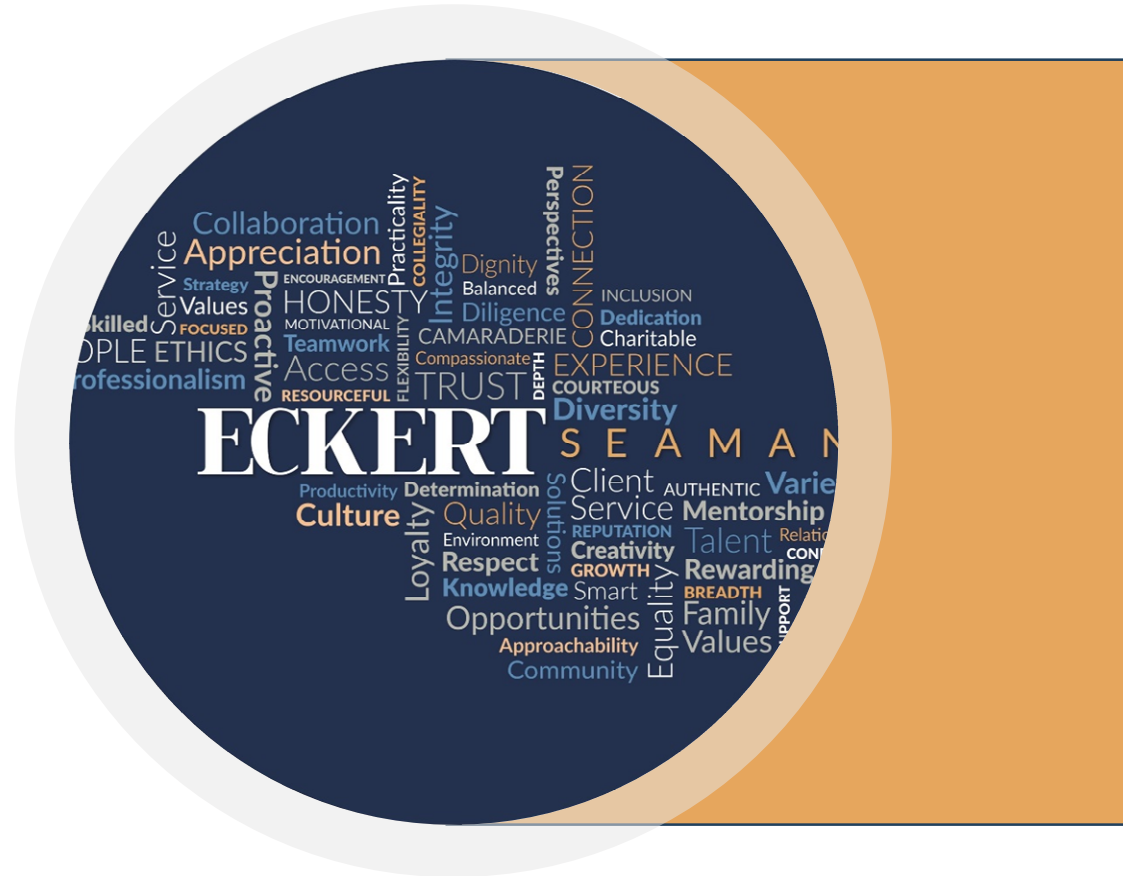
