SparkCoach

Green Bond Framework

Flor Diniello / *Impact MBA*
Sustainable Finances

SparkCoach

SparkCoach is a powerful study-buddy tool that uses limited machine learning to connect educational resources and psychology. It promotes creativity, critical thinking, and personalized learning, while reinforcing community networks with a strong focus on well-being, while keeping into planetary boundaries with environmental education and technology responsible consuption approach.

With an effective token economy system, SparkCoach empowers users to navigate the impacts of AI. Its mission is to transform students' academic journeys, enhancing their learning experiences and expanding to include educators.

By emphasizing a holistic coaching approach, SparkCoach strengthens local connectivity and evolves alongside students and educators, driving engagement and support for optimal educational outcomes.

https://flordiniello.com/sparkcoach/

Product Overview: AI-driven SaaS study tool promoting personalized learning, mental well-being, and environmental responsibility.
Location: Europe (Sweden).
Focus: Education, community, and planetary boundaries.

Environmental Factors

- **Tech Carbon Footprint:** Energy use from AI/ML operations, server hosting, and device lifecycle (e-waste).
- **Planetary Boundaries Integration:** Environmental impact of app usage and modules, to generate awareness on responsible tech consumption and climate action.
- **Green Operations:** Hosting on renewable-powered servers (Hydro66, Sweden based) and optimizing ML algorithms for energy efficiency.

Social Factors

- **Equitable Access:** Ensuring affordability for low-income students and marginalized groups.
- **Mental Health & Well-being:** Experts curation tools for stress management, community support, and reducing academic burnout .
- **AI Ethics:** Mitigating bias in personalized recommendations (gender/cultural inclusivity in content, etc).

Financial Factors

- **Revenue Model:** Subscription fees, partnerships with universities and educational centers, as well with companies with CSR, and token economy sustainability (e.g., rewards for eco-friendly behaviors).
- **Cost Management:** Improve and optimize development practices, improve data collection. Balancing R&D for energy-efficient AI with green infrastructure investments.
- **Funding:** Leveraging EU/Swedish grants for edtech innovation and green bonds for scaling.

SUSTAINABILITY STRATEGY
& Governance

ACTIONS

1. Decarbonizing Operations
- Renewable Energy: Transition data centers and offices to 100% renewable energy sources.
- Energy Efficiency: Implement energy-efficient coding practices and optimize the application for resource usage.
- Remote Work Policy: Encourage remote work to reduce commuting emissions and office energy consumption.

2. Resource Efficiency & Waste Reduction
- Sustainable Hardware: Prioritize the use of refurbished or sustainably manufactured hardware.
- E-waste Management: Implement a e-waste recycling program for all company-owned devices.
- Sustainable Procurement: Prioritize suppliers with strong environmental and social credentials.

3. Promoting Digital Inclusion
- Accessibility: Ensure the SaaS product is accessible to users with disabilities, adhering to accessibility guidelines (WCAG).
- Digital Literacy: Support digital literacy initiatives through partnerships and educational programs.

4. Ethical AI & Data Privacy
- Bias Mitigation: Implement measures to identify and mitigate bias in AI algorithms.
- Data Privacy: Adhere to strict data privacy regulations (GDPR) and ensure user data governance and protection.
- Transparency: Be transparent about the use of AI and data in the product.

5. Employee Engagement & Wellbeing
- Sustainability Training: Provide employees with training on sustainability and encourage them to adopt sustainable practices.
- Flexible Work Arrangements: Offer flexible work arrangements to improve employee well-being and reduce commuting emissions.

GOALS

- *Achieve 100% renewable energy for data centers, servers and offices by 2026.*
- *Reduce energy consumption and app uptime per user by 50% by 2027.*
- *Cut employee commuting emissions by 50%*

- *Reduce hardware waste by 50% by 2026.*
- *Achieve a 90% recycling rate for e-waste.*

- *Achieve full alignment with accessibility guidelines (WCAG 2.1).*
- *Partner with 4 organizations to promote digital literacy by 2026.*

- *Conduct regular audits of AI algorithms for bias.*
- *Achieve and maintain compliance with relevant data privacy regulations.*

- *Achieve 80% employee participation in sustainability training programs.*
- *Achieve a 90% of employee satisfaction rate with flexible work arrangements.*

