



SCIENCE IN BRAZIL PROTECTS THE ENVIRONMENT

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ESALQ



Strengthening policies

POLICY FORUM

AGRICULTURE AND ENVIRONMENT

The rotten apples of Brazil's agribusiness

Brazil's inability to tackle illegal deforestation puts the future of its agribusiness at risk

By Raoni Rajão,¹ Britaldo Soares-Filho,¹ Felipe Nunes,¹ Jan Börner,² Lilian Machado,¹ Débora Assis,¹ Amanda Oliveira,¹ Luis Pinto,³ Vivian Ribeiro,⁴ Lisa Rausch,⁵ Holly Gibbs,⁵ Danilo Figueira¹

American trade bloc. Among the concerns is that increasing greenhouse gas (GHG) emissions from deforestation and forest fires in Brazil could cancel out EU climate change mitigation efforts. The Brazilian government and agribusiness contend that national

EU may be contaminated with illegal deforestation. Raising awareness is important to press Brazil to conserve its environmental assets and to promote international political will for cutting telecoupled GHG emissions. This could be achieved, for example,

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SCIENCE ADVANCES | RESEARCH ARTICLE

APPLIED ECOLOGY

Fake legal logging in the Brazilian Amazon

Pedro H. S. Brancalion^{1*}, Danilo R. A. de Almeida¹, Edson Vidal¹, Paulo G. Molin², Vanessa E. Sontag¹, Saulo E. X. F. Souza¹, Mark D. Schulze³

Declining deforestation rates in the Brazilian Amazon are touted as a conservation success, but illegal logging is a problem of similar scale. Recent regulatory efforts have improved detection of some forms of illegal logging but are vulnerable to more subtle methods that mask the origin of illegal timber. We analyzed discrepancies between estimated timber volumes of the national forest inventory of Brazil and volumes of logging permits as an indicator of potential fraud in the timber industry in the eastern Amazon. We found a strong overestimation bias of high-value timber species volumes in logging permits. Field assessments confirmed fraud for the most valuable species and complementary strategies to generate a “surplus” of licensed timber that can be used to legalize the timber coming from illegal logging. We advocate for changes to the logging control system to prevent overexploitation of Amazonian timber species and the widespread forest degradation associated with illegal logging.

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LAND USE

Cracking Brazil's Forest Code

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Brazil's controversial new Forest Code grants amnesty to illegal deforestation, but creates new mechanisms for forest conservation.

Roughly 53% of Brazil's native vegetation occurs on private properties. Native forests and savannas on these lands store 105 ± 21 GtCO₂e (billion tons of CO₂ equivalents) and play a vital role in maintaining a broad range of ecosystem services (1). Sound management of these private landscapes is critical if global efforts to mitigate climate change are to succeed. Recent approval of controversial revisions to Brazil's Forest Code (FC)—the central piece of legislation regulating land use and management on private properties—may therefore have global consequences. Here, we quantify changes resulting from the FC revisions in terms of environmental obligations and rights granted to land-owners. We then discuss conservation opportunities arising from new policy mechanisms in the FC and challenges for its implementation.

Created in 1965, the FC was transformed during the 1990s into a de facto environmental law via a series of presidential decrees. As of 2001, the FC required landowners to conserve native vegetation on their rural properties, setting aside a Legal Reserve (LR) that



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Biodiversity Conservation Research, Training, and Policy in São Paulo

The 2019-2020 period is a critical moment for biodiversity conservation in São Paulo, Brazil.

July 16, 2020 | Raoni Rajão,¹ Britaldo Soares-Filho,¹ Paulo G. Molin,² Edson Vidal,¹ Vanessa E. Sontag,¹ Saulo E. X. F. Souza,¹ Mark D. Schulze,³ Danilo Figueira,¹ Felipe Nunes,¹ Lilian Machado,¹ Débora Assis,¹ Amanda Oliveira,¹ Luis Pinto,³ Vivian Ribeiro,⁴ Lisa Rausch,⁵ Holly Gibbs,⁵ Danilo Figueira¹

São Paulo is a biodiversity hotspot, with a high density of species and endemism. The state's biodiversity is threatened by deforestation and land-use change. This article discusses the importance of biodiversity conservation in São Paulo and the role of research, training, and policy in achieving this goal. It highlights the need for a coordinated effort between government, academia, and civil society to protect and restore biodiversity in the state.



