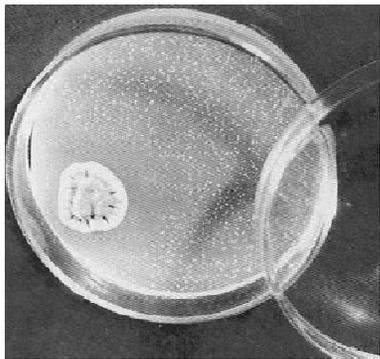
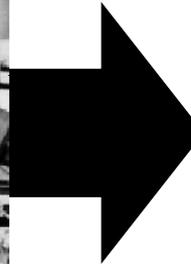
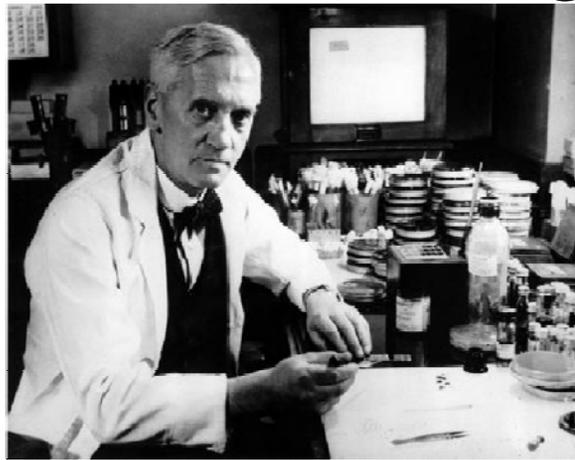


Scale-up and spread



1928



David C. Aron, MD, MS

Louis DVAMC Stokes Cleveland
10701 East Blvd., Cleveland, OH
Case Western Reserve University School of
Medicine, Cleveland, OH
David.aron@va.gov

Formerly co-director of



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The following **presentation is rated R** (Opining and sarcasm may “inadvertently” seep in.) Viewer discretion is advised. However, feel free to challenge everything I say.

Definition

" Scaling up: Deliberate efforts to increase the impact of health service innovations successfully tested in pilot or experimental projects so as to benefit more people " .

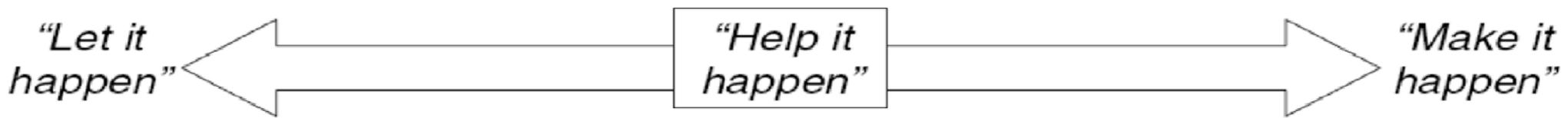
Source: WHO, Reproductive Health Research & ExpandNet. From pilot projects to policies & programmes: Practical guidance for scaling up health service innovations (WHO, 2006).

The “what” of what is scaled up

- A “practice”, such as a way of carrying out a work task, for example a health worker using a checklist to ensure they have done all the parts of the task,
- A combination of practices, such as a number of interventions for expectant mothers
- A way of organizing a service, such as creating a closer coordinated team of practitioners,
- Other types of intervention, such as a new way of paying providers.

John Ovretveit. Scale Up and Spread – The International Health Experience, *Conference to Advance the State of the Science and Practice on Scale-up and Spread of Effective Health Programs*, Washington, DC, July 6-8. , 2010).

The “how” of scaling up (models)



Defining Features

Unpredictable, unprogrammed, uncertain, emergent, adaptive, self-organizing

Negotiated, influenced, enabled

Scientific, orderly, planned, regulated, programmed, systems “properly managed”

Assumed Mechanism

Natural, emergent

Social

Technical

Managerial

Metaphor for Spread

Emergence, adaptation

Knowledge construction, making sense

Diffusion Negotiation

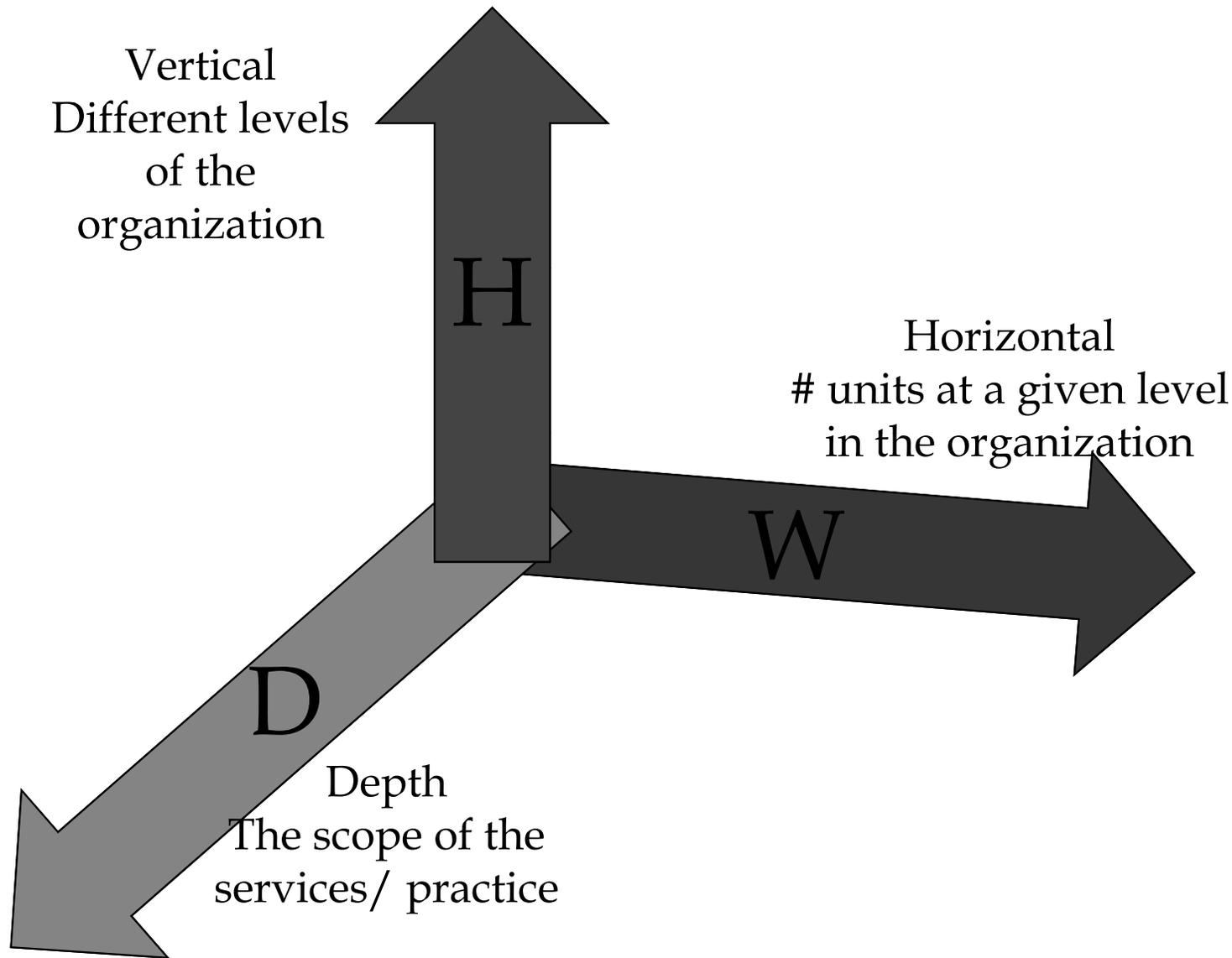
Knowledge transfer

Dissemination, cascading

Re-engineering

Greenhalgh T, Robert G, Macfarlane F, Bate P, Kyriakidou O. Diffusion of innovations in service organizations: systematic review and recommendations. *The Milbank Quarterly* 2004; 82(4):581-629.

The “direction” of scaling “up”



Industrial (Mechanical) Scale-up-Make it Happen



Early penicillin culture facility at the Sir William Dunn School of Pathology, Oxford, England.
Museum of the History of Science, Oxford



Fermentation unit used in purifying penicillin in 1945.

