



TRANSITIONS LAB • STRATEGIC FRAMEWORK

The BRW Framework

Bypass, Repurpose, Weaken: a mechanism-based typology of how a niche technology engages an entrenched regime, and what that predicts about where it will stall.

START HERE

How to use this resource

BRW is a diagnostic tool for reading how a new technology engages the entrenched system it enters. It classifies each strategy by what it does to a specific barrier, bypass, repurpose, or weaken, rather than by how ambitious it is overall. This resource explains the framework and shows it applied to a real case.

What this is

A working reference, not a marketing brochure. Read it in order, or jump to the section you need using the contents opposite.

Who it is for

Innovators planning market entry, funders assessing whether a transition will hold, and researchers studying socio-technical change. No prior transitions-theory knowledge is assumed.

How to get value from it

- 01** Read the three mechanisms first
Sections 2 to 4 define bypass, repurpose, and weaken. These are the core vocabulary; everything else builds on them.
- 02** Learn to characterise a barrier
Section 5 shows how to score any lock-in barrier on four dimensions, which is what tells you which mechanism fits.
- 03** Follow the worked Roam case
Section 7 applies the whole framework to a real electric-mobility venture in Kenya, with field data. This is where it becomes concrete.
- 04** Use it on your own case
Section 8 gives the six-step protocol you can run on your own transition. Start there when you are ready to apply it.

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STRATEGIC FRAMEWORK

How niche technologies engage a regime

Every niche technology arrives into a world already run by an incumbent regime. How it engages that regime, barrier by barrier, largely determines whether it succeeds and for whom.

A regime, in the transitions literature, is an aligned configuration of technologies, infrastructures, institutions, habits, and expectations that governs how a sector works (Geels, 2004). Regimes are locked in: they persist through self-reinforcing mechanisms, increasing returns, sunk costs, network effects, accumulated habit, that make change hard even when a superior alternative appears (Arthur, 1989; Unruh, 2000). A better product does not overcome this on merit alone.

Existing typologies classify a niche strategy by its ambition relative to the regime as a whole, whether it adapts to the regime's rules or seeks to change them (Smith and Raven, 2012), or by the regime-level pathway it produces (Geels and Schot, 2007). BRW instead classifies each strategy by its functional mechanism: what it actually does to a particular lock-in barrier. This shifts the unit of analysis from the niche-regime relationship to the strategy-barrier relationship, which is where strategic choice is actually exercised.

The shift matters because a single niche actor routinely deploys different mechanisms against different barriers within the same regime. A vocabulary that aggregates over those differences hides the logic at the level where it operates. BRW makes that logic legible.

3

mechanisms: bypass, repurpose, weaken

4

barrier dimensions, plus regime coherence

1

alignment proposition that ties them together

B

MECHANISM · BYPASS

Construct a parallel system that circumvents the regime

Bypass constructs a parallel system that performs the regime's function by other means, circumventing the incumbent rather than confronting or co-opting it. The niche builds an alternative configuration that delivers the same function through a different route, so there is little direct negotiation with incumbent actors.

KEY POINT

How it works

The niche routes around the regime entirely. Where established infrastructure is absent, as in many emerging-market settings, a niche actor can build an alternative system without confronting incumbent assets at all.

Where it comes from. Bypass synthesises the substitution-pathway logic of Geels and Schot (2007) with the leapfrogging literature (Goldemberg, 1998; Aker and Mbiti, 2010) and accounts of decentralised transition in the Global South (Wieczorek, 2018; Berkhout et al., 2009). The absence of established infrastructure is what makes bypass possible without confronting incumbent assets directly.

Capability it demands

Engineering and capital-deployment capacity: the niche must be able to design and build the parallel system, and to fund it (Teece, 2007; Inigo and Albareda, 2019).

Business-model archetype

Platform or vertically integrated models that internalise the parallel-system construction, and that may follow a disruptive-innovation trajectory (Christensen et al., 2015).