Green Bonds

PROJECT	EU TAXONOMY	NACE	SDGS
1. Decarbonizing Operations			
100% Renewable Energy	3.9 (Energy-efficient data centers)	J63.117	7, 13
Energy-Efficient Coding	3.9 (Software for GHG reduction)	J62.019	7, 13
Remote Work Policy	3.9 (Indirect emissions reduction)	M74.90	8, 13
2. B. Resource Efficiency & Waste Reduction			
Sustainable Hardware	5.1 (Circular economy practices)	26.20	12
E-Waste Recycling	5.1 (Recycling of electronics)	38.32	12
Sustainable Procurement	6.3 (Pollution prevention)	46.73	12, 17
3. Promoting Digital Inclusion			
Accessibility Compliance	6.5 (Education for sustainable development)	P85.59	4, 10
Digital Literacy Programs	6.5 (Education initiatives)	P85.59	4, 10
4. Ethical AI & Data Privacy			
Bias Mitigation	6.5 (AI for sustainable education)	J62.014	10
GDPR Compliance	6.6 (Data governance)	J63.11	16
5. Employee Wellbeing & Engagement			
Sustainability Training	6.5 (Awareness-raising)	M72.19	4, 8
Flexible Work Arrangements	3.9 (Indirect emissions reduction)	M74.90	8, 13

Impact Reporting

Annual Report: Aligned with EU Taxonomy, GRI Standards, and SASB.
SDG Dashboard: Public tracker for user engagement in sustainability modules.
Third-Party Assurance for verification and validation.

Certification & Labels

EU Green Bond Standard: Alignment with Taxonomy.
CBI Certification: Climate Bonds Initiative for digital infrastructure.
Swedish Climate Seal: "Bra Miljöval" for sustainable operations.

Bra Miljöval

Climate Risk Analysis
(EU/Sweden)

Physical Risks

Temperature Rise: Increased cooling demands for servers; potential disruptions during heatwaves.

Energy Supply: Hydropower reliability in Sweden (60% of energy) may fluctuate with rainfall changes.

Transition Risks

Regulatory: EU AI Act compliance costs; stricter data privacy laws (GDPR).

Market: Competition from edtech tools with advanced sustainability credentials.

Reputational: Backlash if AI recommendations conflict with Sweden's equity values (e.g., gender bias).

Mitigation Actions

Use climate projections to future-proof server locations.

Align token economy incentives with EU Green Deal priorities (e.g., circular economy).

Changing a behaviour is not easy.