Leveraging ecosystem restoration

✓ The demand for tropical restoration has never been so high

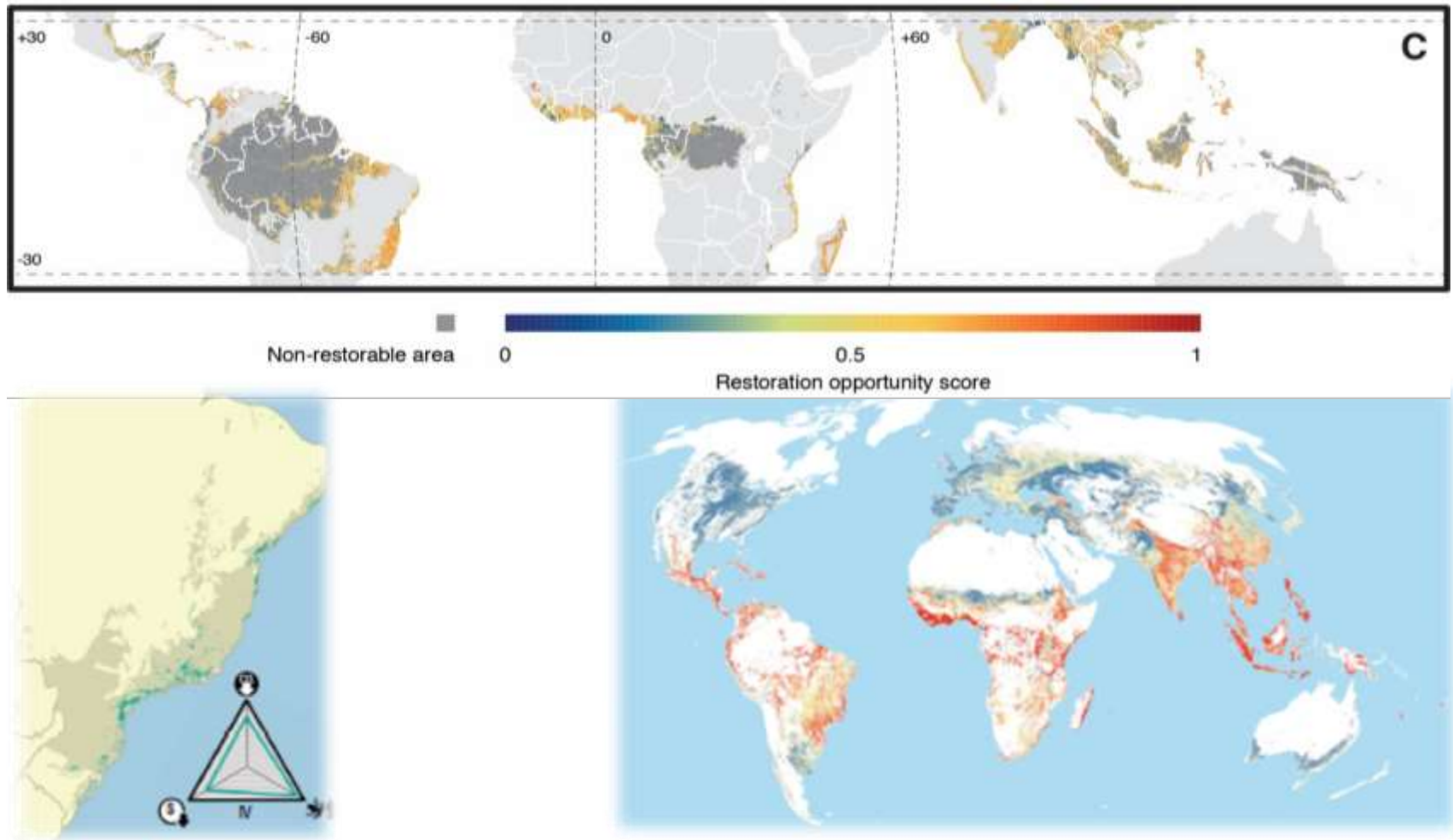


1t.org  TRILLION TREES Etc...