Barrier it best matches

Bypass is matched to hard-tractable, high-materiality, high-coordination barriers, constraints that resist discursive intervention and can only be resolved by building an alternative. Charging infrastructure and large-scale financing arrangements are characteristic instances.

Worked example. Pay-as-you-go financing over mobile money bypasses conventional banking infrastructure, extending credit to riders with no formal banking history by building a parallel financial rail rather than reforming the incumbent one (Suri, 2017; Donovan, 2012).

R

MECHANISM · REPURPOSE

Redirect an existing regime element toward the niche's purpose

Repurpose redirects an existing regime element toward the niche's purpose, reorienting structure rather than replacing or avoiding it. It draws on the institutional logics of layering (adding new elements alongside existing ones) and conversion (redirecting existing arrangements to new ends).

KEY POINT

How it works

The niche threads into the regime and turns part of it to a new use. This reduces the capital a bypass would demand, because the existing structure provides a substrate the niche would otherwise have to build from scratch, but it requires the incumbent's cooperation.

Where it comes from. Repurpose draws on the gradual-institutional-change literature, specifically the layering and conversion modes of Streeck and Thelen (2005) and Mahoney and Thelen (2010), and on the symbiotic transition pathway of Geels and Schot (2007). It describes how niches grow by working through existing regime structures rather than against them.

Capability it demands

Relational and integrative capacity: the niche must be able to negotiate productive engagement with incumbent actors and gain access to their assets (Magnusson and Werner, 2023).

Business-model archetype

Partnership or franchise models that exploit incumbent assets and distribution, typically following a sustaining-innovation trajectory within the architecture they redirect.

Barrier it best matches

Repurpose is matched to intermediate barriers with mixed materiality and mixed tractability that offer leverageable existing structure, procurement systems, retail networks, grid capacity, financial institutions, that can be redirected rather than rebuilt.

Worked example. Placing charging at retail forecourts and shops riders already visit repurposes existing retail infrastructure; integrating with a near-universal mobile-money network repurposes a payment rail the regime already runs (Suri, 2017).

W

MECHANISM · WEAKEN

Erode the foundations sustaining incumbent advantage

Weaken erodes the foundations sustaining incumbent advantage through demonstration, advocacy, and discursive contestation. Rather than building an alternative system or co-opting an existing one, the niche works to reduce the legitimacy, perceived performance, or political support of the incumbent.

KEY POINT

How it works

The mechanism operates through the accumulation of small destabilising effects rather than head-on confrontation. It reduces the taken-for-grantedness of the incumbent, correcting misconceptions, demonstrating superior performance, building coalitions, until the regime's hold loosens.

Where it comes from. Weaken operates in the destabilisation logic developed by Turnheim and Geels (2012), Kivimaa and Kern (2016), and Hermwille (2016), and draws on Geels' (2014) account of instrumental, discursive, material, and institutional forms of regime power, and on the coalition dynamics of Hess (2014) and Avelino et al. (2016).

Capability it demands

Communicative and political capacity: the niche must be able to demonstrate, persuade, and build coalitions, and requires less capital than bypass or repurpose (Mazzucato, 2021; Wittmann et al., 2021).

Business-model archetype

Advocacy, demonstration, or coalition-based models that monetise legitimacy, visibility, and policy influence rather than transactional throughput.