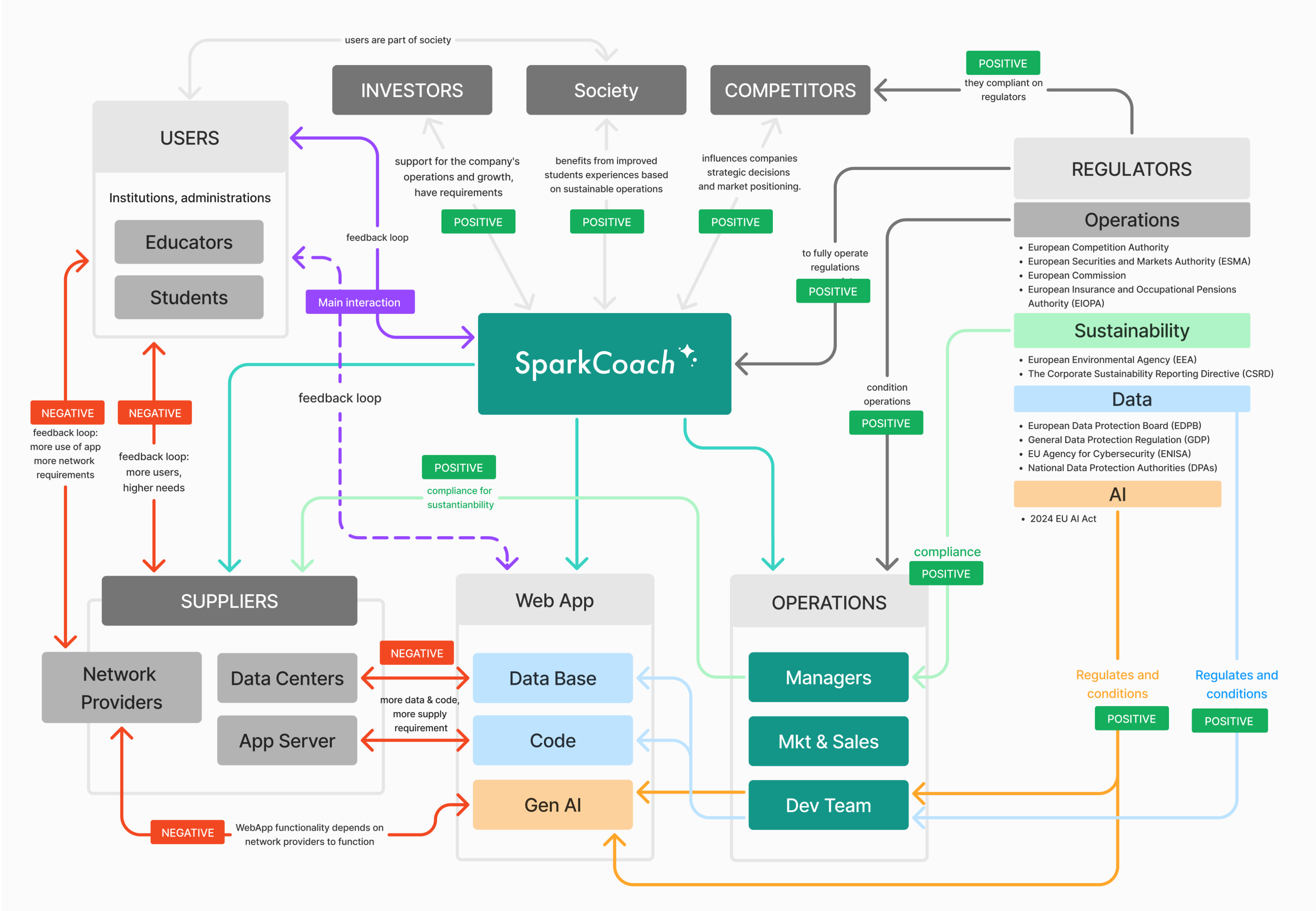But creating tools that helps us and motivate to do so, is the first step to change.

SparkCoach

Appendix

STAKEHOLDER MAP

This map connects all stakeholders and
identifies the different feedback loops
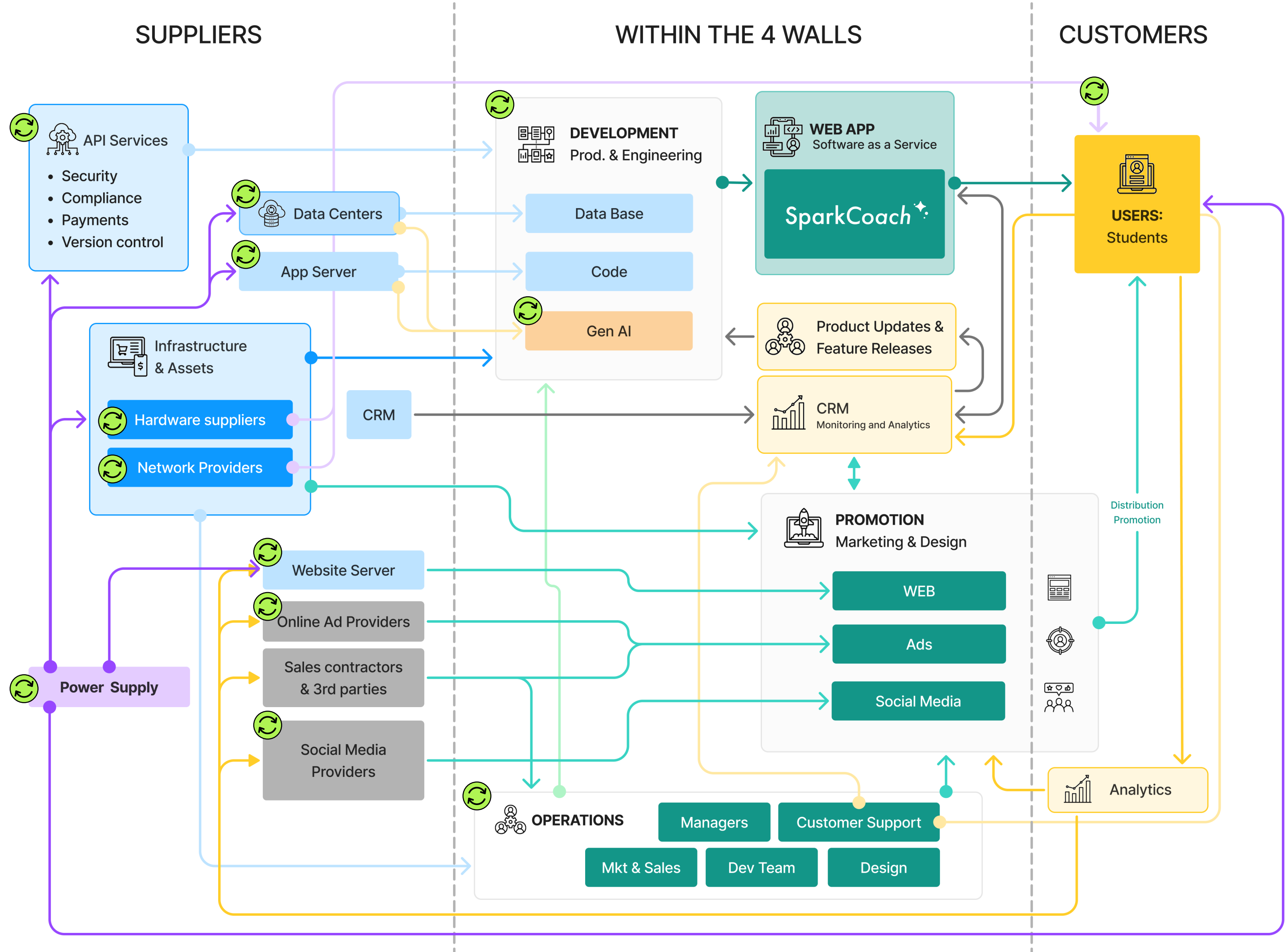withing all relactionships.