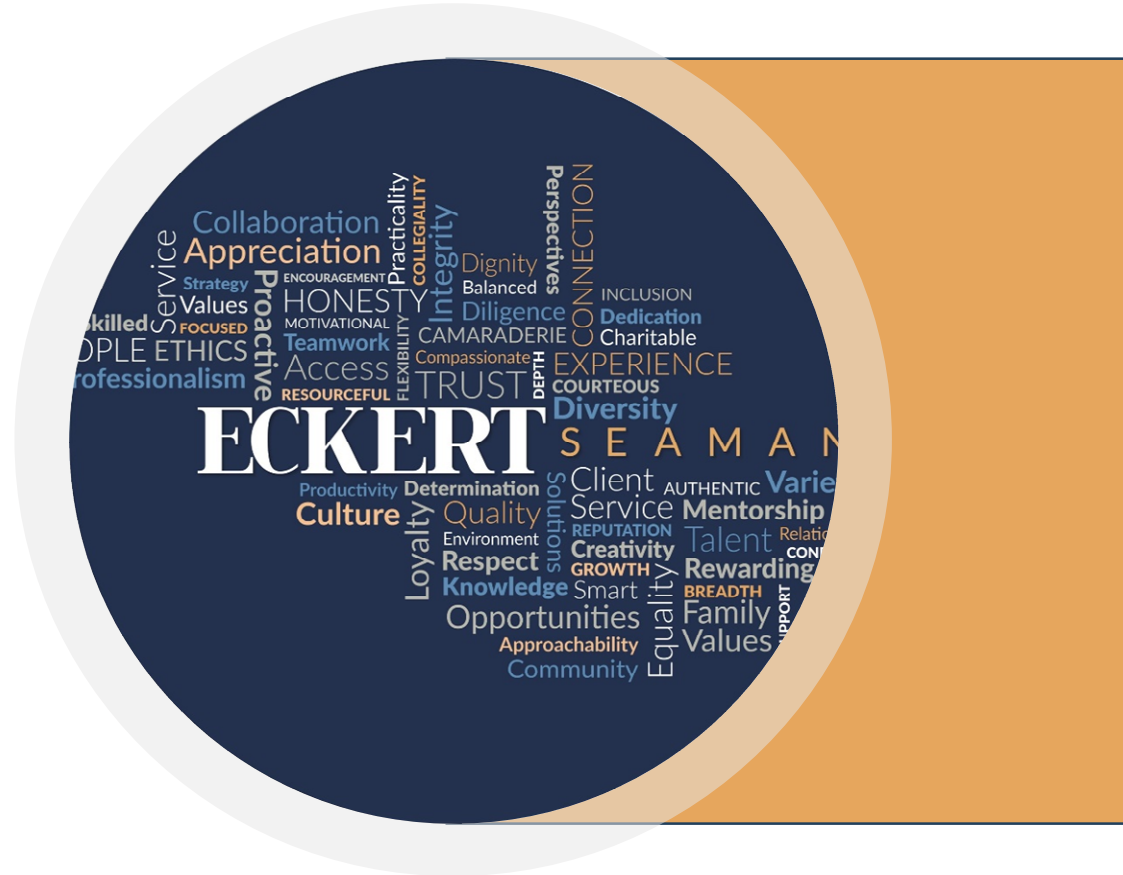