Barrier it best matches

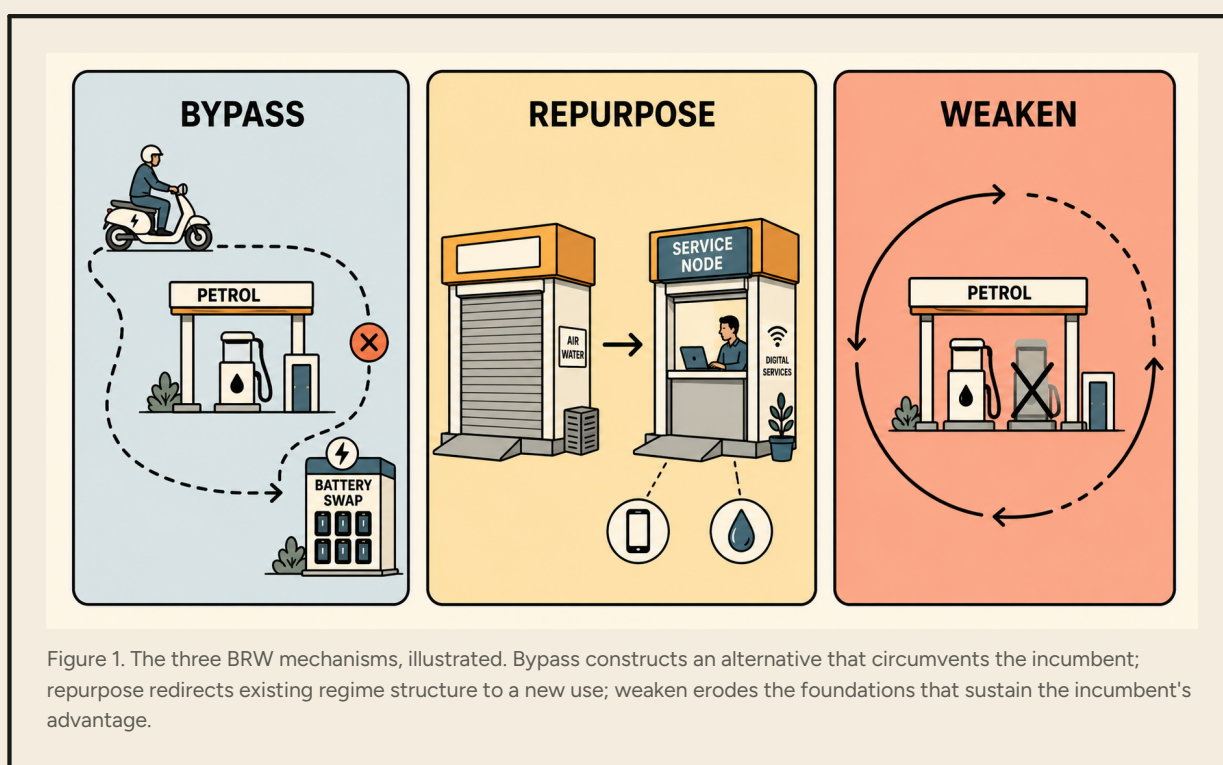
Weaken is matched to soft-tractable, low-materiality barriers, knowledge gaps, misconceptions, habits, that yield to demonstration and persuasion and can be addressed through accumulated small interventions.

Worked example. Visibly demonstrating that electric operation costs less per kilometre, and correcting through repeated proof the belief that electric motorcycles are unreliable, weakens the incumbent's grip on rider preference without building anything or partnering with anyone.

THE THREE MECHANISMS

One picture of bypass, repurpose, and weaken

The three mechanisms differ in how the niche relates to the regime. Bypass builds a parallel system (the rider routes around the petrol station to a battery-swap point); repurpose redirects a regime element (a shuttered shopfront becomes a digital service node); weaken erodes the regime's foundations (the petrol station's centrality is worn away).



The three are non-exclusive at the strategy level: a single intervention often combines mechanisms. Pay-as-you-go financing over mobile money, for instance, bypasses formal banking while repurposing mobile-money infrastructure. The typology classifies the dominant mechanism through which a strategy acts on a given barrier.

MATCHING STRATEGIES TO BARRIERS

The barrier characterisation

A typology of strategies is only useful alongside a typology of the barriers they engage. Tractability alone is not enough: knowing how hard a barrier is to move does not tell you what kind of change is required, who must coordinate to produce it, or how tightly it is bound to other barriers. The framework characterises each lock-in barrier along four dimensions, with a fifth regime-level modifier.