POSITIVE   NEGATIVE

SUPPLY CHAIN

Sustainability challenges identified

When analyzing the stakeholder map and the supply chain (Appendix pages 8 and 9) , the most relevant feedback loops and sustainability issues appear when scaling up the company. Improving the effectivity is one of the main drivers to achieve the company´s value proposition.

Top sustainability challenges:

Energy consumption:
This applies to all of the highlighted elements. From the usage of power supply needed to run Data Servers, AI usage and prompting App servers, to as well the development of hardware from the 3 pillars of the supply chain, and the operations of all of them.

Infraestructure and resources: hardware is necessary on all the identied items. This not only needs from the energy consumption as mentioned before to be developed, but also material sourcing. None of the 3 pillars can develop without the usage of rare materials.
This leads to the final element, resulting of
e-waste.

SUPPLIERS · WITHIN THE 4 WALLS · CUSTOMERS

API Services
- Security
- Compliance
- Payments
- Version control

Data Centers

App Server

Infrastructure & Assets

Hardware suppliers

Network Providers

CRM

Power Supply

Website Server

Online Ad Providers

Sales contractors & 3rd parties

Social Media Providers

DEVELOPMENT
Prod. & Engineering

Data Base

Code

Gen AI

WEB APP
Software as a Service

SparkCoach

Product Updates & Feature Releases

CRM
Monitoring and Analytics

PROMOTION
Marketing & Design

WEB

Ads

Social Media

OPERATIONS

Managers

Customer Support

Mkt & Sales

Dev Team

Design

USERS:
Students

Distribution
Promotion

Analytics

SOURCES OF INFORMATION

EU Taxonomy Navigator. (n.d.). European Commission - European Commission. Retrieved February 2, 2025, from https://ec.europa.eu/sustainable-finance-taxonomy/

NACE - Eurostat. (n.d.). Eurostat. https://ec.europa.eu/eurostat/web/nace

THE 17 GOALS | Sustainable Development. (n.d.). https://sdgs.un.org/goals

Vasilis Vlastaras, University of Manchester. (n.d.). European Climate Risk Typology | Main page. https://european-crt.org/

https://flordiniello.com/sparkcoach/

> Sustainability Report

> Sustainable operations and supply chain management

> User interviews

Systems Thinking for Sustainable Development
Tomorrow University · Impact MBA

SparkCoach
REPORT.
Unlocking innovative solutions for better AI-empowered Apps

- Flor Diniello