Provide services to protect against DDoS attacks.
- **Victim**: The target of the attack and the entity that is financially affected.
- **Customers of Victim**: Users or clients of the victim.
- **Collateral Victims**: Other entities indirectly affected by the DDoS attack.

The diagram shows the flow of interactions and dependencies, such as the attacker causing damage, the victim being protected or targeted, and the economic impact being felt by various parties. The figure highlights the complex interplay between these actors and the economic consequences of DDoS attacks.
To study and model the impact of the damage caused by Distributed Denial of Service attacks to public/private enterprises and to recommend strategies for investment so as to minimize this damage.
Influence diagram for a DDoS attack

Figure below shows the relationship between the various variables that might cause in an attack and are likely to effect the losses of the victim firm.

Figure: Influence diagram for a DDoS attack
The incentives for attackers to use DDoS attacks can be broadly divided as:

- Economic incentives
- Non-economic incentives

Figure: Motivations behind DDoS attacks
Impact on stock market: Results

1. Stock price of the firm does not drop when the customer service is not affected.

2. Drop in stock prices was visible in case of ING bank in 2013.

3. Indication of loss in victim stock prices when critical infrastructure is under attack.
References


References II