Dimension	What it distinguishes
Materiality	Physical assets and infrastructure, versus cognitive frames, expectations, and meanings. Determines what kind of intervention can work at all.
Tractability	Yields to short-horizon niche effort, versus requires long-horizon construction beyond the actor's control.
Coordination requirement	A single actor can resolve it, versus multiple actors must act together. Infrastructure is the canonical multi-actor problem.
Coupling intensity	Bound to other barriers, so isolated resolution fails, versus independently addressable.
Regime coherence (modifier)	Actively defended by an aligned incumbent coalition, versus persisting through inertia and absence.

Each dimension is assessed from evidence, not assumption. A barrier that looks purely technical, charging scarcity, turns out on inspection to be high-materiality, hard-tractable, and high-coordination all at once, which is precisely why it resists a quick fix. The value of the characterisation is that it makes those properties explicit and comparable across barriers.

- › In an engagement, the Lab characterises each barrier along all four dimensions from primary evidence, and weights regime coherence to context. The profiles opposite are the readable summary of a fuller analysis.

MATCHING STRATEGIES TO BARRIERS

Three profiles, three mechanisms

The four dimensions combine into three modal barrier profiles. Each is preferentially matched to one of the three BRW mechanisms, and that matching is the framework's central, testable claim.

Profile	Character	Matched mechanism
Type A	High materiality, hard tractability, high coordination	Bypass
Type B	Low materiality, soft tractability, low coordination	Weaken
Type C	Mixed, with leverageable existing structure	Repurpose

KEY POINT**The alignment proposition**

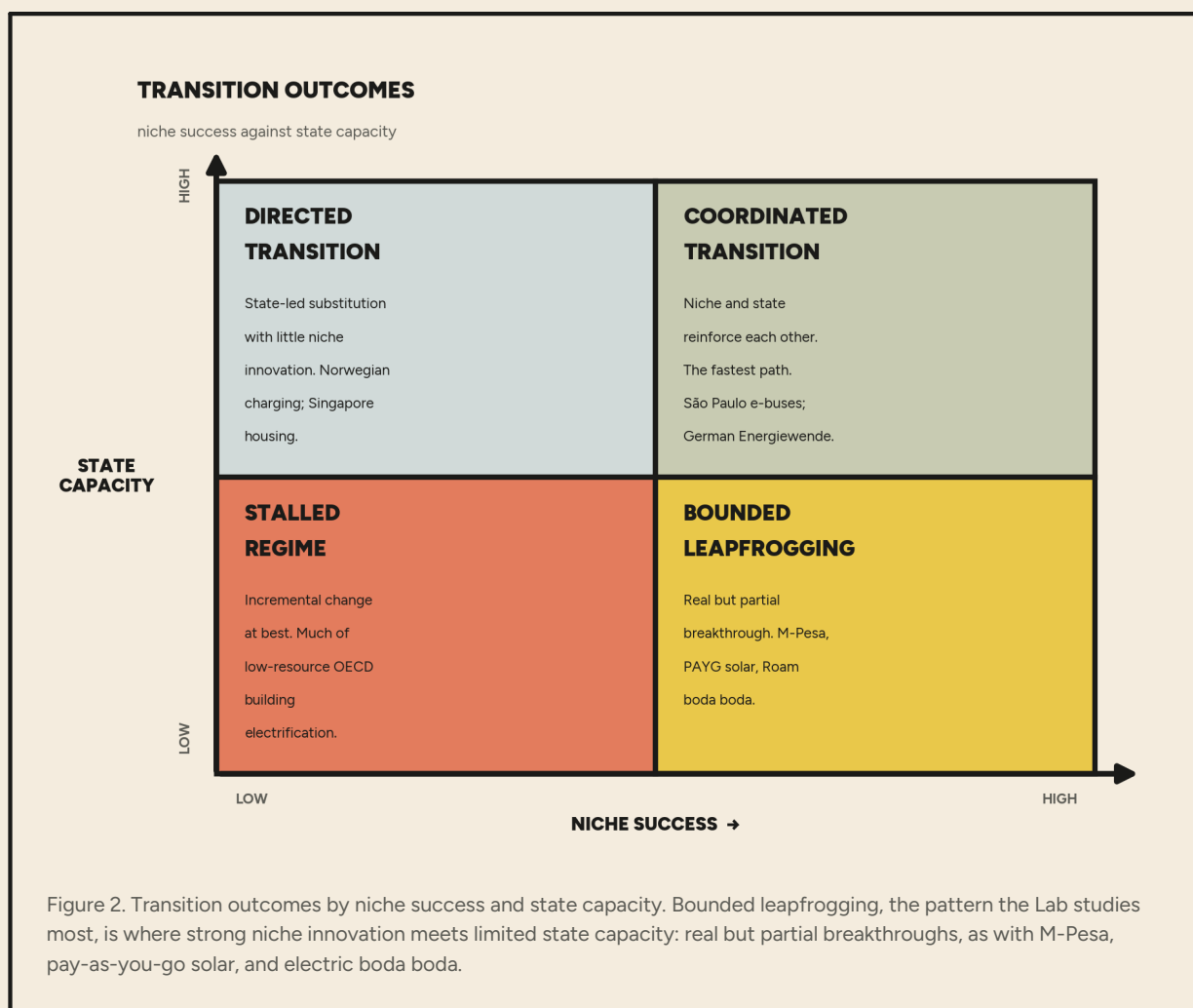
Bypass matches Type A. Weaken matches Type B. Repurpose matches Type C. Misalignment between a strategy and the barrier it targets predicts observable failure modes. This is the framework's central, falsifiable claim.