1. **What is the metaverse?**
2. **Industries within the metaverse**
3. **How can you join the metaverse?**
4. **Protecting Intellectual Property in the metaverse**



What is the Metaverse?



What is the metaverse?



Game



Website



Place



An evolution of the internet

What is the metaverse?

An evolution of the internet

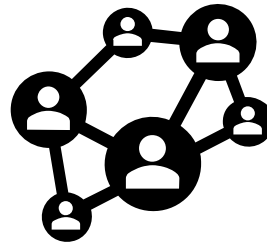
Web 1.0

**Connected Information -
Internet**



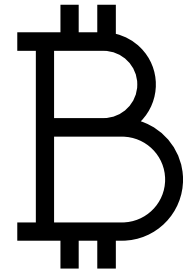
Web 2.0

**Connected People:
- Social media**



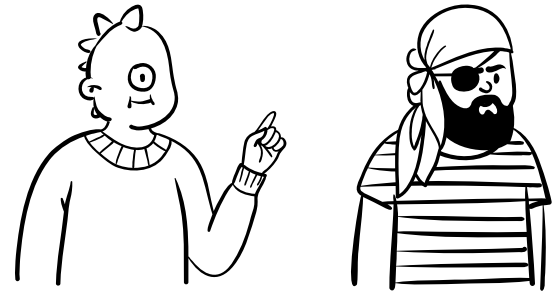
Web 3.0

**Connects People, Places,
and Things**



What is the metaverse?