✓ But restoration is still based on a plot- or tree-based mindset



Finding restoration opportunities

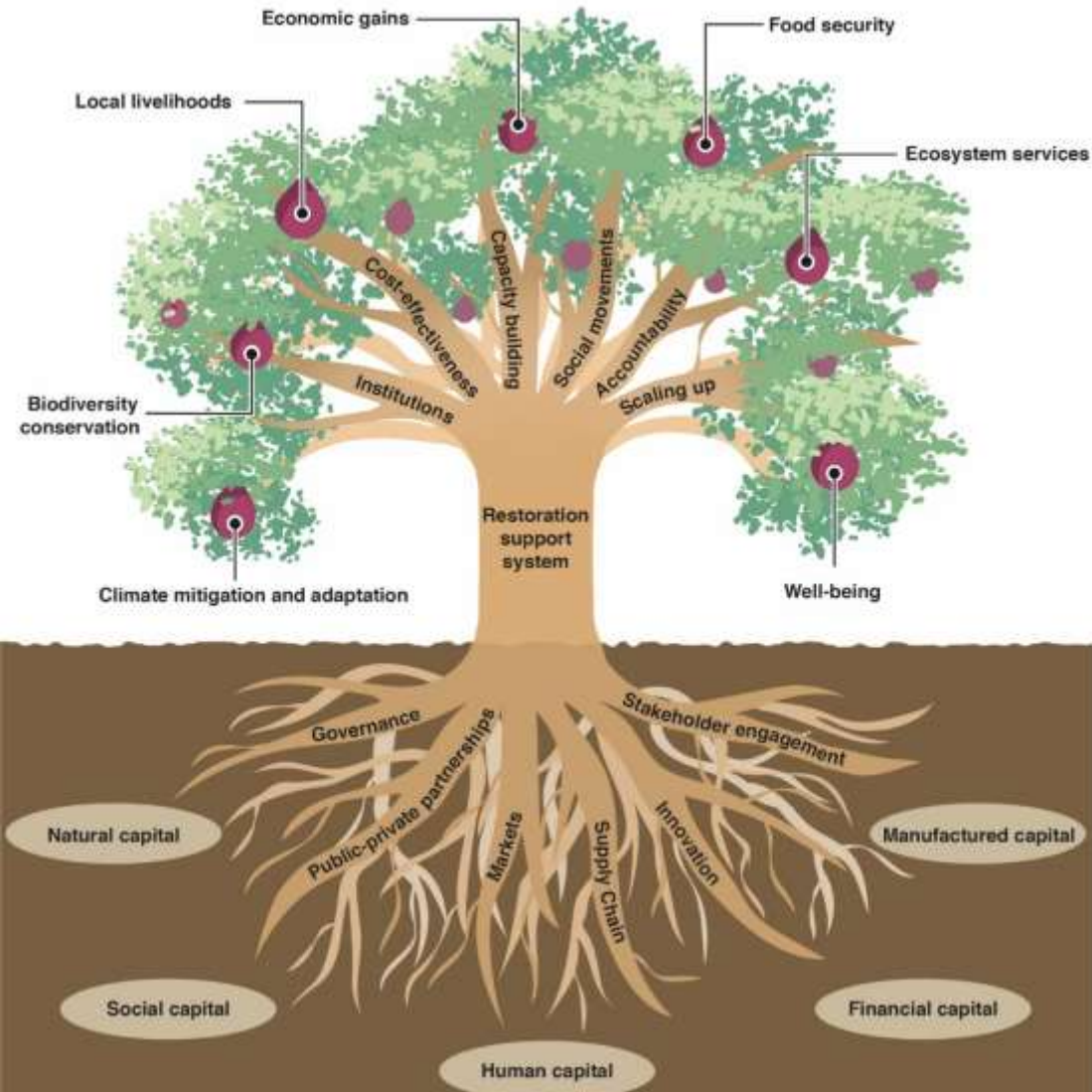


Strassburg BBN, Brancalion PHS, *et al.* (2019) **Nature Ecology and Evolution** 3:62-70

Brancalion PHS *et al.* (2019). Global restoration opportunities in tropical rainforest landscapes. **Science Advances**

Strassburg BBN, Brancalion PHS, *et al.* (2020). Global priority areas for ecosystem restoration. **Nature**

Promoting restoration best practices



INSIGHTS

PERSPECTIVES

ECOLOGY

Tree planting is not a simple solution

Tree planting must be carefully planned and implemented to achieve desired outcomes

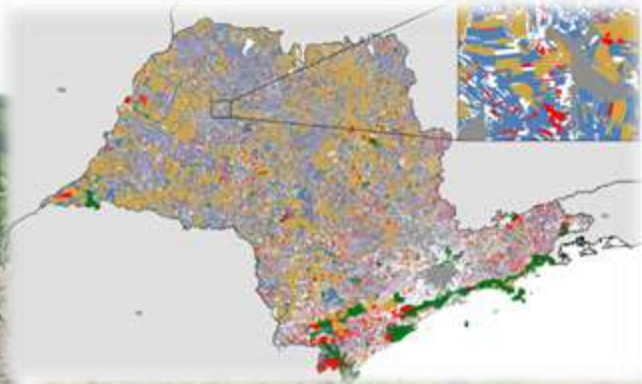
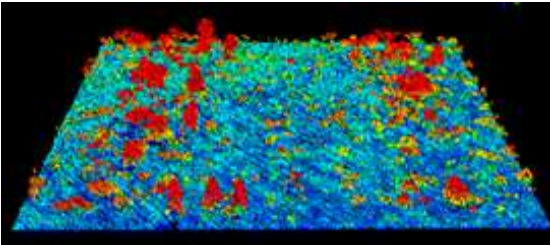
By Karen D. Holl¹ and Pedro H. S. Brancalion²

