REWE International IT
Engineering standards in a decentralized organisation

Balancing community drive and governance

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Agenda

01 Short intro REWE and RIAG IT

02 The standards paradox

03 Case study

04 Key takeaways and lessons learned

→ 01

REWE Group and RIAG IT

Facts and figures

Who am I?

Past	Now
▪ In IT for over 20 years ▪ Worked across multitude of domains ranging from air traffic control to online gambling and retail ▪ Managed engineering departments with 50+ engineers ▪ Managed development of multiple internal platforms across domains	▪ Leading Engineering Center of Excellence ▪ Engineering Center of Excellence combines Frontend, Backend and Quality Engineering ▪ Team of hands-on experts to raise the engineering maturity across the company

REWE Group –
At home in trade and tourism

As a trade and tourism group, we are part of your world every day: whether it is for food shopping, DIY and garden products, snacking on-the-go or the next holiday.

REWE Group comprises REWE, BILLA, the discounter PENNY, toom Baumarkt DIY stores and BIPA drugstores, as well as Lekkerland Group, the specialist for snacking on-the-go.

DER Touristik Group, as the tourism division of REWE Group, is one of Europe's leading travel and tourism groups. It relies on brand diversity, meets customer wishes individually and has a strong diversified sales network.

REWE Group in figures

Successful in Germany and Europe

96

bn euros
Total external revenue
2024

380,000

Employees
2024

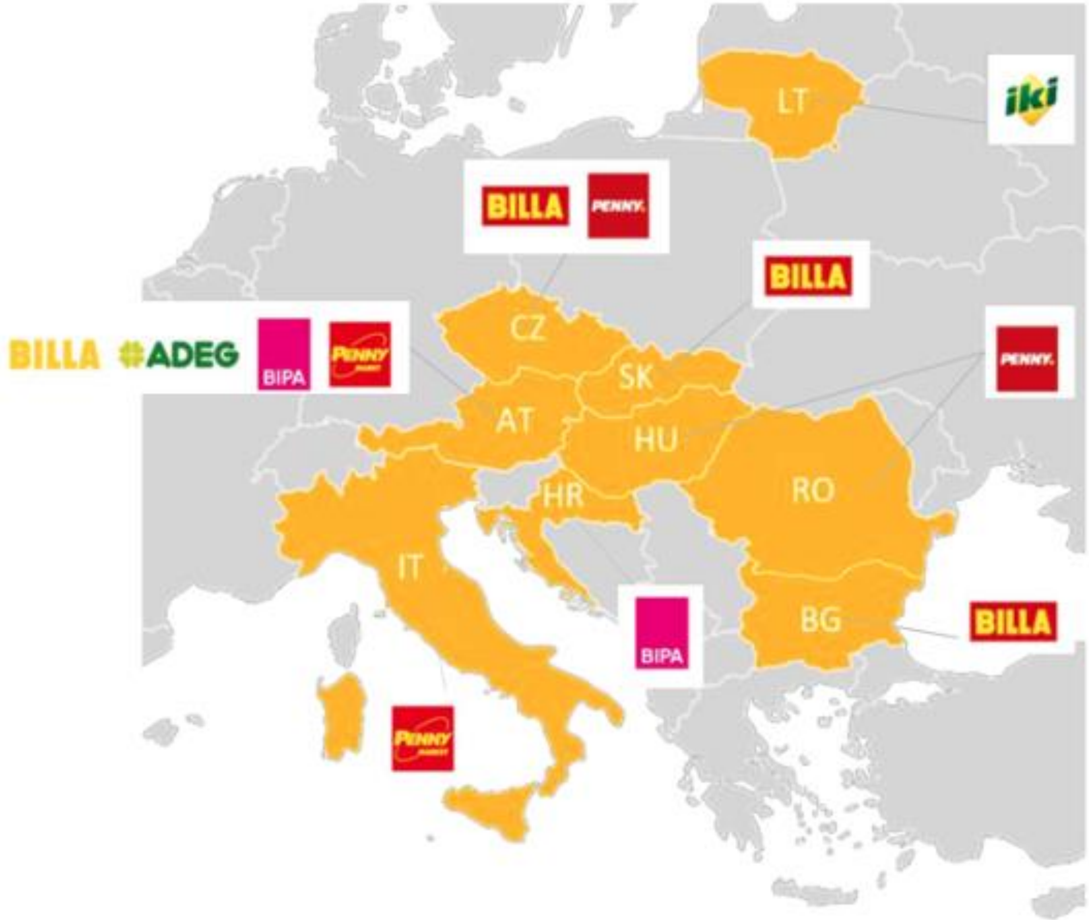
15,640

Stores and travel agencies

REWE Group at a glance

HANDEL DEUTSCHLAND	REWE, PENNY., nahkauf, akzenta lecker, günstig, nett GLOCKEN BÄCKEREI, Wilhelm Brandenburg, REWE DIGITAL, ZooRoyal, KÖLNER WEINKELLER, WEINFREUNDE
HANDEL INTERNATIONAL	BILLA, BILLA, PENNY., ADEG, BIPA, iki
CONVENIENCE	Lekkerland the convenience company, REWE TO GO, Conway the convenience company, REWE express