- Large scale virtual environment(s) or virtual world(s)
- Virtual spaces where humans from all over the world can interact, congregate, and share experiences at a single point in time
- More immersive, expansive, and social than what we currently experience with the internet
 - Device agnostic
 - 24/7
- Human manifestations in the metaverse
 - Living in the metaverse as an Avatar(s)
 - Unlimited potential for human expression
 - Transformative shift in human behavior



What is the metaverse?

- **Augmented Reality (AR):** Superimposes digital content onto the physical world
 - Snapchat filters
 - Pokémon Go
- **Mixed Reality (MR):** Users interact with physical and virtual objects with a head-mounted display
 - Scan a physical space and embed a virtual environment
- **Virtual Reality (VR):** Physical environment is completely replaced with audio and visual stimuli in a virtual world

What is the metaverse?

- **Artificial Intelligence (AI):** Technology that processes data to produce information that augments human intelligence, perception, and predictive abilities
- **Machine Learning (ML):** a subset of AI in which computer programs use certain methods to detect relationships and patterns in data.
- **Generative AI:** A collection of models and systems that can produce new text, images, video, audio, music code, and synthetic data.
 - ChatGPT

What is the metaverse?

- Decentralization vs. Centralization
 - Decentralization requires a distributed network and a decentralized ownership structure
 - Centralized metaverses do not use blockchain protocols
- Roblox Metaverse
- Fortnite Metaverse
- Meta

Roblox metaverse

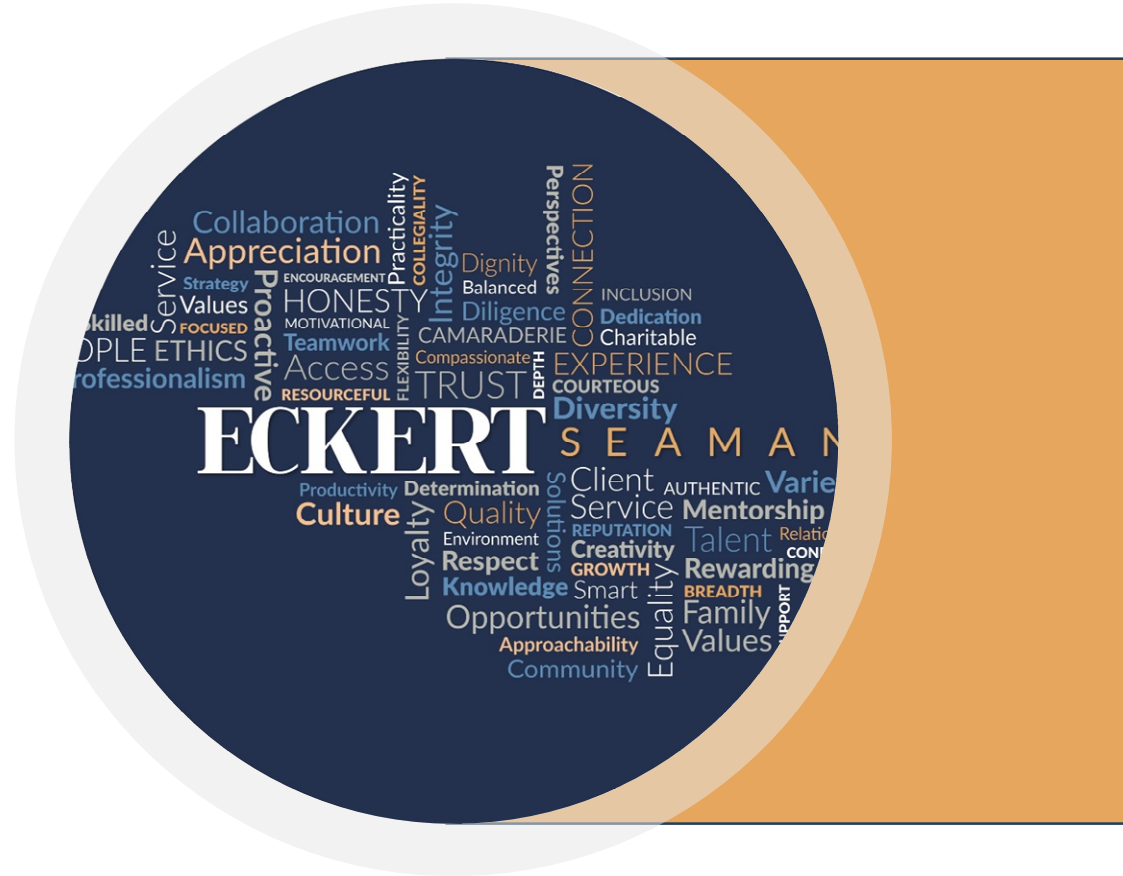
	<u>2022</u>	<u>2023</u>
• Registered Accounts	3.9 billion	5.5 billion
• Hours of Engagement:	49.3 billion	60 billion
• Monthly Active Users:	9 million (2016)	223 million
• Daily Active Users:	56 million	78 million
• Hours per day:	2.6 hours	2-6 hours
• Daily New Friendships:	17 million	20 million
• Revenue:	\$2.2 billion	\$2.8 billion
• Creator Payout	\$623 million	\$761 million
• Over 500 billion hours of user involvement to date		
• 44% of users are under the age of 13		
• 40 million distinct games since 2008		

