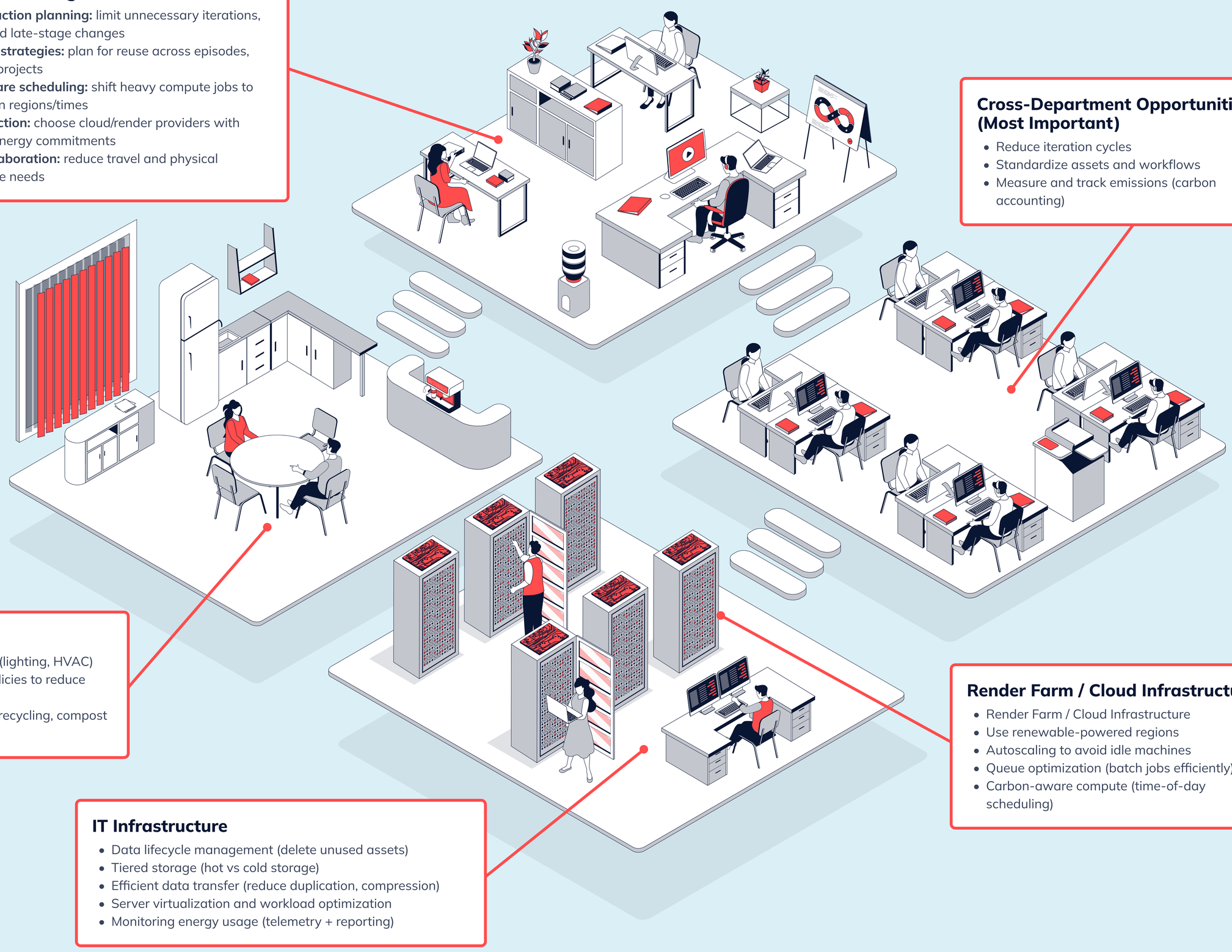
One Studio, Many Actions

Through the animation production pipeline

Producing for the Planet



Production & Management

- **Green production planning:** limit unnecessary iterations, revisions, and late-stage changes
- **Asset reuse strategies:** plan for reuse across episodes, seasons, or projects
- **Carbon-aware scheduling:** shift heavy compute jobs to lower-carbon regions/times
- **Vendor selection:** choose cloud/render providers with renewable energy commitments
- **Remote collaboration:** reduce travel and physical infrastructure needs

Cross-Department Opportunities (Most Important)

- Reduce iteration cycles
- Standardize assets and workflows
- Measure and track emissions (carbon accounting)

