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Patent Search

Invention Title	EVALUATING THE EFFECTIVENESS OF MULTI FACTOR AUTHENTICATION ONLINE PROTECTING SENSITIVE DATA
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Abstract:

EVALUATING THE EFFECTIVENESS OF MULTI FACTOR AUTHENTICATION ONLINE PROTECTING SENSITIVE DATA The method for the development of the usefulness of MFA as a security solution for safeguarding private information online is assessed in this study. MFA has become a crucial security mechanism against access. It requires users to confirm their identification using two or more separate credentials, usually combining their identity biometrics, their possession that is their smartphone, and their knowledge password. This study demonstrates how MFA dramatically lowers the probability of successful attacks including phishing, credential and brute-force efforts using a combination of real-world case studies, user behaviour analysis, and threat modeling. But the study also points out issues like usability, acceptance, and possible weaknesses in badly designed systems. The results highlight that, despite its limitations, MFA is still an essential part of a multi-layered security approach for protecting digital assets. FIG.1

Complete Specification

Description:Description of the Related Art

[0002] The Cybersecurity has become a major worry in the digital age due to the rapid expansion of cloud services, online platforms, and data-driven activities. Unauthorized access to sensitive data is one of the most common hazards, and it can result in identity theft, financial loss, intellectual property violations, and organizational disruption. Conventional authentication techniques like usernames and passwords have shown themselves to be more susceptible to phishing, brute force assaults, and credential stuffing, among other cyberthreats.

[0003] The implementation of more secure and layered access control systems has consequently become increasingly popular, with Multi-Factor Authentication (MFA) emerging as a top option. By requiring users to provide two or more verification factors from separate categories something they know (password or PIN), something they possess, and something they are biometric verification like fingerprint or facial recognition, multi-factor authentication improves security. Even in the event that one is compromised, MFA dramatically lowers the danger of unwanted access by requiring multiple independent credentials. High levels of security have long been needed in military systems and financial services, which is where MFA got its start. However, MFA has become widely used in a variety of areas, including government, healthcare, finance, and education, as a result of the growth of digital transformation, e-commerce, remote work, and cloud computing. The use of MFA to protect sensitive data is required or strongly advised by regulatory agencies like GDPR, HIPAA, and PCI-DSS, which encourages its use even more.

[0004] Notwithstanding its benefits, MFA is not always effective. The kind of authentication techniques employed, the implementation environment, user compliance, the level of threat actor sophistication are some of the variables that affect it. Even if SMS-based authentication is preferable to no MFA, SIM-swapping attacks can occur. Likewise, inadequate usability and user experience may result in resistance or abuse, so weakening the overall security posture of the system.

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