Decentralized metaverse

- 1 million unique players in 2022
- 23,000 LAND owners
 - 114,835 plots
- Blockchain protocols
- User-owned and generated economy

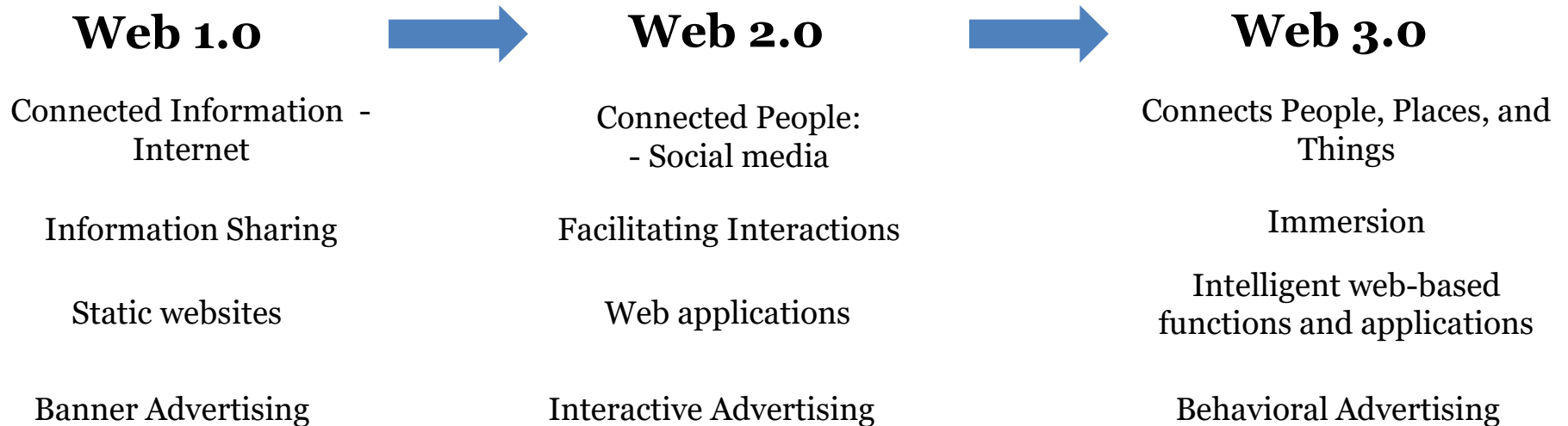


Industries within the Metaverse



Advertising in the metaverse

An evolution of the internet



Commerce in the metaverse



Physical to Physical

- Physical stores



Digital to Physical

- Ecommerce



Virtual to Virtual

- Gaming economies



Virtual to Physical

- Metaverse



Physical to Virtual

- Metaverse

Education in the metaverse

- Immersive, interactive, and engaging online learning environments not limited by physical or formal constraints imposed by schools or institutions
 - Enables world-wide collaboration
- Improved diversity, equality, and inclusion
- Significant progress is needed
 - Access to metaverse technology
 - Guidance
 - Technological improvement

Entertainment in the metaverse

- Attending virtual concerts
 - DJ Marshmellow held a live concert in Fortnite with 10 million attendees
- Theme Parks
- Immersive Movies
 - Personalized movie content & 360-degree filming
- Live Sports
- Tourism
 - VR City is a collection of famous landmarks you can visit for under \$5
- Estimated to grow by about \$30 billion by 2026

1. Enhance Product Design

- VR and AR can streamline product design
- Drag, drop, design assets in simulations
 - Full autonomy
- Digital Twins
 - Recreate an exact replica in the metaverse with real-time data
- Increases efficiency, safety, and decreases the demands of physical testing



2. Quality Control Improvement

- Conduct inspections and detect defects
- Simulate real-world scenarios with digital twins
- Test products and processes in a virtual environment
- Faster problem resolution, cost savings, improved quality control
- Airbus
 - Drones with high-definition cameras and AR LIDAR sensors interact with AR goggles



3. Manufacturing

- Test factory scenarios
- Use simulations to find solutions to automate and optimize facilities
- Data-driven insights for continuous improvement
- BMW has a virtual factory that simulates a vehicle production line
 - Replicated entire production line to ensure everything ran smoothly before building real factory