Merck Archives

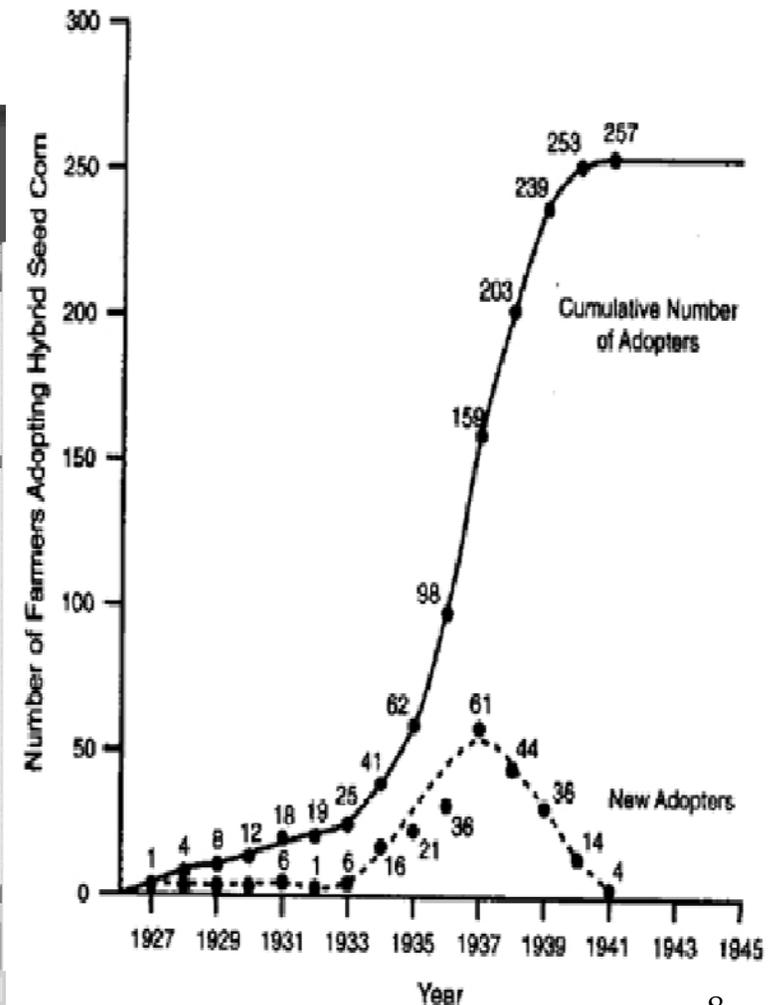
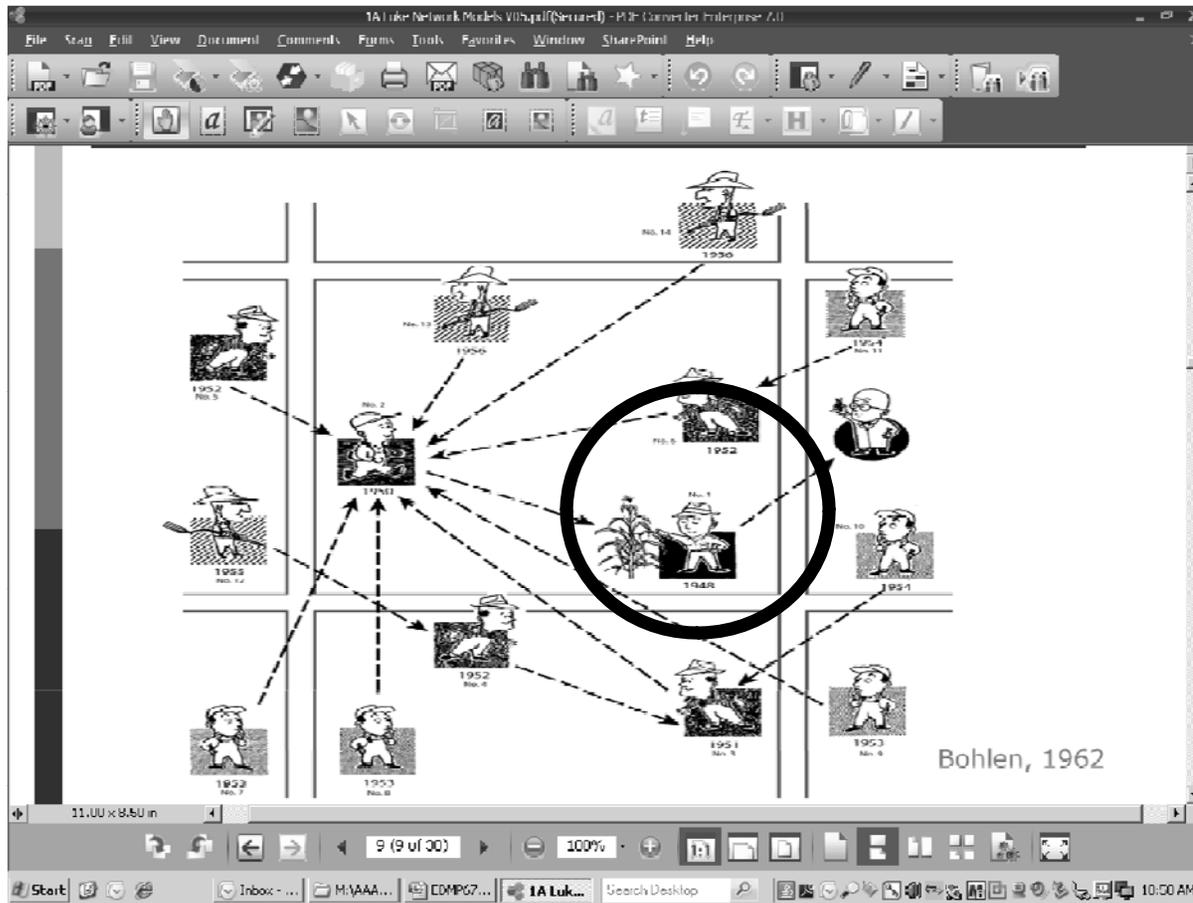
Upper part of fermentors (tanks) used to produce penicillin and vitamin B12.

