

DAR ES SALAAM INSTITUTE OF TECHNOLOGY

(DIT)



GROUP ASSIGNMENT

MODULE NAME: FUNDAMENTALS OF E-COMMERCE

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CLASS: OD21IT

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1. Demonstrate the Use of Electronic Payment Systems such as VISA, PayPal, etc.

A. Visa:

Process:

- **Checkout:** At the online store, the customer selects Visa as the payment method.
- **Details Entry:** Customer enters Visa card details including card number, expiration date, and CVV.
- **Authentication:** Often, the customer undergoes 3D Secure authentication (e.g., Verified by Visa).
- **Authorization:** The transaction is authorized by the issuing bank.
- **Confirmation:** Funds are transferred from the customer's account to the merchant's account, and the customer receives a confirmation.

The screenshot displays a checkout interface with three main sections: Billing Address, Payment, and Cart.

Billing Address:

- Full Name: John M. Doe
- Email: john@example.com
- Address: 542 W. 15th Street
- City: New York
- State: NY
- Zip: 10001
- Shipping address same as billing: ☒

Payment:

- Accepted Cards: VISA, MasterCard, American Express, Discover
- Name on Card: John More Doe
- Credit card number: 1111-2222-3333-4444
- Exp Month: September
- Exp Year: 2018
- CVV: 352

Cart:

Product	Price
Product 1	\$15
Product 2	\$5
Product 3	\$8
Product 4	\$2
Total	\$30

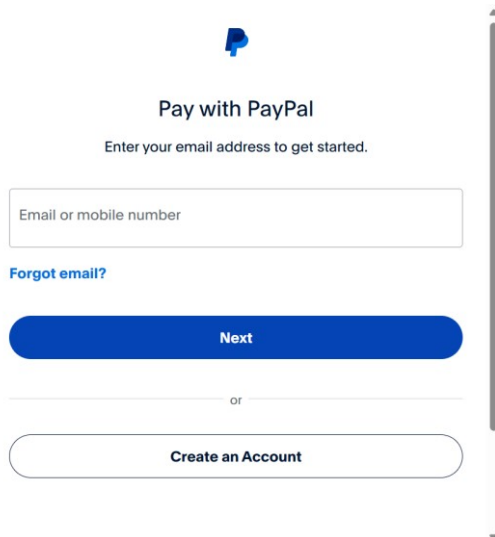
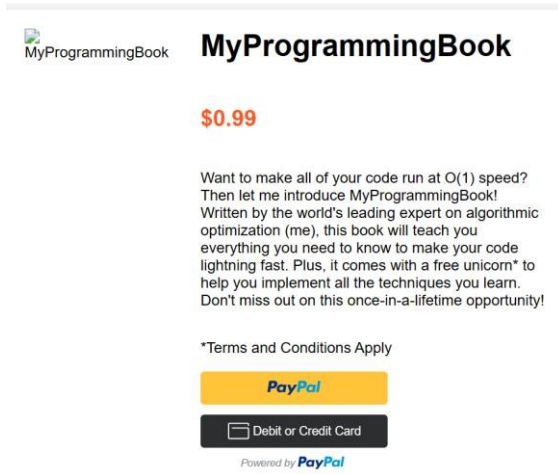
A green button labeled "Continue to checkout" is located at the bottom of the Billing Address section.

B. PayPal:

Process:

- **Checkout:** Customer selects PayPal at checkout.
- **Login:** Customer logs into their PayPal account.
- **Balance or Linked Accounts:** The customer chooses to pay with their PayPal balance, linked bank account, or credit/debit card.

- Authorization: PayPal processes the payment and authorizes the transaction.
- Confirmation: Funds are transferred from the customer's PayPal account to the merchant's PayPal account, and a confirmation email is sent to both parties.