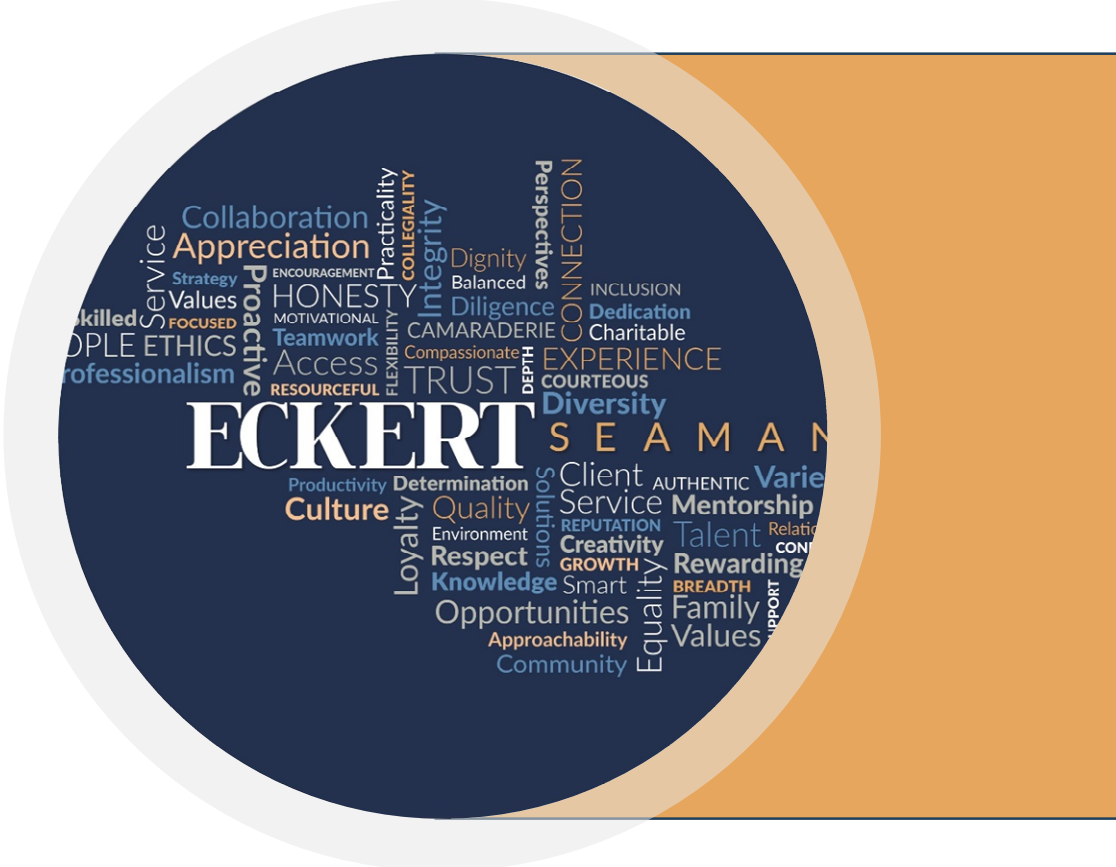


4. Training

- Immersive training experiences
- Unlimited practice opportunities in a personalized space
- Reduces risks and increases safety
- Enhances efficiency and monitoring
- Honeywell uses AR and VR
 - Departing workers record activities
 - New hires use headsets to see the information overlaid on their own activities



Protecting Intellectual Property in the Metaverse



Trademarks in the Metaverse

- Do trademark registrations for physical goods apply in the virtual world?
- A trademark is any word, phrase, symbol, design, or a combination thereof that identifies your goods or services
- The use of trademarks is vital even in virtual worlds
- By leveraging a trademark in the metaverse, companies can reach a wider audience with increased branding
- Risks
 - Enforcement
 - Brand dilution

Trademarks in the Metaverse

1. Register your trademarks
 - Register crypto and metaverse versions as well
2. Report trademark infringement to the platform
3. Immediately notify counsel
 - Perform a cost-benefit analysis
4. Monitor potential infringement across major metaverse platforms

Patents in the Metaverse

- Majority of metaverse related patents are in the virtual reality or augmented reality fields
- Software patents and computer-implemented methods
- Licensing opportunities
 - How do you monitor?

Copyrights in the Metaverse

- Copyrights protect “original works of authorship fixed in a tangible medium of expression”
- Unlimited copyright opportunities in the metaverse
 - Any physical item, song, book, movie, artwork, etc. may be displayed in the metaverse
- Copyright sensitive and important materials
- Monitor potential infringement
- Ensure appropriate contract clause language to ensure there is no ownership dispute over content

Intellectual Property Enforcement Issues

- Multi-jurisdictional issues
 - Where do you enforce your intellectual property rights?
- Anonymity in the metaverse
 - How do you enforce your intellectual property rights?
- Internet-based approaches
 - Digital Millennium Copyright Act
 - Section 230 of the Communications Decency Act
- Decentralized metaverse platforms do not reside on a single server
 - There is not an authority to remove infringing content
 - Once content is on the blockchain, it is there forever

Data Privacy Considerations

- Can virtual activities and avatars be traced back to real identities?
- Physical traits and movements
 - A study found 95% of VR users could be identified after less than 5 minutes of body motion tracking data*
 - Building a personality profile (eye movements, time spent looking at advertisements, etc.)
- More extensive data collection
 - Registration data, Payments, Service transactions. Gait, gaze, posture, emotion, haptic sensations with objects, avatars, and content
- How to share personal data?
- How to obtain approval?
- What are your privacy obligations?
 - An avatar is a digital representation

Legal Concerns

- Criminal and abusive actions
 - Murder and assault in the metaverse
- Do you give an avatar personhood?
- Metaverse lawyers
- IP ownership
- Data rights
- Security
- Privacy