Merck Archives

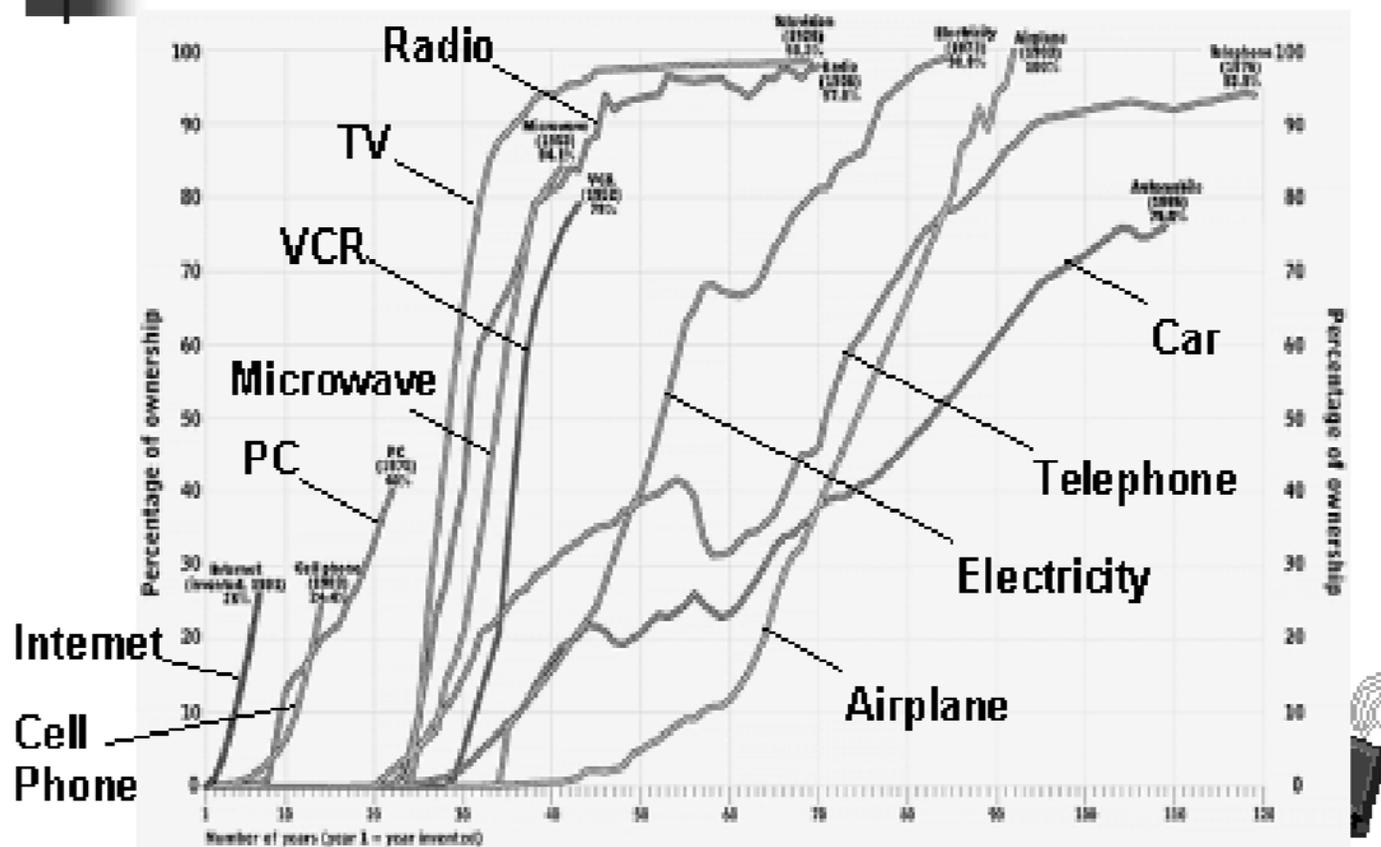


Diffusion of Innovation Let it Happen

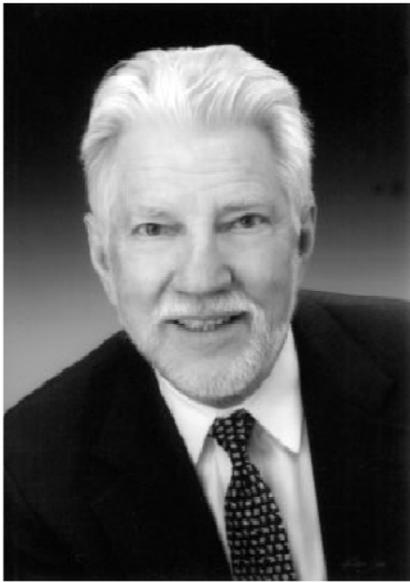
Using the rate of adoption of hybrid corn by farmers in the early 1930s, Ryan and Gross were to derive some very important insights. These two researchers interviewed 345 farmers in Iowa about their use of hybrid corn, when the farmers first heard about it and when they started using it.