sciencemag.org **SCIENCE**

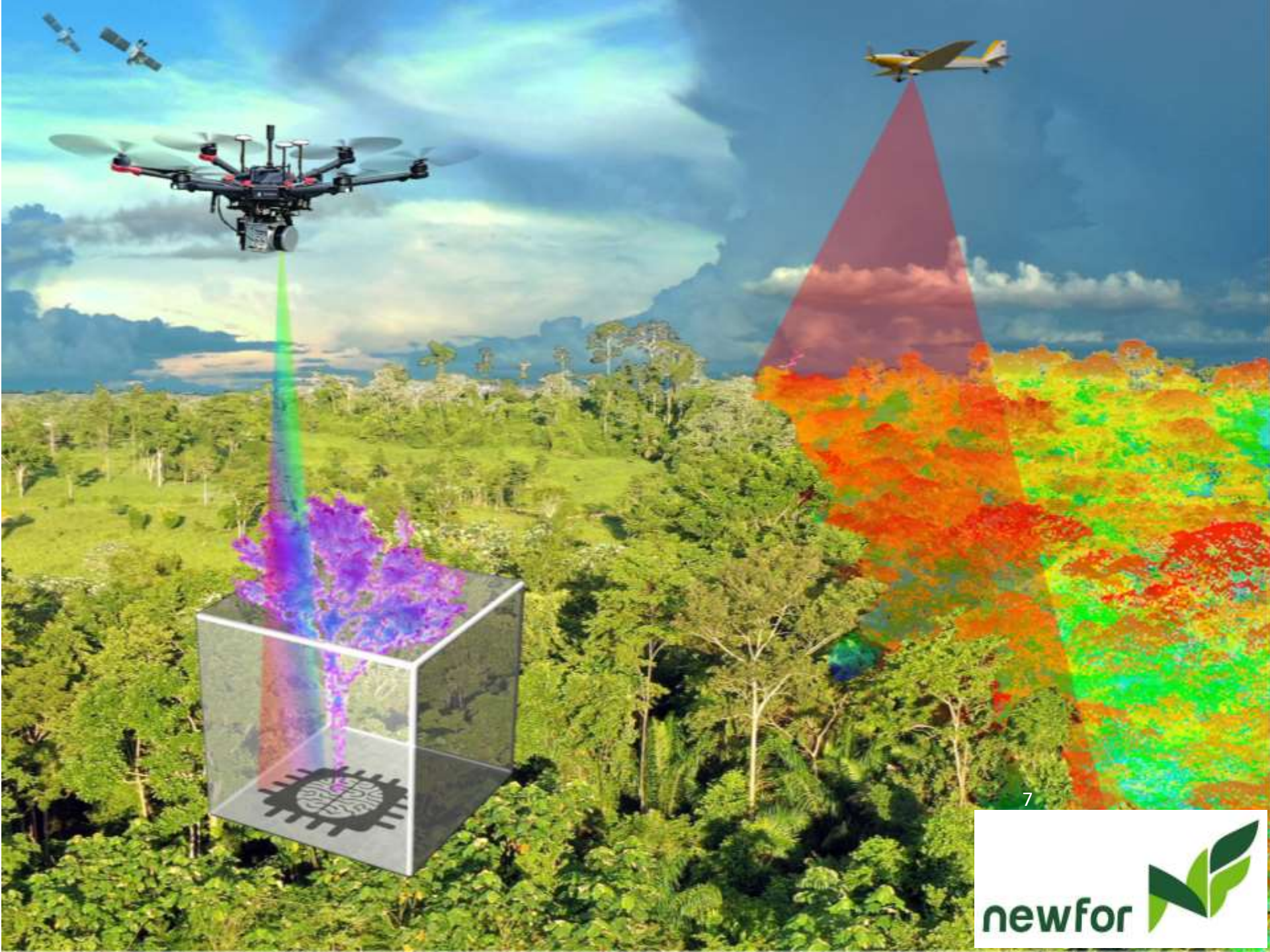
Alternative restoration approaches



- ✓ Reduce costs, provide revenues, make a good use of people's knowledge and experience, transform traditional land uses, use technology to revolutionize your practices



**explore
controversies,
navigate trade offs,
innovate**



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