BAUMARKT	toom Respekt, wer's selber macht., B1 DISCOUNT BAUMARKT
TOURISTIK	DER Touristik DERTOUR, DERPART, ITS, MEIERS WELTREISEN, TRAVELIX, SENTIDO, ALDIANA, CALIMERA, COOEE [ku:'i:] KUONI, helvetic tours, ITS coop TRAVEL, BILLA REISEN, koningaap écht op reis!, PRIJSVRIJ vakanties, apollo, EXIMtours, FISCHER GROUP
SONSTIGE	EHA Energie geht neue Wege, FÜRSIE

RIAG IT in a nutshell



→ Employees

700+

From over 34 nations working in 77 product teams

→ Applications

371+

Business applications across the whole value chain

→ IT Transformation

3 digit+

millions € being spent into one of the largest European IT transformation projects

→ Projects

50+

projects running in parallel

→ 02 The standards paradox

The fundamental challenge

Team autonomy advocates say:

- Teams know their domain best
- One size doesn't fit all
- Standards slow down innovation
- Central governance kills creativity
- Conway's Law: Organizations mirror their communication

Standardization advocates say:

- Consistency reduces cognitive load
- Shared standards enable collaboration
- Quality and security need governance
- Platform effects require alignment
- Technical debt accumulates without standards

"The question isn't whether to standardize, but how to standardize while preserving the benefits of autonomy"

The standards paradox

Standards should INCREASE autonomy, not decrease it

By handling the "how" of common problems, teams can focus on the "what" of their unique value

Without standards

- Every team solves common problems
- Reinventing security, monitoring, deployment
- High cognitive overhead
- Difficult knowledge sharing

With good standards

- Common problems are solved once
- Teams focus on business logic
- Faster onboarding
- Easy cross-team collaboration

With bad standards

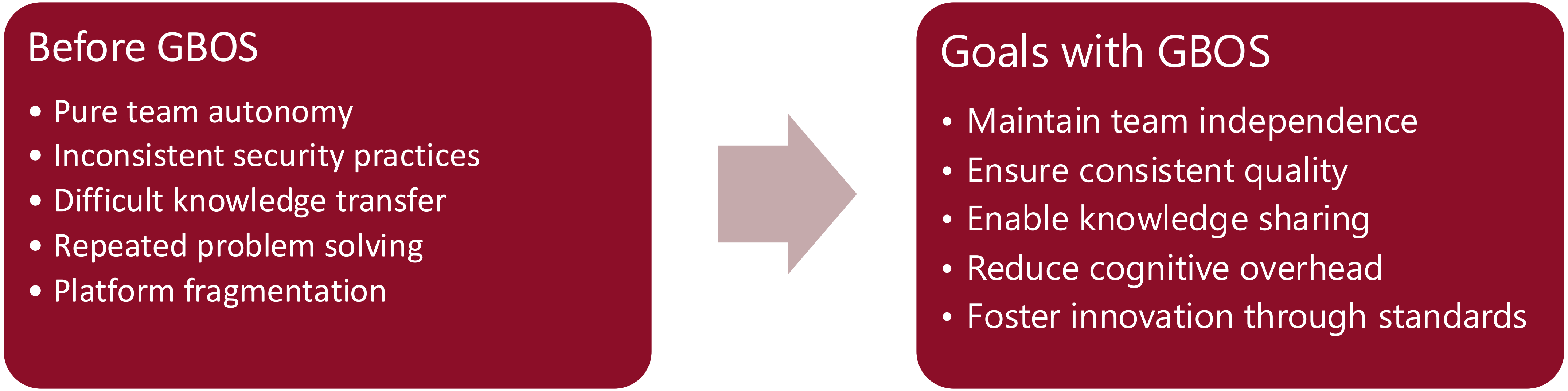
- Rigid, one-size-fits-all
- No escape hatches
- Created in isolation
- Enforced without context