Technology Adoption

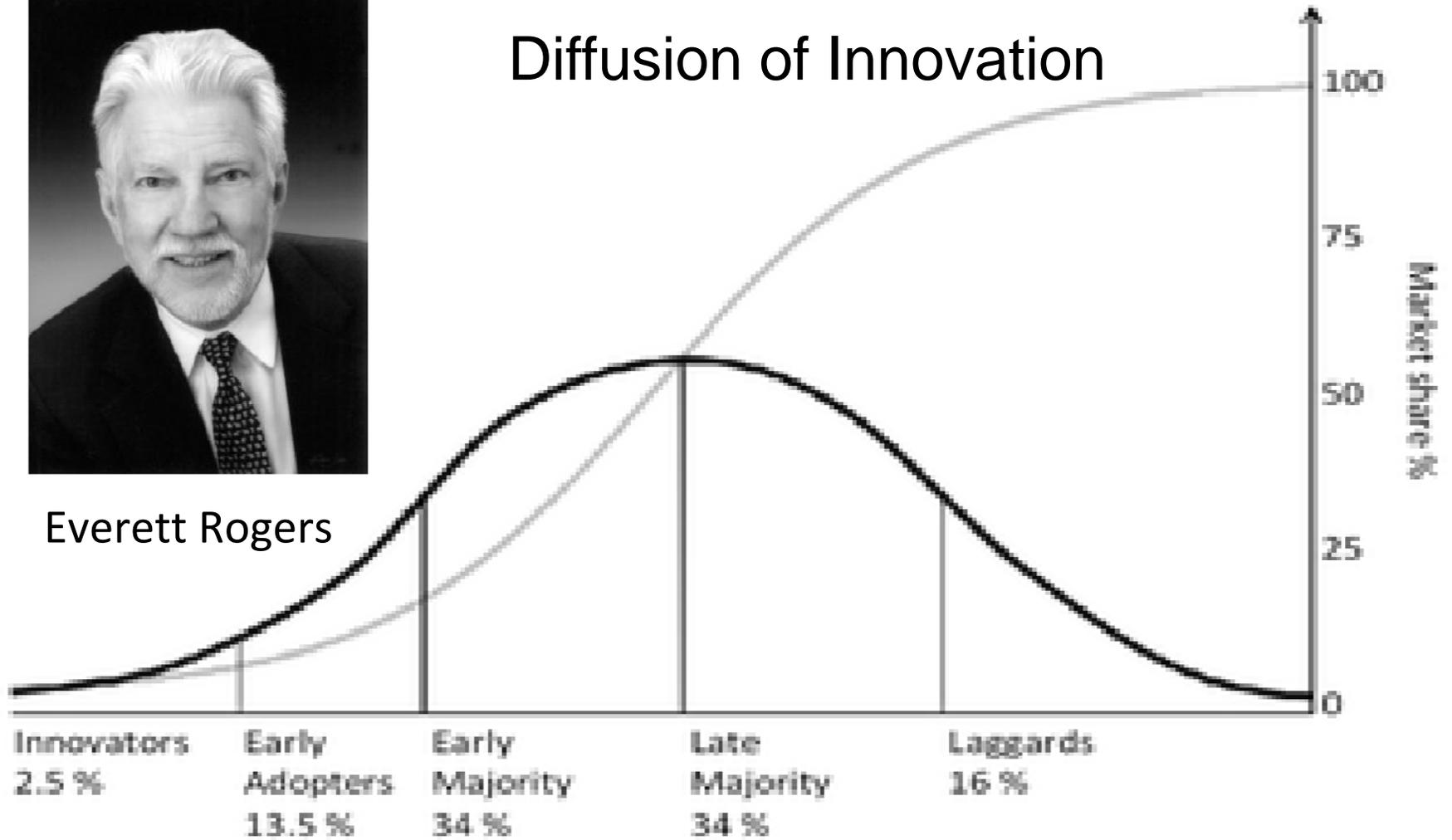


Forbes Magazine July 7th, 1997 1



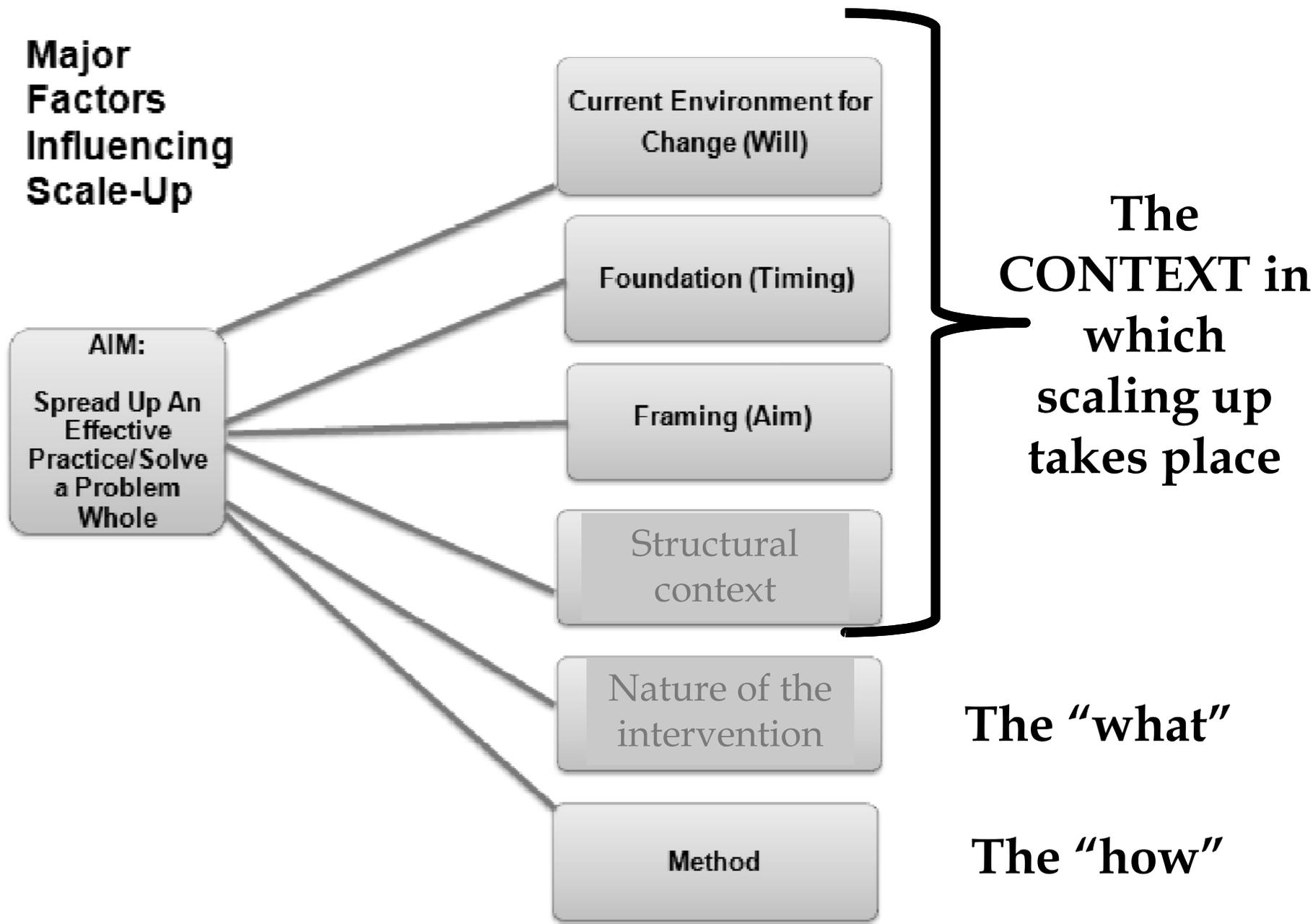
Everett Rogers

Diffusion of Innovation



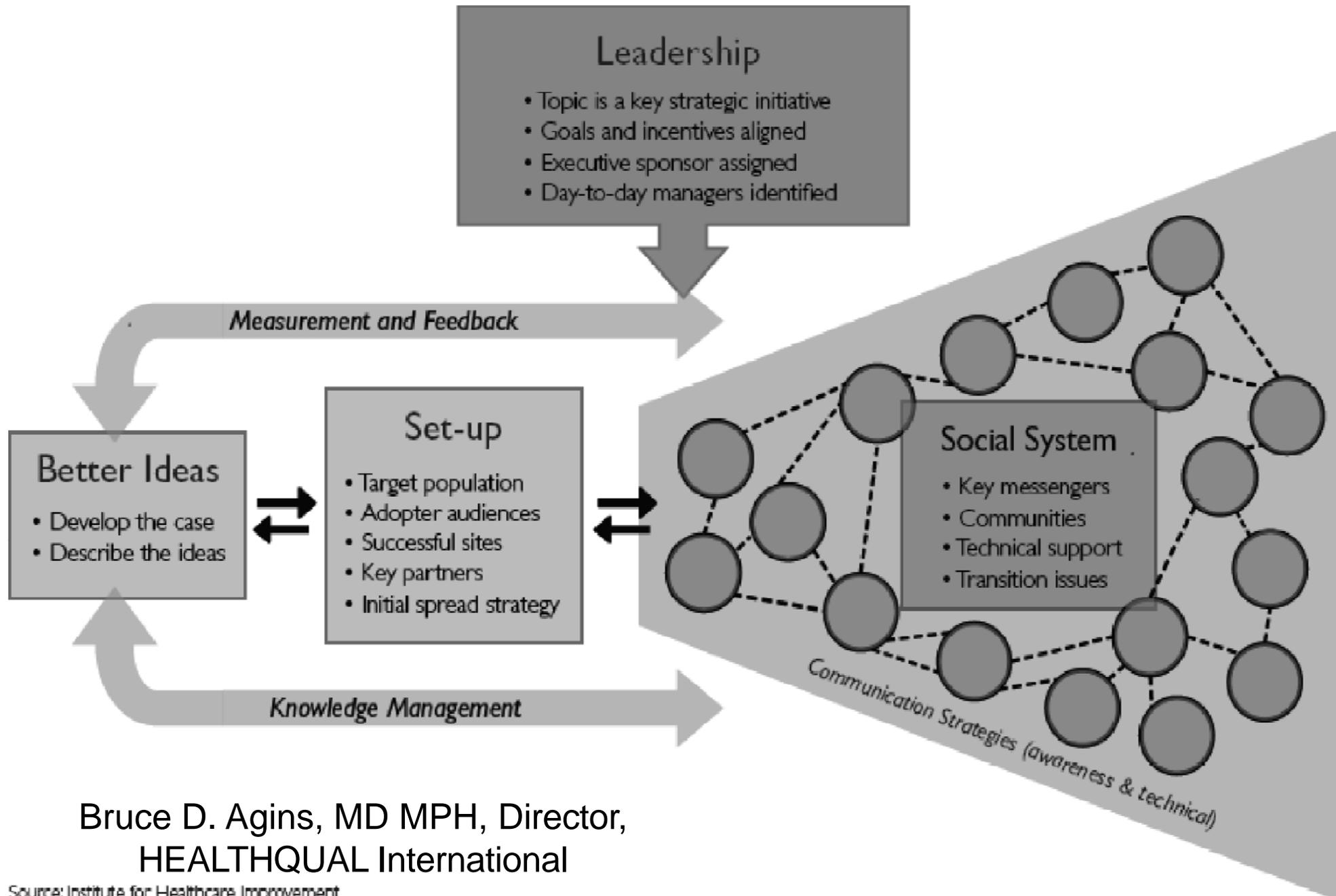
Plsek	Original Thinking Paradigm-busting thinking	Creative connection thinking	Clever thinking	Potential better practice thinking	Usual thinking
Fraser	Enthusiast	Visionary	Pragmatist	Conservative	Skeptic

Major Factors Influencing Scale-Up



Joe McCannon

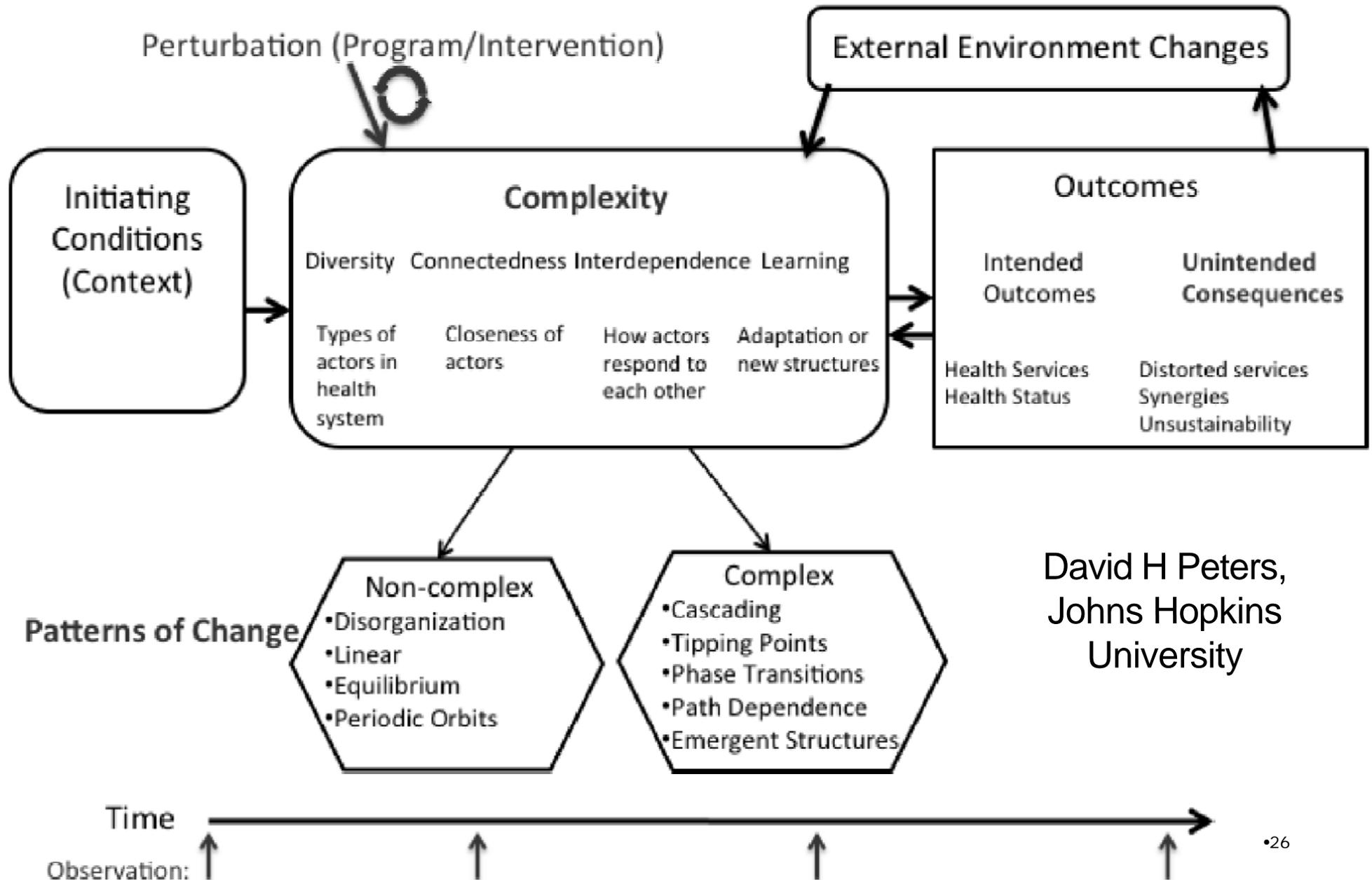
Figure 1: Framework for spread



Bruce D. Agins, MD MPH, Director,
HEALTHQUAL International

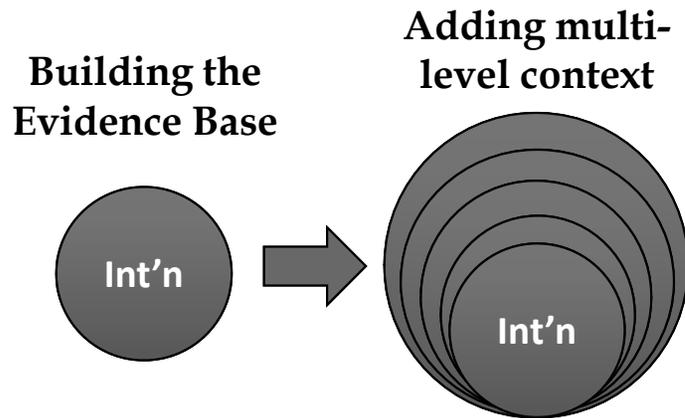
Source: Institute for Healthcare Improvement