C. Apple Pay

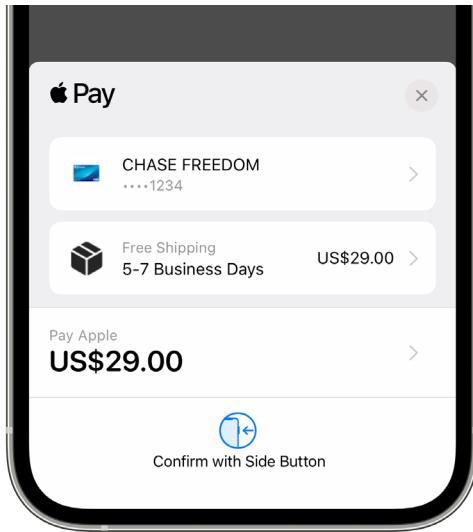
Apple Pay is a mobile payment and digital wallet service by Apple Inc. that allows users to make payments using their Apple devices (iPhone, Apple Watch, iPad, and Mac). Here's how it works and some key features:

How It Works:

1. **Setup:** Users add their credit or debit card information to the Wallet app on their Apple device. This can be done by scanning the card or entering the details manually.
2. **Security:** Apple Pay uses a device-specific number and a unique transaction code. Card numbers are not stored on the device or on Apple servers, and they are not shared with merchants.
3. **Making Payments:**
 - **In-Store:** Users hold their iPhone or Apple Watch near the contactless reader with their finger on Touch ID or by double-clicking the side button on devices with Face ID. The payment is confirmed via fingerprint or facial recognition.
 - **In-App and Online:** Users select Apple Pay as the payment method and authenticate the transaction using Touch ID, Face ID, or their device passcode.

Key Features:

- **Contactless Payments:** Quick and convenient payments in stores that accept contactless payment methods.
- **Online Payments:** Easy and secure payments in apps and on websites that support Apple Pay.
- **Peer-to-Peer Payments:** Send and receive money through the Messages app using Apple Pay Cash.
- **Security and Privacy:** Transactions are secure with encryption and tokenization, and users' card details are kept private.



D. Google Wallet (Google Pay)

Google Wallet, now integrated into **Google Pay**, is a digital wallet platform and online payment system developed by Google. Here's how it works and some key features:

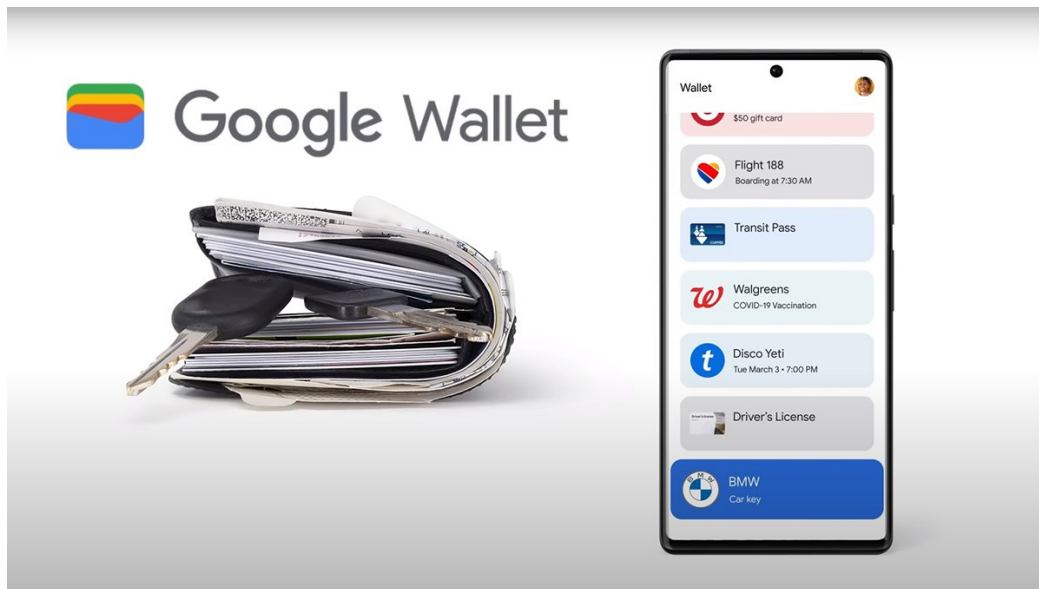
How It Works:

1. **Setup:** Users add their debit, credit, loyalty cards, and even transit cards to the Google Pay app. This can be done by scanning the card or entering details manually.
2. **Security:** Google Pay uses tokenization to secure transactions. Card information is not shared with merchants; instead, a virtual account number represents card information.
3. **Making Payments:**
 - **In-Store:** Users unlock their Android device and hold it near the contactless reader. The transaction is completed without opening the app.
 - **In-App and Online:** Users select Google Pay as the payment method and authenticate the transaction using their device's security mechanism (PIN, pattern, or biometric authentication).