→ 03 Case study – Group book of standards

Case study – Group Book of Standards

The Challenge

- Large retail organization with multiple brands across different countries, each with autonomous development teams using diverse technology stacks.



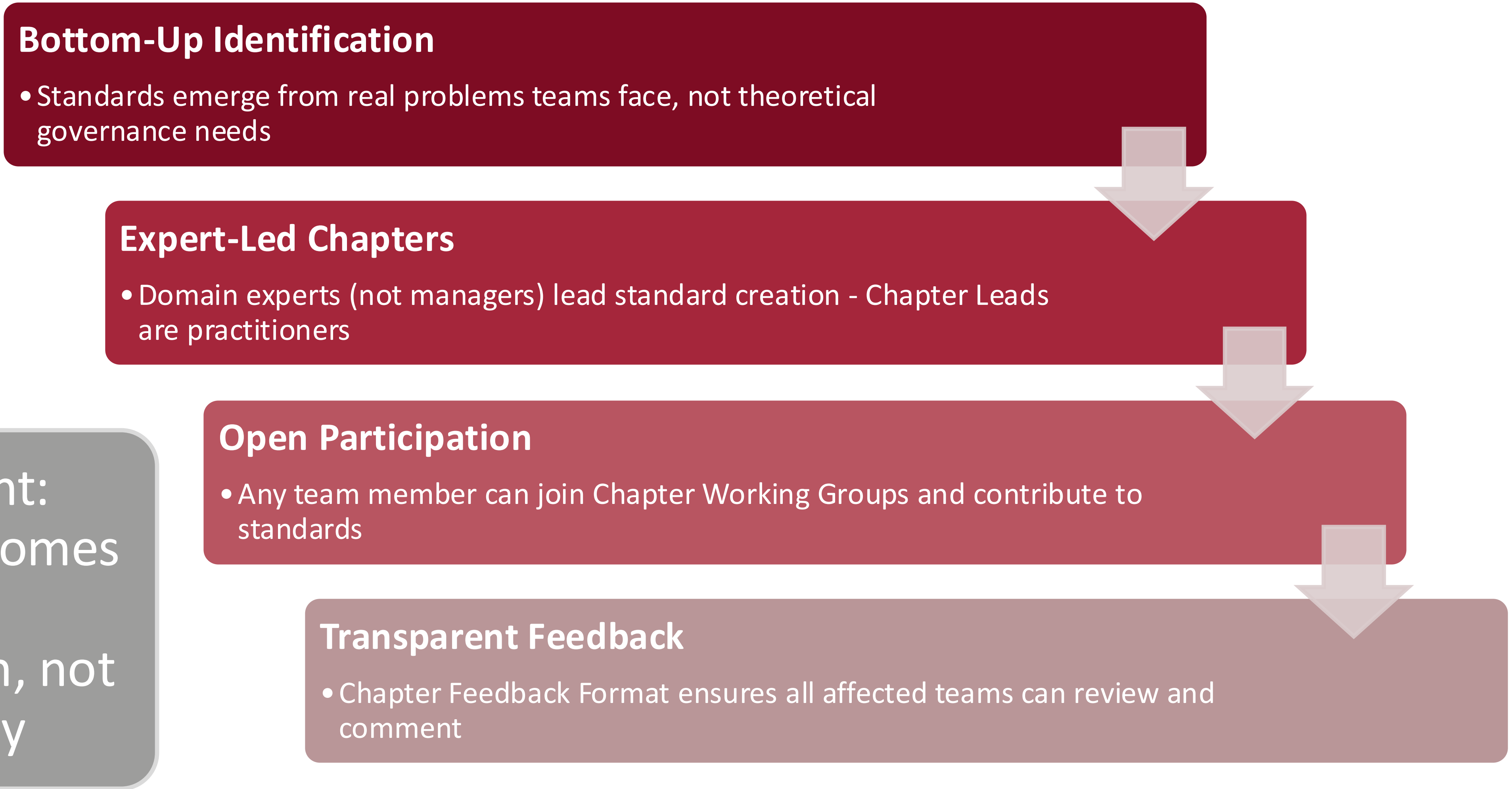
Before GBOS

- Pure team autonomy
- Inconsistent security practices
- Difficult knowledge transfer
- Repeated problem solving
- Platform fragmentation

Goals with GBOS

- Maintain team independence
- Ensure consistent quality
- Enable knowledge sharing
- Reduce cognitive overhead
- Foster innovation through standards

Community driven policy design



Bottom-Up Identification

- Standards emerge from real problems teams face, not theoretical governance needs

Expert-Led Chapters

- Domain experts (not managers) lead standard creation - Chapter Leads are practitioners

Open Participation

- Any team member can join Chapter Working Groups and contribute to standards

Transparent Feedback

- Chapter Feedback Format ensures all affected teams can review and comment