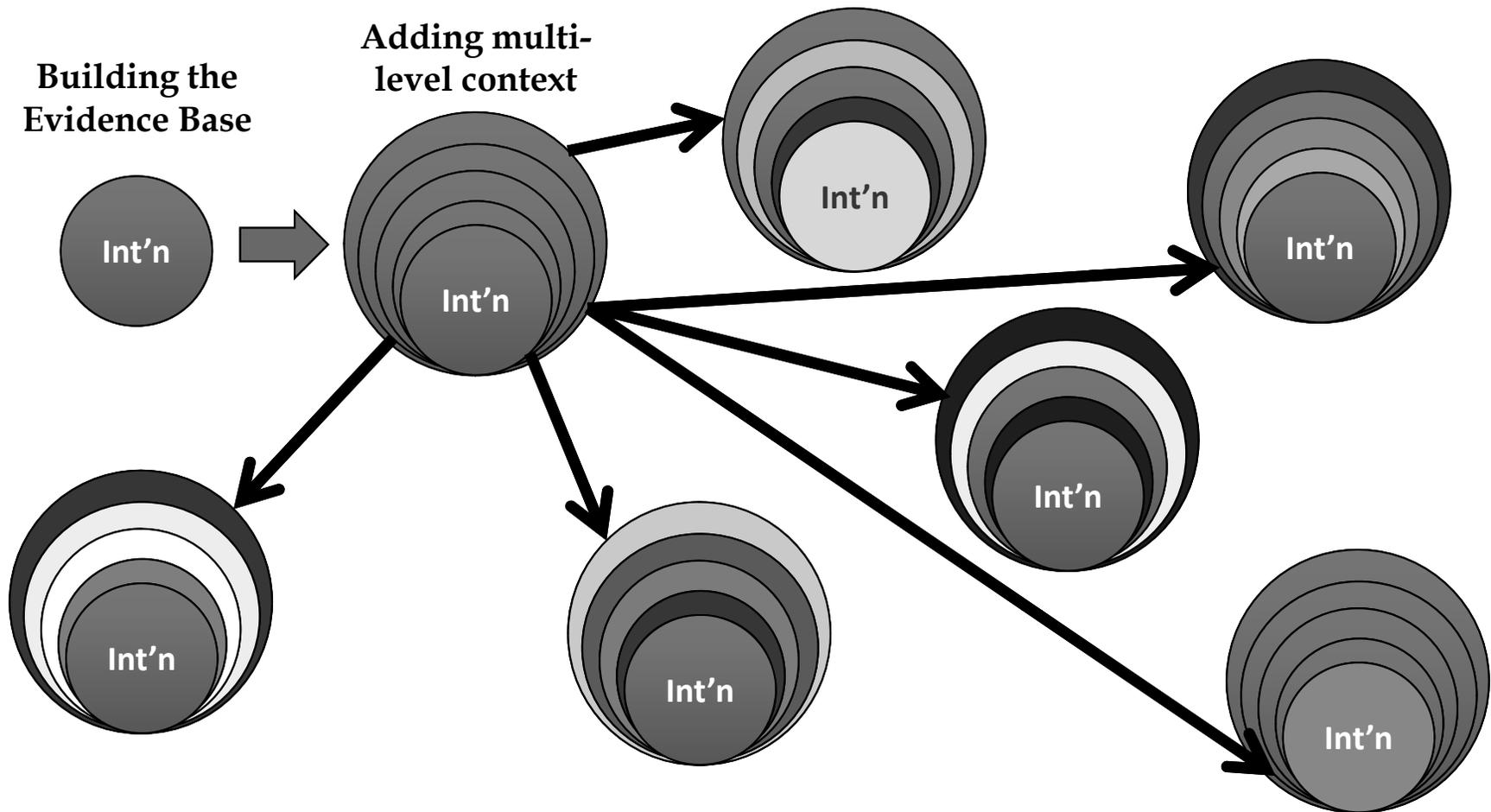
- Model for Evaluating Scaling Up as
- Complex Adaptive System



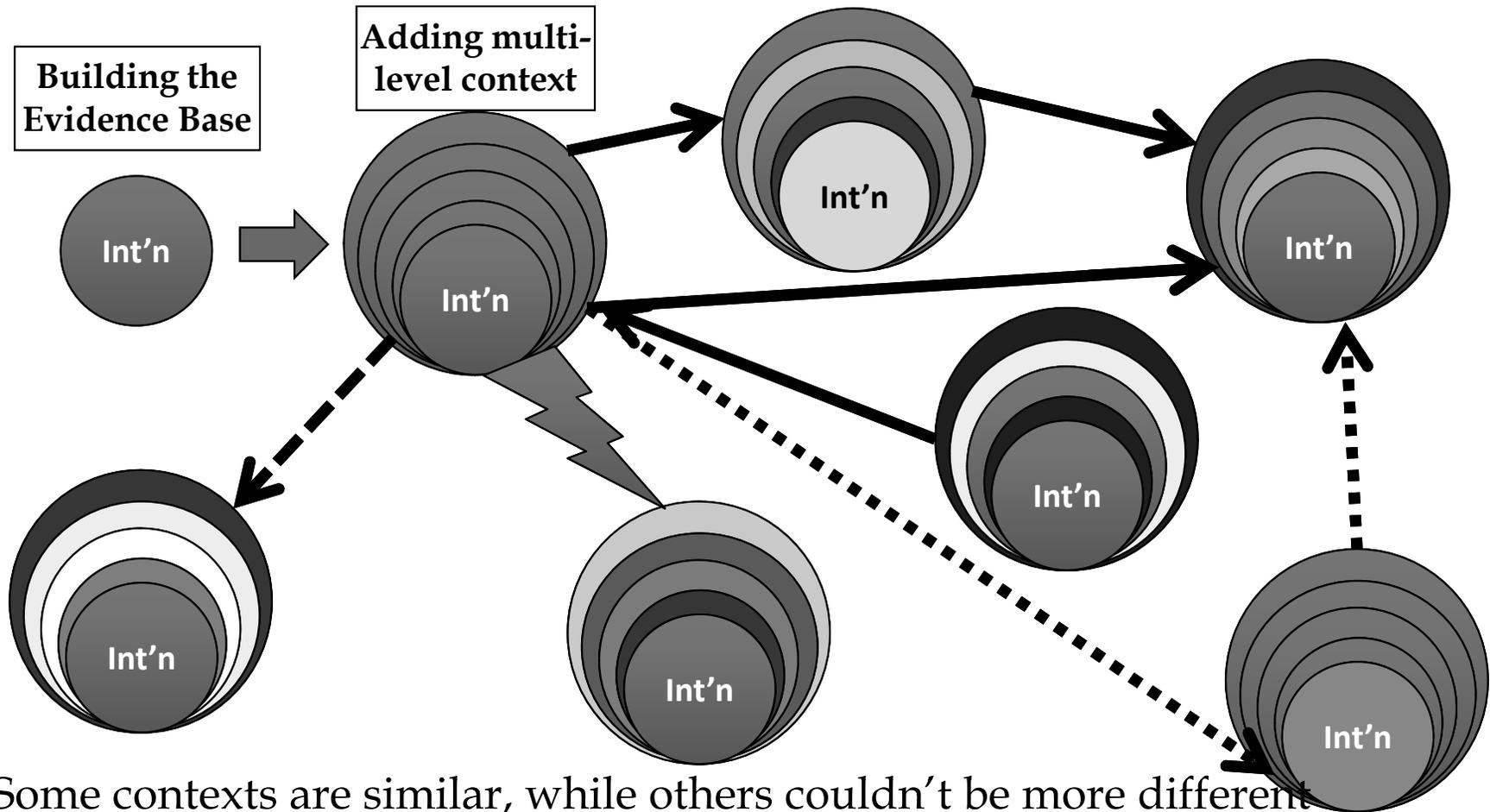
David H Peters,
Johns Hopkins
University

Conceptualizing Scale-Up & Spread





- What ties connect each new target for spread?
- Stakeholder communication → who, what levels, how?
- Can we map to different contexts or treat each uniquely?