Key Features:

- **Contactless Payments:** Easily make payments in stores that accept contactless payments.

- **Online and In-App Payments:** Use Google Pay for quick and secure payments on websites and apps.
- **Peer-to-Peer Payments:** Send and receive money to/from friends and family using their email address or phone number.
- **Rewards and Offers:** Store and use loyalty cards, gift cards, and offers directly from the app.



E. Cryptocurrency

Cryptocurrency is a digital or virtual form of currency that uses cryptography for security. The most well-known cryptocurrency is Bitcoin, but there are thousands of other cryptocurrencies like Ethereum, Litecoin, and Ripple. Here's how it works and some key features:

How It Works:

1. **Blockchain Technology:** Cryptocurrencies operate on a decentralized ledger technology called blockchain, which records all transactions across a network of computers.
2. **Mining and Transactions:** Cryptocurrencies like Bitcoin are mined by solving complex mathematical problems that validate transactions and add them to the blockchain. Users can also buy cryptocurrencies through exchanges and store them in digital wallets.

3. Making Payments:

- **Wallets:** Users store their cryptocurrency in a digital wallet, which has a public key (address) for receiving funds and a private key for signing transactions.
- **Transactions:** To make a payment, the user sends cryptocurrency from their wallet to the recipient's wallet address. The transaction is verified by the network (miners) and recorded on the blockchain.

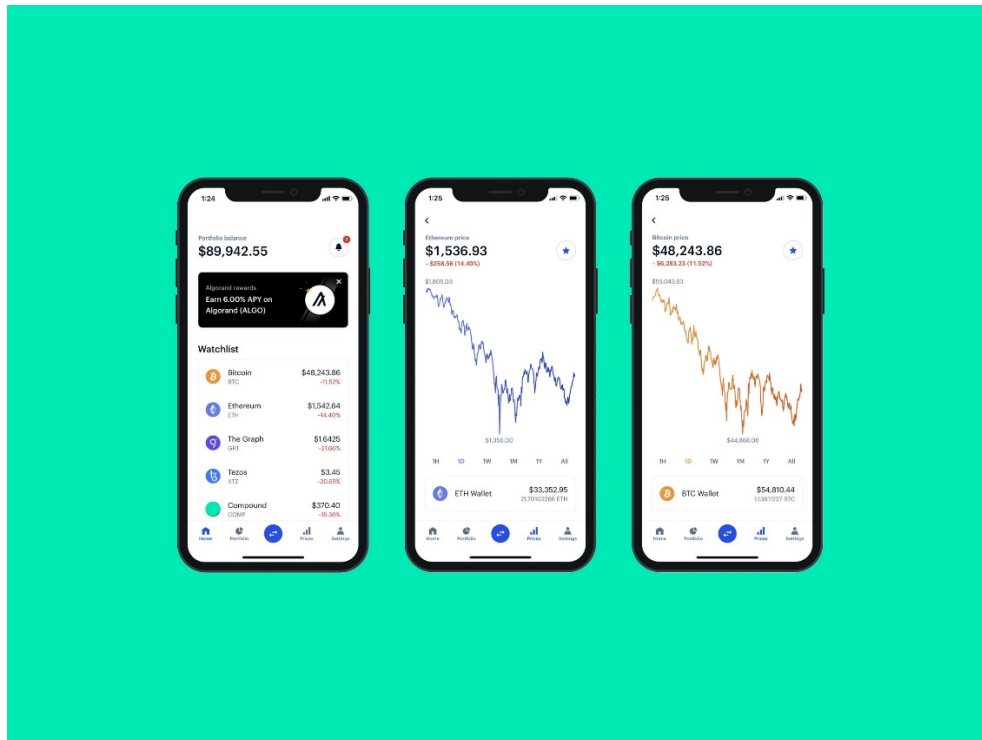
Key Features:

- **Decentralization:** No central authority or government controls cryptocurrencies; they operate on a peer-to-peer network.
- **Security:** Cryptography secures transactions, making them highly secure and resistant to fraud.
- **Anonymity:** Transactions can be semi-anonymous, with public addresses not directly linked to personal identities.
- **Global and Fast:** Cryptocurrencies enable fast and low-cost transactions across borders without the need for intermediaries.
- **Investment:** Many people invest in cryptocurrencies as a speculative asset, hoping their value will increase over time.