Key Insight: Legitimacy comes from participation, not authority

Governance structure: distributed responsibility

GBOS Owner

- **Role:** Publisher & Spokesperson
- Quality assurance
- Publication decisions
- Strategic alignment
- Escalation handling

Chapter Leads

- **Role:** Domain Experts
- Content creation
- Community organization
- Cross-chapter coordination
- Final decision making

Chapter Members

- **Role:** Active Contributors
- Standards development
- Peer communication
- Rule ownership
- Continuous improvement

Nuanced requirement levels

- Not all standards are created equal
- Different problems need different levels of enforcement

COULD (Recommendation)

- Suggested patterns and best practices
- Teams decide freely
- No documentation required
- Example: Preferred logging libraries

SHOULD (Guideline)

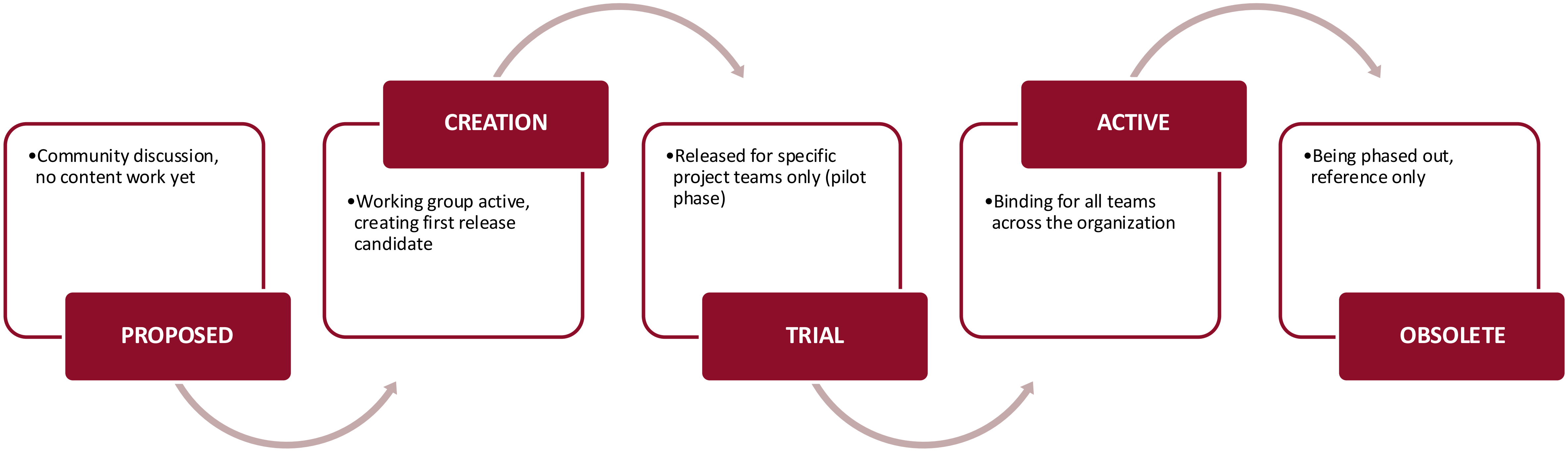
- Central requirement, decentral decision
- Can be violated with good reason
- Must document decision (ADR)
- Example: API design patterns