- Some contexts are similar, while others couldn't be more different
 - Not all partnerships “created equal” (competition, resources)
- Requires teams → single “champion” unlikely to be right fit for all
 - Bi- to multi-directional opportunities → active communication

All of these issues and more were observed/dealt with in the WAVES/TIDES/COVES/RIPPLE/RE-TIDES series of projects to scale up collaborative care for depression.

What is TIDES?

(Translating Initiatives in Depression into Effective Solutions)

- 1990's: Researchers tested depression care improvement models
 - Collaborative care with care management necessary and sufficient (over 36 high quality randomized trials)
- 2000: TIDES = Can VA implement collaborative care as part of routine care?
 - VISN leadership were decision-makers
- 2006: TIDES part of national VA rollout
Lisa Rubenstein QUERI MEETING 2008.
- **NOTE THAT THE PROCESS IS STILL GOING ON.**

Lessons from WAVES: Trials May Not Reflect Real World Implementation

- Real world interventions are implemented through some type of quality improvement method
 - Interventions only sustain if integrated into organization's real world activities
 - Difficult to use trials to study QI implementation without distortion
- Trial can't capture some strong determinants of real world program functioning
 - E.g., primary care provider preferences and experience determine use of the treatment model

Rycroft-Malone et al. A pragmatic cluster randomised trial evaluation three implementation interventions.

Implementation Science. 2012;7:80

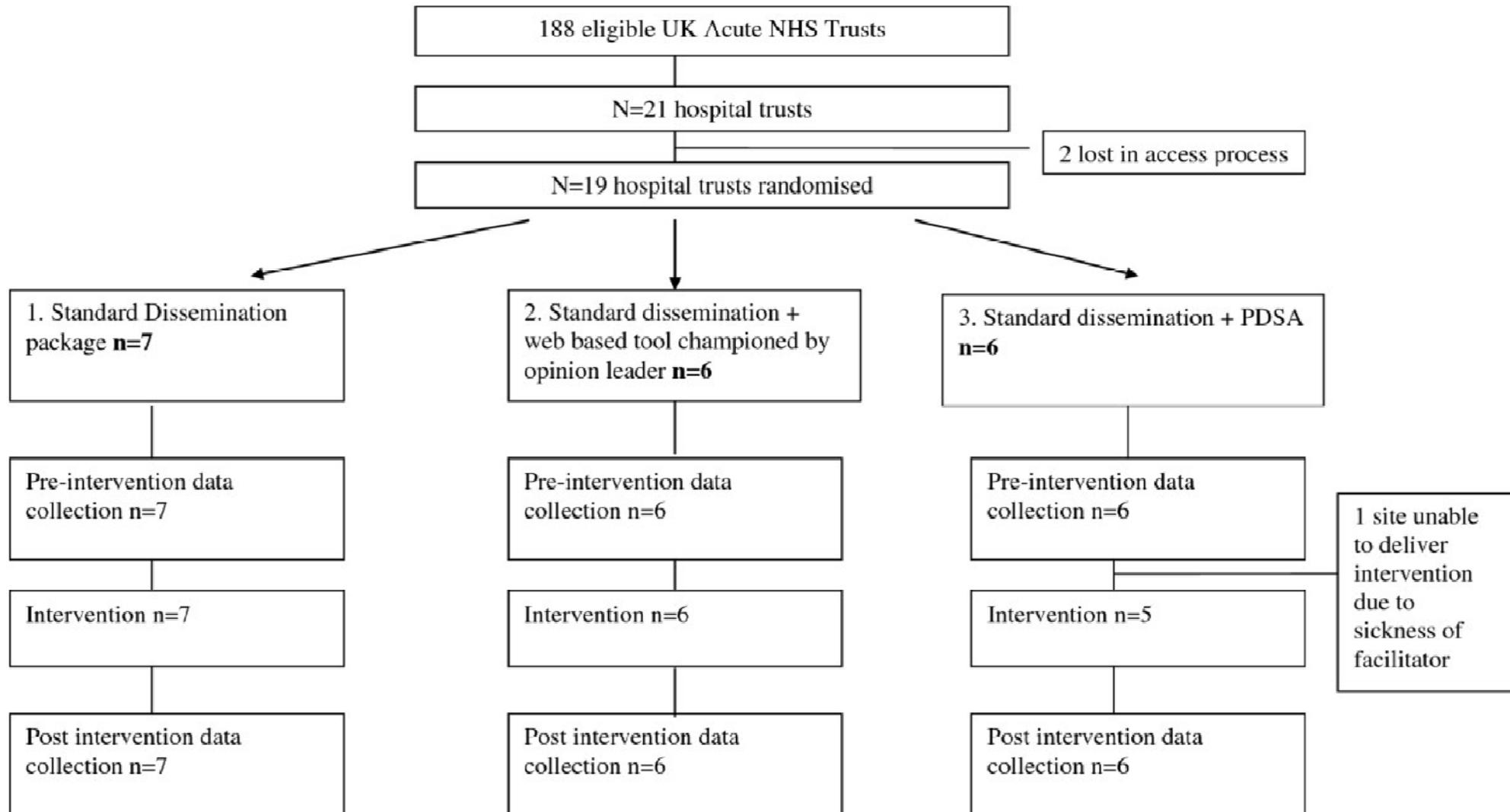
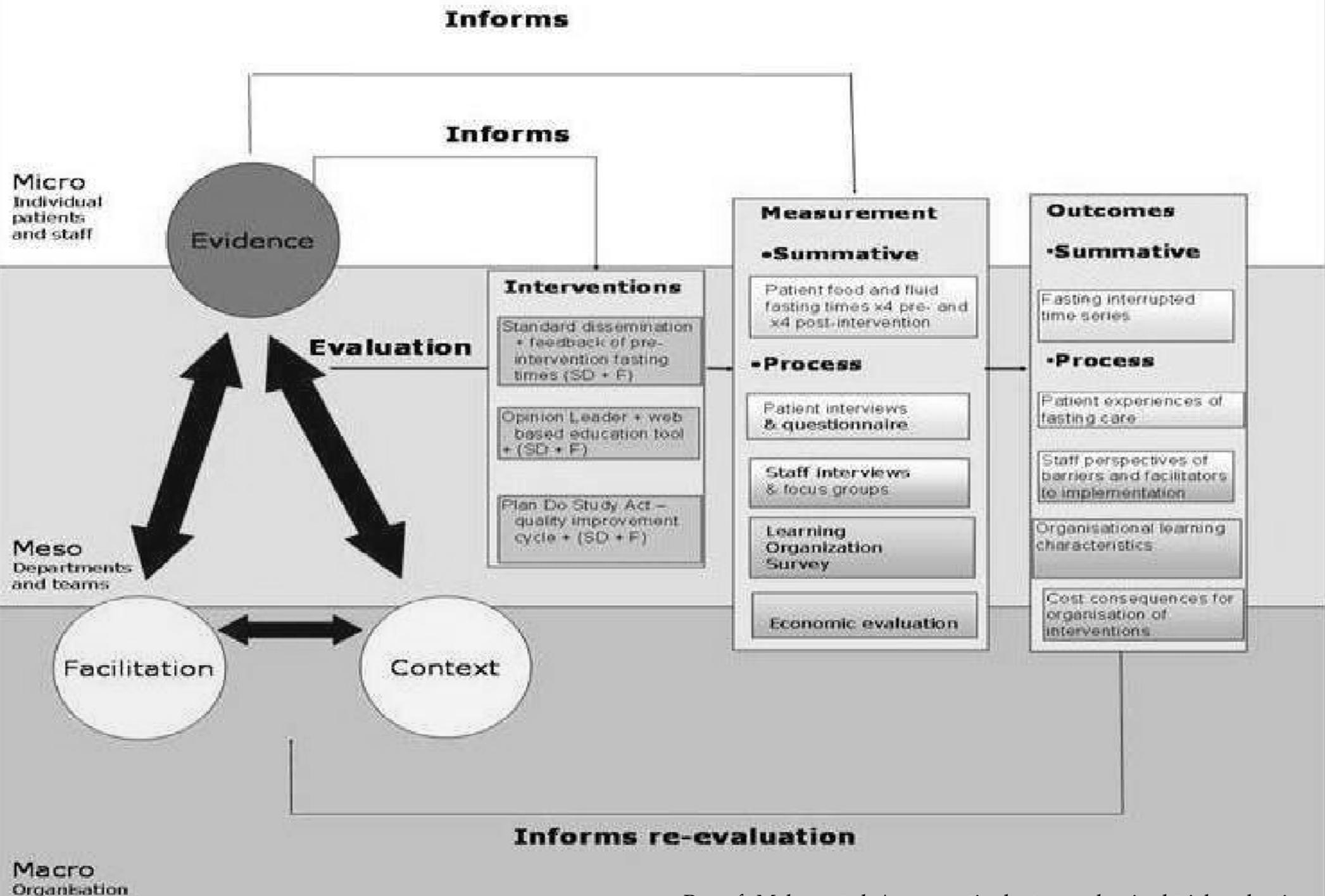
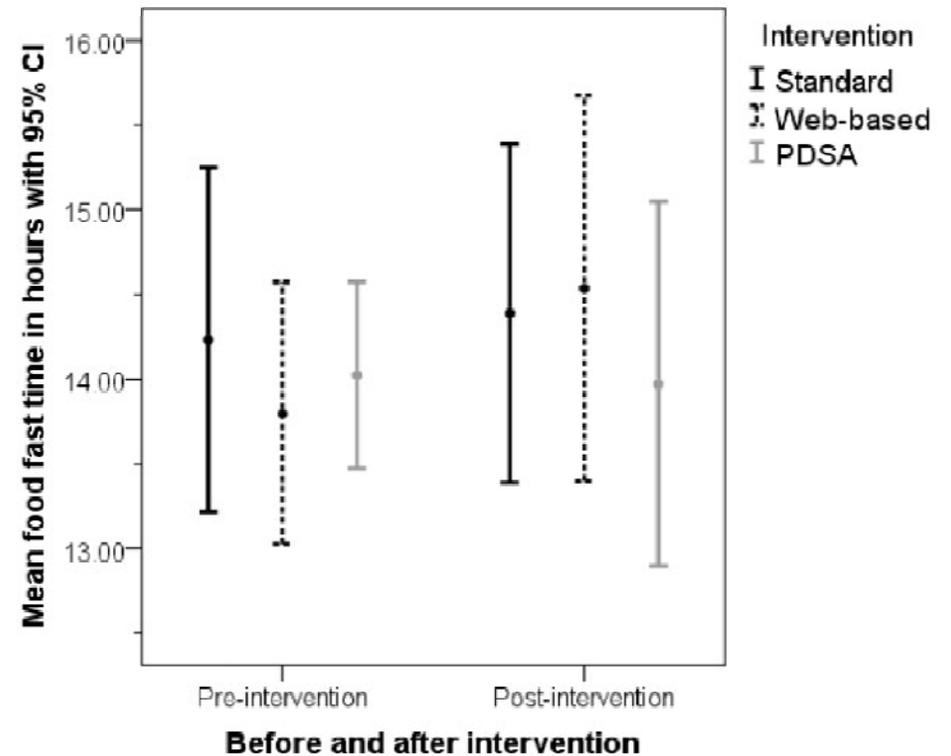
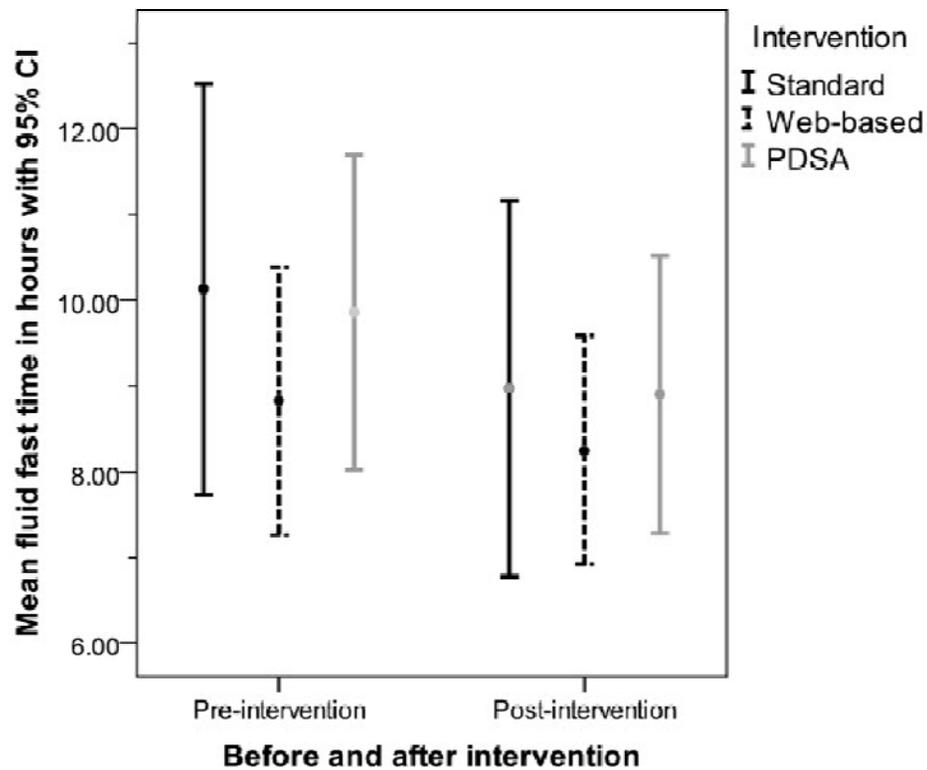