The proposition is useful precisely because it can be wrong. If a niche deploys a weaken strategy (demonstration, advocacy) against a Type A barrier (charging infrastructure), the framework predicts it will fail, and observing that failure confirms the logic. A strategy that ignores its barrier's profile wastes effort in a way the framework can name in advance.

THE WIDER PATTERN

What niche success meets in the state

The mechanisms a niche uses are only half the story. What it meets on the other side, the capacity of the state and its institutions, shapes the transition that results. Reading niche success against state capacity gives four broad outcomes.



A strong bypass into a low-capacity state produces bounded leapfrogging, not a full transition. Knowing that in advance is what separates a realistic strategy from a hopeful one.

A WORKED CASE

BRW applied: Roam in Kenya's boda boda sector

The framework was developed and illustrated through an embedded case study of Roam, an electric motorcycle manufacturer operating in Kenya's boda boda (motorcycle-taxi) sector. Five weeks of fieldwork in Nairobi (January to March 2026) produced twenty-three semi-structured interviews across six stakeholder groups, document analysis, and field observation, coded into 330 extracts against twenty-one lock-in barriers.

21

lock-in barriers identified across
six domains

16

Roam strategies classified by
BRW mechanism

7.1%

of new motorcycle registrations
electric, 2024

The regime. A mature petrol motorcycle-taxi ecosystem: roughly 4,934 retail petrol stations, refuelling in about two minutes, roadside mechanics skilled in combustion engines, informal financing, and stage-based rider communities. Crucially, it is a porous, informal regime, held together by ubiquity and habit rather than organised defence. There is no motorcycle-manufacturers' association and no coordinated fuel lobby; lock-in operates through spatial ubiquity, accumulated practice, and institutional absence.

THE WORKED CASE, CONTINUED

How Roam's portfolio maps to the three mechanisms

**WORKED
EXAMPLE**

Parallel systems against hard, material barriers

Charging and swapping. The Roam Hub battery-rental network and the planned Roam Point fast-charging network build parallel refuelling infrastructure where none existed for electric.

Financing. Pay-as-you-go financing via the M-KOPA partnership converts an upfront capital barrier into daily mobile-money payments of about 530 shillings. M-KOPA reports 66% of riders earn more on electric than on petrol.