MUST (Requirement)

- Central requirement, central decision
- Exception needs approval
- Transparent exception tracking
- Example: Security standards

"Accept or Explain" approach - similar to regulatory compliance frameworks

Chapter lifecycle management



PROPOSED

- Community discussion, no content work yet

CREATION

- Working group active, creating first release candidate

TRIAL

- Released for specific project teams only (pilot phase)

ACTIVE

- Binding for all teams across the organization

OBSOLETE

- Being phased out, reference only

Fixed release dates twice a year

All cheapters are **release synchronously**

Upcoming standards can be released in an „**incubator**“, they will be non-mandatory until the release of the next version.

This is to give the teams an **outlook** about the planned updates and to gather **feedback**.

Automated compliance checking

Standards without automation are just suggestions

REWE Solution

- **Technology Insights Board**
    - Scans all repositories
    - Verifies against rule set using set of coded rules and AI functionality (for more fuzzy rules)
    - Actionable dashboard per team

Alternative Tools

- **SonarQube:** Code quality and security
- **Open Policy Agent:** Policy as code
- **Backstage:** Developer portal with standards
- **GitHub Security Advisories:** Dependency scanning
- **Checkov:** Infrastructure as code scanning
- **Custom scripts:** Repository analysis

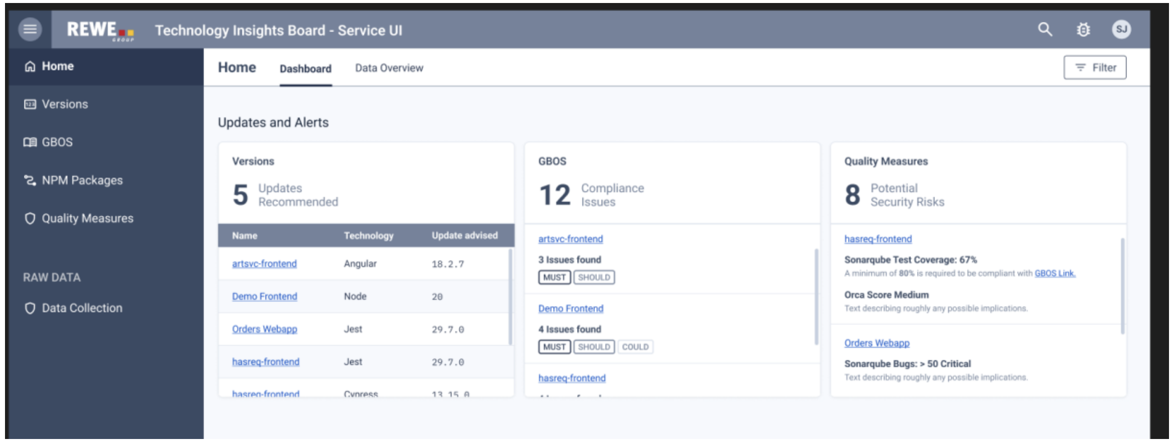
Key: Provide actionable feedback, not just compliance scores

Continuous feedback mechanisms

Chapter feedback format

- Open meetings for all IT employees
- Async channels (Teams/Slack)
- Chapter consultation hours
- Release candidate reviews
- Transparent documentation