Popular Use Cases:

- **Online Purchases:** Some merchants accept cryptocurrencies as payment for goods and services.
- **Remittances:** Sending money across borders quickly and at a lower cost compared to traditional methods.
- **Investment:** Buying and holding cryptocurrencies as a form of digital investment.

These payment systems—Apple Pay, Google Wallet (Google Pay), and cryptocurrencies—offer diverse methods for digital transactions, each with unique features and benefits, catering to different user needs and preferences.



2. Different E-Marketing Techniques Used in E-Commerce

A. Search Engine Optimization (SEO)

Description: SEO involves optimizing your e-commerce site to rank higher in search engine results pages (SERPs) for relevant keywords. The goal is to increase organic (non-paid) traffic to your site.

Techniques:

- **Keyword Research:** Identifying the keywords and phrases that potential customers are using to search for products like yours.
- **On-Page SEO:** Optimizing individual pages on your site, including meta titles, meta descriptions, header tags, and image alt text.
- **Content Creation:** Developing high-quality, relevant content such as blog posts, product descriptions, and articles that incorporate targeted keywords.
- **Technical SEO:** Ensuring your website's backend is optimized for search engines. This includes site speed, mobile-friendliness, and secure connections (HTTPS).
- **Link Building:** Acquiring backlinks from reputable websites to improve your site's authority and search engine ranking.

B. Pay-Per-Click Advertising (PPC)

Description: PPC is an advertising model where you pay each time someone clicks on your ad. These ads can appear on search engines (like Google Ads) and social media platforms.

Techniques:

- **Keyword Targeting:** Selecting keywords that are relevant to your products and bid on them in ad auctions.
- **Ad Copy:** Writing compelling ads that attract clicks. This includes creating engaging headlines and descriptions.
- **Landing Pages:** Designing landing pages that are directly relevant to the ad content and optimized for conversion.
- **A/B Testing:** Running multiple versions of ads to see which performs best, then optimizing based on performance data.
- **Budget Management:** Setting daily or monthly budgets and adjusting bids to ensure optimal ad spend.

C. Email Marketing

Description: Email marketing involves sending emails to prospects and customers to promote products, offer deals, and nurture relationships.

Techniques:

- **List Building:** Collecting email addresses through sign-up forms, lead magnets (like eBooks), and purchase processes.
- **Segmentation:** Dividing your email list into segments based on customer behavior, demographics, or preferences.
- **Personalization:** Tailoring email content to individual recipients using their names and past purchase data.
- **Automation:** Setting up automated email sequences, such as welcome series, abandoned cart reminders, and re-engagement campaigns.
- **Analytics:** Tracking open rates, click-through rates, and conversion rates to refine email strategies.

D. Social Media Marketing

Description: Using social media platforms to promote products, engage with customers, and build brand awareness.

Techniques:

- **Content Creation:** Producing engaging content, such as images, videos, and stories, tailored to each social media platform.
- **Paid Ads:** Running targeted ads on platforms like Facebook, Instagram, and Twitter to reach specific audiences.
- **Influencer Partnerships:** Collaborating with influencers who have large followings to promote your products.
- **Community Engagement:** Responding to comments, messages, and mentions to foster a sense of community and customer loyalty.
- **Analytics:** Using social media insights to track engagement, reach, and conversion metrics.

E. Content Marketing

Description: Content marketing involves creating and sharing valuable content to attract and retain a target audience.

Techniques:

- **Blogging:** Writing blog posts that provide valuable information, answer customer questions, and drive organic traffic.
- **Video Marketing:** Creating videos that showcase products, provide tutorials, or share customer testimonials.
- **Infographics:** Designing infographics that present information in a visually appealing and easily digestible format.
- **Ebooks/Whitepapers:** Offering in-depth resources that provide value to your audience and establish your brand as an authority.
- **Webinars/Podcasts:** Hosting live or recorded sessions to engage with your audience and provide educational content.

F. Affiliate Marketing

Description: Affiliate marketing involves partnering with affiliates who promote your products and earn a commission for each sale they generate.

Techniques:

- **Affiliate Networks:** Joining affiliate networks where affiliates can discover and promote your products.
- **Commission Structures:** Offering attractive commission rates to incentivize affiliates to promote your products.
- **Tracking Links:** Providing unique tracking links to affiliates to monitor the sales they generate.
- **Marketing Materials:** Supplying affiliates with banners, images, and copy to help them effectively promote your products.
- **Performance Analytics:** Tracking affiliate performance to identify top performers and optimize the affiliate program.