Table 4

Intervention group across pre-and post-intervention timepoints

Intervention	Pre-intervention		Post-intervention	
	Food ANOVA	Fluid ANOVA	Food ANOVA	Fluid ANOVA
Standard dissemination	p = 0.981	p = 0.951	p = 0.872	p = 0.160
SD + web-resource/opinion leader	p = 0.410	p = 0.716	p = 0.536	p = 0.814
SD + PDSA	p = 0.958	p = 0.981	p = 0.748	p = 0.714





Rycroft-Malone et al. A pragmatic cluster randomised trial evaluation three implementation interventions. *Implementation Science*. 2012;7:80

Conclusions

This was a large, complex study and one of the first national randomised controlled trials conducted within acute care in implementation research. The evidence base for fasting practice was accepted by those participating in this study and the messages from it simple; however, implementation and practical challenges influenced the interventions' impact. A set of conditions for implementation emerges from the findings of this study, which are presented as theoretically transferable propositions that have international relevance. (my underlining-dca)

My interpretation:

Although it would have been interesting to have a true control group, no strategy works better than anything else... INDEPENDENT OF CONTEXT.

There are a set of conditions and antecedents for implementation that emerge from the findings of this study, which we have developed into a number of propositions:

- 1. Implementation is more likely to be successful in cases where the topic/issue is a strategic and organisational priority...
- 2. A historical lack of clear leadership, structure, and process for local guideline dissemination and implementation, in which staff are unclear about their responsibilities, will negatively impact on an organisation's ability to routinely use guideline recommendations.
- 3. Robust and believable evidence is not always sufficient to change decision making and practice, therefore implementation interventions and efforts need to extend beyond individual decision making (at least for certain clinical topics) and take account of the systemic inter-connections between individuals, teams and organisations.

- 4. In areas where there is more effective teamwork with clear communication, practice change will be easier to achieve.
- 5. New improvement and implementation projects have a higher chance of success if they are embedded into existing programmes and structures.
- 6. Change agent effectiveness is a function of the protected space and dedicated time to fulfil the role, *i.e.*, it has to be part of the 'day job.'
- 7. Change agents will be more effective if they have people management skills, work collaboratively, handle difficult situations and people with diplomacy, understand where people 'are coming from,' develop and motivate a team, including effective and considerate delegation of work, using team members skills well...

- 8. Evaluations of implementation interventions that capture different types of impacts over the course of the study/programme are more likely to provide a realistic picture of knowledge use, and intended and unintended consequences...
- 9. Complex interventions ...need to be deconstructed to gain a greater understanding of the linkages between the active components/mechanisms of action and the impact on both process and summative outcomes.
- It is likely that these propositions will be theoretically transferable to other implementation studies, particularly when considered alongside the growing empirical and theoretical evidence base about the successful ingredients for successful implementation.

Time for researchers to get real?

RCT	Realistic Evaluation
Intervention is independent from other external changes	External changes in or outside the group are part of interventions, and must be reported together with the results
Isolating of confounding factors enables the researcher to infer a direct link between intervention and outcome	In real world interventions, isolation of confounding factors is not possible. Context and mechanisms are seen as factors which initiate or trigger the causal relationship. Hence, an outcome cannot be seen isolated from context and mechanisms
Internal validity ensures the ability to generalize. Differences in contextual factors are eliminated given large samples	Generalization is based on a comparison of relevant context and mechanism

Pedersena LM, Nielsena KJ, Kinesb P. Realistic evaluation as a new way to design and evaluate occupational safety interventions. *Safety Science* 50 (2012) 48-54

Take home points/ Issues to think about

- There is no easy solution. If there were, word would have gotten around by now. (paraphrasing J. Derrida)
- Is scaling-up a “wicked problem” (Rittel-Weber). If so, there is no Solution, only solutions.
- Is every instance of scaling-up unique?
- Are our “researcher” mental models not only wrong (as all models are to one degree or another), but dangerously wrong?