Credit. IoT-enabled credit assessment builds a parallel creditworthiness mechanism through real-time vehicle tracking, extending finance to riders excluded from formal banking.

The match. These target the hardest, most material, highest-coordination barriers, charging scarcity and capital exclusion, which resist discursive intervention. Bypass is the only mechanism that can move them within Roam's horizon.

**WORKED
EXAMPLE**

Redirecting existing regime structure

Retail and grid. Charging placed at QuickMart and TotalEnergies sites riders already visit; a Kenya Power partnership commits 45 charging stations across six counties under an e-mobility tariff.

Payments and community. Integration with M-Pesa repurposes a payment rail at roughly 96% adult penetration; electric riders stay inside existing SACCO governance structures.

Repair. A Ridewell mechanic partnership repurposes existing mechanic relationships for non-electrical components, while Roam retains control of battery systems.

The match. These target intermediate barriers where regime structure can be redirected rather than rebuilt, exactly the Type C profile.

WORKED
EXAMPLE

Eroding the incumbent's soft foundations

Cost demonstration. Showing the materially real cost gap, electricity versus petrol per kilometre, directly challenges the economic logic of petrol preference.

Myth correction. Countering, through word of mouth and visible proof, beliefs that electric motorcycles short out in water or that batteries fail rapidly.

Reliability and community. High-profile long-distance rides supply proof beyond peer endorsement; the Adventure Bikers club and WhatsApp groups build electric-rider networks independent of geography-bound stages.

Advocacy. Contributing to the National Electric Mobility Policy (launched February 2026, with a 30% target by 2027).

The match. These target soft, low-materiality barriers, habit, misconception, cost perception, that yield to demonstration.

The alignment held in its central tendency: bypass clustered against hard-material-high-coordination barriers, weaken against soft-low-materiality barriers, repurpose in between. The informative outliers, a weaken mechanism (cost demonstration) reaching into hard economic territory where the cost advantage was already real, reveal the framework's internal structure rather than contradicting it.

The pathway is bounded leapfrogging: selective bypass in soft domains coexists with required construction in hard ones. Not pure leapfrogging, not blocked, but bounded by which barriers can and cannot be circumvented.

THE ROAM CASE

USING BRW ON YOUR OWN CASE

The six-step protocol

The framework operationalises into a repeatable six-step protocol. It is what the Lab runs on a client's transition, and what you can run on your own.

Step	What you do
1 · Map barriers	Identify the specific lock-in barriers the niche confronts, within each regime domain, from evidence rather than assumption.
2 · Characterise	Score each barrier on materiality, tractability, coordination, and coupling; score the regime on coherence.
3 · Classify strategies	Identify the niche's strategies and classify each by dominant mechanism: bypass, repurpose, or weaken.
4 · Assess alignment	Check whether each strategy's mechanism matches its target barrier's profile. Misalignment flags likely failure.
5 · Trace couplings	Identify tightly coupled barriers that cannot be resolved in isolation, and must be addressed as a bundle.
6 · Diagnose pathway	Synthesise the alignment pattern into a pathway diagnosis: well-aligned, partial, or misaligned, and what trajectory results.

FOR EUROPEAN PROJECTS AND CONSORTIA

In a Horizon Europe or ESF+ consortium, BRW gives the work package that funders scrutinise most, the analysis of why a transition will or will not hold, a rigorous, comparable structure. It is exactly the cross-sector reading a single deployment cannot produce from the inside.

KEY POINT

How the Lab uses BRW in an engagement

We use BRW to frame a study before fieldwork begins: it tells us which barriers to characterise, which strategies to classify, and where to look for misalignment. It turns a broad brief into a precise diagnosis of strategy-barrier fit, and the fieldwork then confirms, refines, or overturns the initial reading.

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The academic grounding

The BRW framework is developed in full in the academic work of Marcel Xing-Kai Kempers (Faculty of Technology, Policy and Management, TU Delft). Selected sources:

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