3. Why E-Consortia is Inevitable in E-Commerce

E-Consortia:

Definition: E-consortia are collaborative groups of businesses that come together to achieve common goals in the e-commerce space. E-Consortia is inevitable in E-Commerce because of the following reasons

A. Resource sharing

Cost Efficiency:

- **Shared Technology:** By pooling resources, consortium members can invest in advanced technology that might be too expensive individually. This includes e-commerce platforms, cybersecurity systems, and data analytics tools.
- **Reduced Costs:** Shared infrastructure, such as servers and logistics networks, lowers operational costs for all members.

Example:

- **Marketplaces:** Platforms like Amazon and Alibaba allow various sellers to use their established infrastructure, reducing the need for individual investments in logistics and technology.

B. Enhance Market Reach

Broader Customer Base:

- **Collective Marketing:** Consortium members can jointly market their products and services, reaching a wider audience than they could individually.
- **Cross-Promotions:** Members can cross-promote each other's products, benefiting from each other's customer bases.

Example:

- **Travel Alliances:** Airline alliances like Star Alliance and Oneworld enable member airlines to offer combined services, expanding their market reach and customer options.

C. Innovation and R&D

Collaborative Innovation:

- **Shared Knowledge:** Members can share insights and research findings, leading to more innovative products and solutions.
- **Joint R&D:** Pooling resources for research and development efforts can lead to breakthroughs that would be difficult to achieve alone.

Example:

- **Technology Consortia:** Initiatives like the USB Implementers Forum (USB-IF) bring together companies to develop and promote USB standards, leading to faster and more widespread technological advancements.

D. Risk Mitigation

Distributed Risk:

- **Shared Ventures:** By collaborating on new ventures, consortium members distribute the financial and operational risks among themselves.
- **Market Uncertainty:** E-consortia help cushion individual businesses against market fluctuations and uncertainties by leveraging collective strength.

Example:

- **Joint Ventures:** Automotive consortia, where companies like BMW and Toyota collaborate on developing new technologies (e.g., hydrogen fuel cells), spread the risks and costs involved.

E. Standardization

Unified Standards:

- **Interoperability:** Establishing common standards for technology, data exchange, and operational processes ensures compatibility and smooth interactions among consortium members.
- **Customer Trust:** Standardized practices and products enhance customer trust and satisfaction due to consistent quality and reliability.

Example:

- **Financial Services:** The SWIFT network in banking ensures standardized communication protocols for international transactions, facilitating smoother and more secure financial operations.

F. Competitive advantage

☐ Resource Sharing:

- **Shared Resources:** Reduced costs by pooling technology and logistics.
- **Unified Branding:** Enhanced market presence and consumer trust.

☐ Economies of Scale:

- **Bulk Purchasing:** Negotiated better deals with suppliers.
- **Shared Services:** Lowered operational expenses through shared warehousing and IT support.

☐ Market Expansion:

- **Combined Networks:** Leveraged each other's distribution channels.
- **Joint Marketing:** Amplified reach through collective efforts.

☐ Innovation:

- **Shared Development Costs:** Jointly developed new products and technologies.
- **Faster Innovation:** Accelerated development through pooled expertise.

G. Enhanced Data Utilization

☐ Customer Insights:

- **Aggregated Data:** Deeper understanding of consumer behavior.
- **Behavioral Analysis:** More accurate insights into purchasing patterns.

☐ Personalization:

- **Targeted Marketing:** Personalized campaigns based on shared customer profiles.
- **Product Recommendations:** Improved accuracy in suggesting products.

❑ **Operational Efficiency:**

- **Supply Chain Optimization:** More efficient inventory management and logistics.
- **Demand Forecasting:** Better prediction of customer demand.

❑ **Security and Compliance:**

- **Collective Security:** Strengthened cybersecurity through shared resources.
- **Regulatory Compliance:** Ensured adherence to data protection laws.

4. Virtual Communities with Vivid Examples in Tanzania

Virtual Communities:

Definition: Groups of people who interact online based on shared interests, goals, or activities.

Importance:

- **Social Interaction:** Provide platforms for people to connect and share information.
- **Support Networks:** Offer support and advice on various topics, from health to business.