Studio Operations

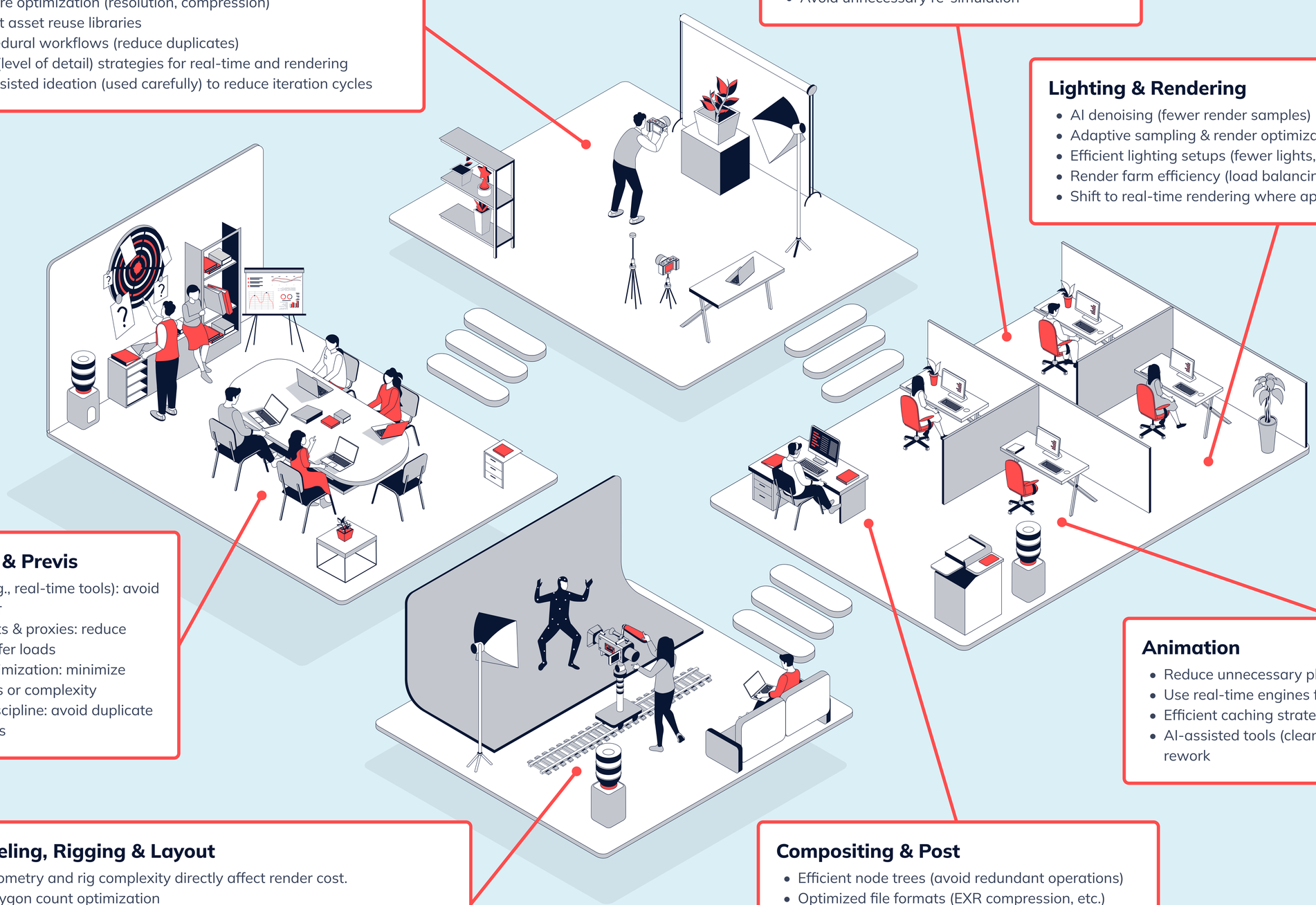
- Energy-efficient offices (lighting, HVAC)
- Remote/hybrid work policies to reduce travel
- Supportive vendors for recycling, compost & waste

Render Farm / Cloud Infrastructure

- Render Farm / Cloud Infrastructure
- Use renewable-powered regions
- Autoscaling to avoid idle machines
- Queue optimization (batch jobs efficiently)
- Carbon-aware compute (time-of-day scheduling)

IT Infrastructure

- Data lifecycle management (delete unused assets)
- Tiered storage (hot vs cold storage)
- Efficient data transfer (reduce duplication, compression)
- Server virtualization and workload optimization
- Monitoring energy usage (telemetry + reporting)



FX / Simulation (Houdini, etc.)

- Simulation caching & reuse
- Lower-resolution sims where possible
- Adaptive simulation techniques
- Avoid unnecessary re-simulation

Art Department (Design, Assets, Textures)

- Texture optimization (resolution, compression)
- Smart asset reuse libraries
- Procedural workflows (reduce duplicates)
- LOD (level of detail) strategies for real-time and rendering
- AI-assisted ideation (used carefully) to reduce iteration cycles

Lighting & Rendering

- AI denoising (fewer render samples)
- Adaptive sampling & render optimization
- Efficient lighting setups (fewer lights, optimized shaders)
- Render farm efficiency (load balancing, avoiding idle nodes)
- Shift to real-time rendering where appropriate

Story, Editorial & Previs

- Efficient previs (e.g., real-time tools): avoid costly rework later
- Smaller file formats & proxies: reduce storage and transfer loads
- Shot planning optimization: minimize unnecessary shots or complexity
- Version control discipline: avoid duplicate renders and assets

Animation

- Reduce unnecessary playblasts and previews
- Use real-time engines for iteration
- Efficient caching strategies
- AI-assisted tools (cleanup, interpolation) to reduce rework

Modeling, Rigging & Layout

- Geometry and rig complexity directly affect render cost.
- Polygon count optimization
- Efficient rig design (lighter rigs, fewer constraints)
- Scene optimization (instancing, referencing instead of duplication)
- Reuse of rigs and modular assets

Compositing & Post

- Efficient node trees (avoid redundant operations)
- Optimized file formats (EXR compression, etc.)
- Minimize re-renders through better upstream coordination
- Cloud vs local compositing decisions