The Future of the Metaverse

Dependent upon:

- Infrastructure improvements
 - 5G and beyond
 - WiFi6
 - Cloud computing
 - Computer hardware advancements
- Technology
 - Devices
 - Wearable
 - Haptic sensors
- Meeting the needs of consumers
 - How effectively can it connect other people and make things
- Can it overcome the hype?
 - According to Pew Research, 54% of technology experts expect by 2040 the metaverse will be a more refined, truly fully-immersive, and well-functioning aspect of daily life for 500 million+ people

Questions?

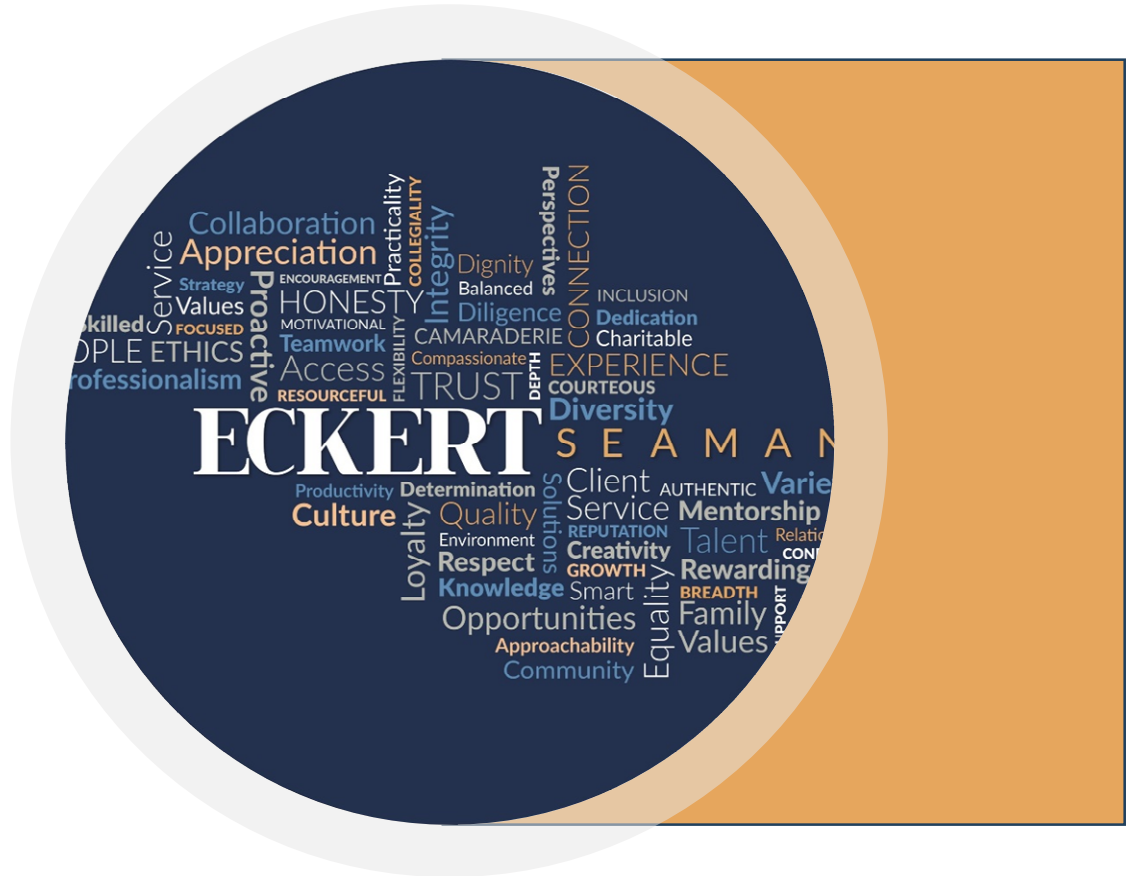


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