Compliance Feedback



Updates and Alerts

Versions

5 Updates Recommended

Name	Technology	Update advised
artsvc-frontend	Angular	18.2.7
Demo Frontend	Node	20
Orders Webapp	Jest	29.7.0
hasreq-frontend	Jest	29.7.0
hasreq-frontend	Cypress	13.15.0

GBOS

12 Compliance Issues

artsvc-frontend

3 Issues found

MUST SHOULD

Demo Frontend

4 Issues found

MUST SHOULD COULD

hasreq-frontend

Quality Measures

8 Potential Security Risks

hasreq-frontend

Sonarqube Test Coverage: 67%

A minimum of **80%** is required to be compliant with GBOS Link.

Orca Score Medium

Text describing roughly any possible implications.

Orders Webapp

Sonarqube Bugs: > 50 Critical

Text describing roughly any possible implications.

Feedback loop principles

- **Fast:** Near real-time compliance feedback
- **Actionable:** Specific steps to resolve issues
- **Contextual:** Why this standard matters
- **Bidirectional:** Teams can question/improve standards

Alternative implementation approaches

Netflix Model

- High trust, high freedom
- "Paved roads" - easy defaults
- Strong engineering culture
- Failure tolerance
- **Best for:** Mature engineering orgs

Spotify Model

- Guilds for knowledge sharing
- Minimal viable bureaucracy
- Chapter & Squad structure
- Culture over process
- **Best for:** Growing organizations

Platform Team Model

- Internal products for standards
- Product mindset for tooling
- Self-service capabilities
- Developer experience focus
- **Best for:** Large enterprises

Common Success Factors

- Make the right thing the easy thing
- Practitioner-led standard creation
- Clear escalation and exception processes
- Continuous evolution based on feedback

Addressing Common Resistance

Technical Resistance

"Diverse Technology Stacks"

- **Solution:** Focus on outcomes, not implementation
- Define what, not how
- Language-agnostic principles
- Standard interfaces, flexible implementations

"Standards Slow Us Down"

- **Solution:** Measure total cost, not initial cost
- Factor in maintenance, security, onboarding
- Show time-to-market improvements
- Provide tooling to reduce friction

Cultural Resistance

"Central Standardization"

- **Solution:** Community-driven approach
- Standards come from teams, not management
- Clear contribution mechanisms
- Transparent decision making

"Missing Transparency"

- **Solution:** Radical transparency
- Public discussions and decisions
- Clear rationale for each standard
- Exception tracking and learning

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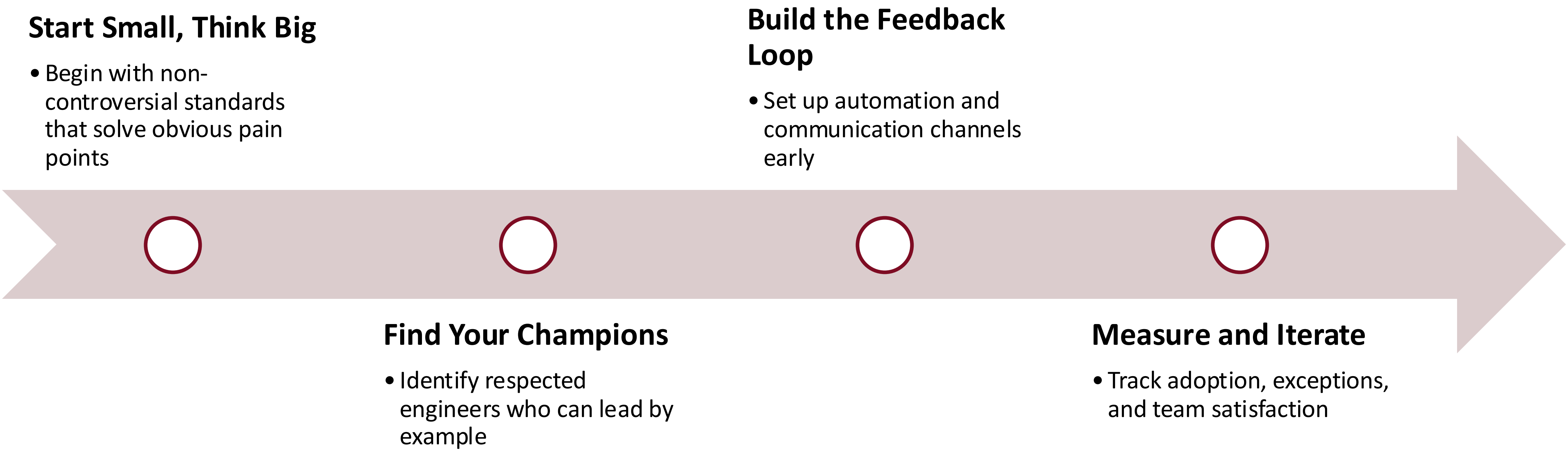
Implementation strategy