Examples in Tanzania:

A. JamiiForums

Description: JamiiForums is one of Tanzania's largest online forums, providing a platform for Tanzanians to engage in discussions on a wide range of topics, including politics, social issues, technology, and entertainment.

Significance:

- **Information Exchange:** Members share news, opinions, and personal experiences, contributing to a vibrant exchange of ideas.
- **Social Impact:** JamiiForums has been instrumental in raising awareness about social issues and facilitating citizen journalism.

B. Wananchi Group on Facebook

Description: The Wananchi Group is a Facebook community comprising Tanzanians from diverse backgrounds, sharing information, news, and updates about their communities.

Significance:

- **Community Building:** Members connect with fellow Tanzanians, regardless of geographical location, fostering a sense of unity and belonging.
- **Local Engagement:** Discussions often revolve around local businesses, events, and initiatives, promoting community engagement and support.

C. Tanzania Mums Network

Description: The Tanzania Mums Network is an online community for mothers in Tanzania, providing a platform to share parenting tips, seek advice, and offer support.

Significance:

- **Support Network:** Mothers exchange tips, advice, and experiences related to motherhood, fostering a supportive and nurturing environment.
- **Resource Sharing:** The community shares information about childcare, health, education, and other topics relevant to parenting in Tanzania.

D. Kigamboni Community App

Description: The Kigamboni Community App is a mobile application designed for residents of Kigamboni, a district in Dar es Salaam, Tanzania. It serves as a virtual community hub, providing information about local news, events, services, and businesses.

Significance:

- **Local Connectivity:** Residents stay informed about local news, events, and developments, strengthening community ties and participation.

- **Business Promotion:** Local businesses use the app to promote their products and services, enhancing economic activity within the community

E. Tech-Tanzania

Description: Tech-Tanzania is an online platform or community dedicated to technology enthusiasts, professionals, and entrepreneurs in Tanzania. It serves as a hub for sharing information, discussing tech-related topics, and networking within the Tanzanian tech ecosystem.

Significance:

- **Knowledge Sharing:** Tech-Tanzania facilitates the exchange of ideas, insights, and expertise among members, contributing to the growth of the tech sector in Tanzania.
- **Networking:** Professionals and entrepreneurs can connect with like-minded individuals, potential collaborators, and mentors within the Tanzanian tech community.
- **Resource Hub:** The platform may provide resources such as job postings, events, workshops, and educational materials related to technology and innovation in Tanzania.

F. Tanzania Blogger Network

Description: The Tanzania Bloggers Network (TBN) is a community or network of bloggers and content creators in Tanzania. It aims to unite bloggers, promote blogging as a profession, and advocate for freedom of expression and digital rights in Tanzania.

Significance:

- **Blogging Community:** TBN provides a platform for Tanzanian bloggers to connect, collaborate, and support each other in their blogging endeavors.
- **Advocacy:** TBN advocates for bloggers' rights, freedom of expression, and digital literacy, contributing to a vibrant online discourse in Tanzania.

- **Influence:** Tanzanian bloggers within the TBN network may have significant influence and reach, impacting public opinion, consumer behavior, and societal norms.

G. Mwananchi Digital Platform

Description: The Mwananchi Digital Platform is an online platform operated by Mwananchi Communications Limited, one of Tanzania's leading media companies. It serves as a digital extension of the Mwananchi newspaper, offering news, information, and multimedia content to a digital audience.

Significance:

- **Digital News Delivery:** The Mwananchi Digital Platform provides timely and up-to-date news coverage, articles, and multimedia content to online audiences across Tanzania and beyond.
- **Audience Engagement:** Readers can interact with content through comments, social media sharing, and other engagement features, fostering community and dialogue around news topics.
- **Multimedia Content:** In addition to written articles, the platform may offer multimedia content such as videos, photo galleries, and interactive features to enhance user experience and storytelling.

Significance of Virtual Communities in Tanzania

- **Information Sharing:** Virtual communities facilitate the dissemination of information, enabling Tanzanians to stay informed about local and national developments.
- **Community Building:** These platforms foster connections and relationships among Tanzanians, promoting solidarity and social cohesion.
- **Empowerment:** Virtual communities empower individuals to express their opinions, share experiences, and participate in discussions on issues of importance to them.
- **Business Promotion:** Businesses leverage virtual communities to reach their target audience, promote their products and services, and engage with customers on a local level.

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