Start Small, Think Big

- Begin with non-controversial standards that solve obvious pain points

Find Your Champions

- Identify respected engineers who can lead by example

Build the Feedback Loop

- Set up automation and communication channels early

Measure and Iterate

- Track adoption, exceptions, and team satisfaction

Remember: You're building a system, not just rules

Focus on the governance system that can evolve standards over time

→ 04 Key takeaways and lessons learned

Key lessons learned

What Works

Automation is Essential: Manual compliance checking doesn't scale

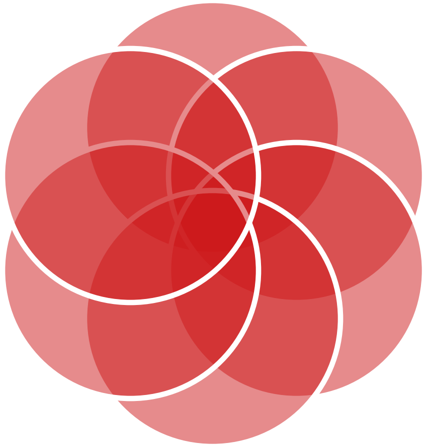
Management Buy-in is Critical: Leadership must understand and support the cultural shift

Clear Exception Process: Teams need escape hatches for unique situations

Start with Pain Points: Address real problems teams are already facing

Practitioner Leadership: Standards led by respected engineers, not architects in ivory towers

What's Challenging



Technical Debt: Existing systems may not comply with new standards

Time Investment: Building good standards takes significant time and effort

Cross-team Coordination: Getting input from busy teams is difficult

Cultural Change: Moving from pure autonomy to governed autonomy is hard

Balancing Act: Too rigid kills innovation, too loose provides no benefit

"The goal isn't perfect compliance, it's continuous improvement towards better practices"

Measuring success

Adoption metrics

- Standards compliance rates
- Exception request trends
- Time to compliance for new projects
- Chapter participation levels

Quality metrics

- Security incident reduction
- Production error rates
- Time to resolve common issues
- Code review efficiency

Velocity metrics

- Developer onboarding time
- Flow of value (Cycle time)
- New project setup time

Success Indicators

- Teams asking for new standards (not just complaining about existing ones)
- Voluntary adoption beyond required compliance
- Cross-team knowledge sharing increases
- Faster resolution of common problems
- Higher developer satisfaction with tooling and processes

Key takeaways

Autonomy ≠ Anarchy

- Good standards increase effective autonomy by reducing cognitive load on common problems

Community Over Command

- Standards created by practitioners have higher legitimacy and adoption than top-down mandates

Automation is Essential

- Without tooling support, standards become bureaucratic overhead instead of enabling constraints

Nuanced Enforcement

- Different problems need different levels of governance - COULD/SHOULD/MUST provides flexibility

The Ultimate Goal

- Enable teams to focus on delivering unique business value by solving common problems once, well, and transparently

Questions to explore together

Your experience

- What standards challenges do you face in your organization?
- How do you currently balance autonomy vs. consistency?
- What resistance have you encountered when introducing standards?
- Which compliance checking tools have worked (or not worked) for you?

Implementation questions

- How would you adapt the GBOS model to your context?
- What would be your first pilot standard and why?
- How do you get management buy-in for this approach?
- What metrics would you use to measure success?

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