Supplementary Material

What we don't know

- Direct and indirect costs of scale up.
- Requirements for initial versus sustained scale-up.
- Comparative effectiveness of approaches that apply to different types of innovations and contexts.
- Intersection of scaling-up and scaling-down processes.
- Unintended consequences

Adapted from: *Scaling-up Health Innovations and Interventions in Public Health: A Brief Review of the Current State-of-the-Science* Nancy Edwards, RN, PhD, School of Nursing and Department of Epidemiology and Community Medicine, Univ. of Ottawa and Institute of Population and Public Health, Canadian Institutes of Health Research. Ottawa, Canada

Recommendations for Research

- A typology of innovations to facilitate comparisons
- A framework for efficiently assessing context.
- Include equity outcomes.
- Temporal dimensions of scaling-up require further study.
- Systems integration – how can/do innovations scale up and become just the way we do business
- De-scaling
- Systems approaches

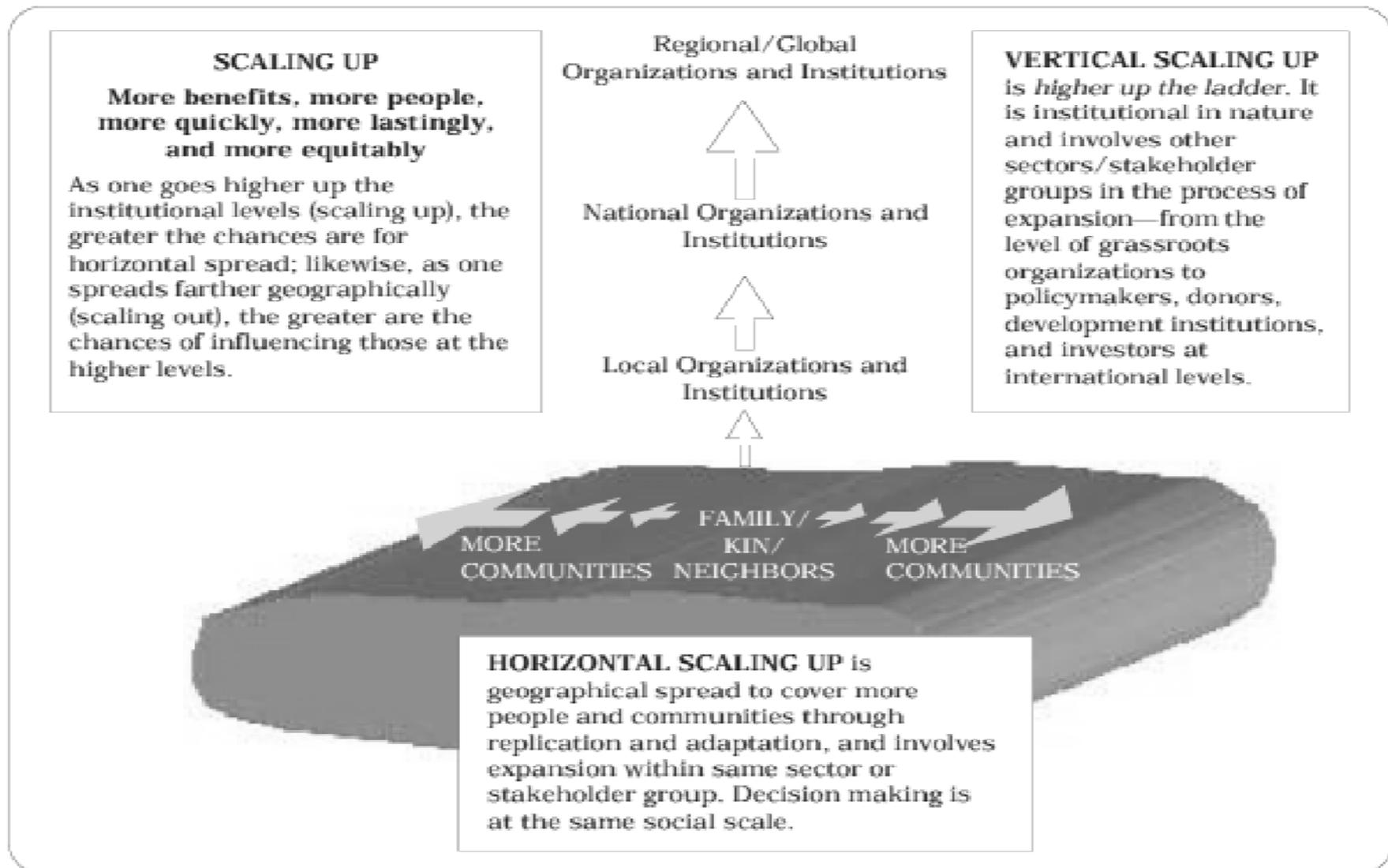


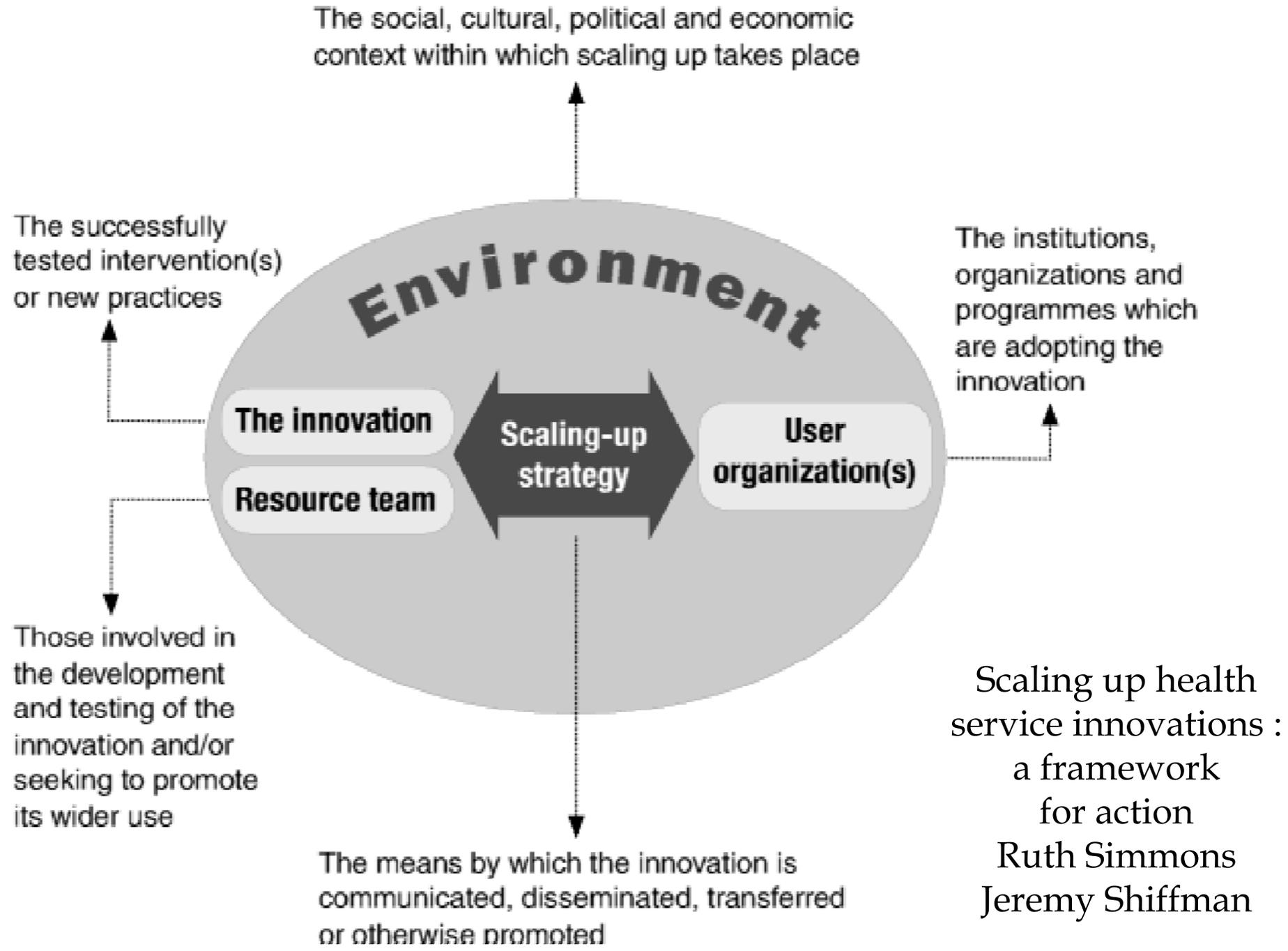
Figure 1. Definitions of scaling up (adapted from IIRR, 2000, p. 17).

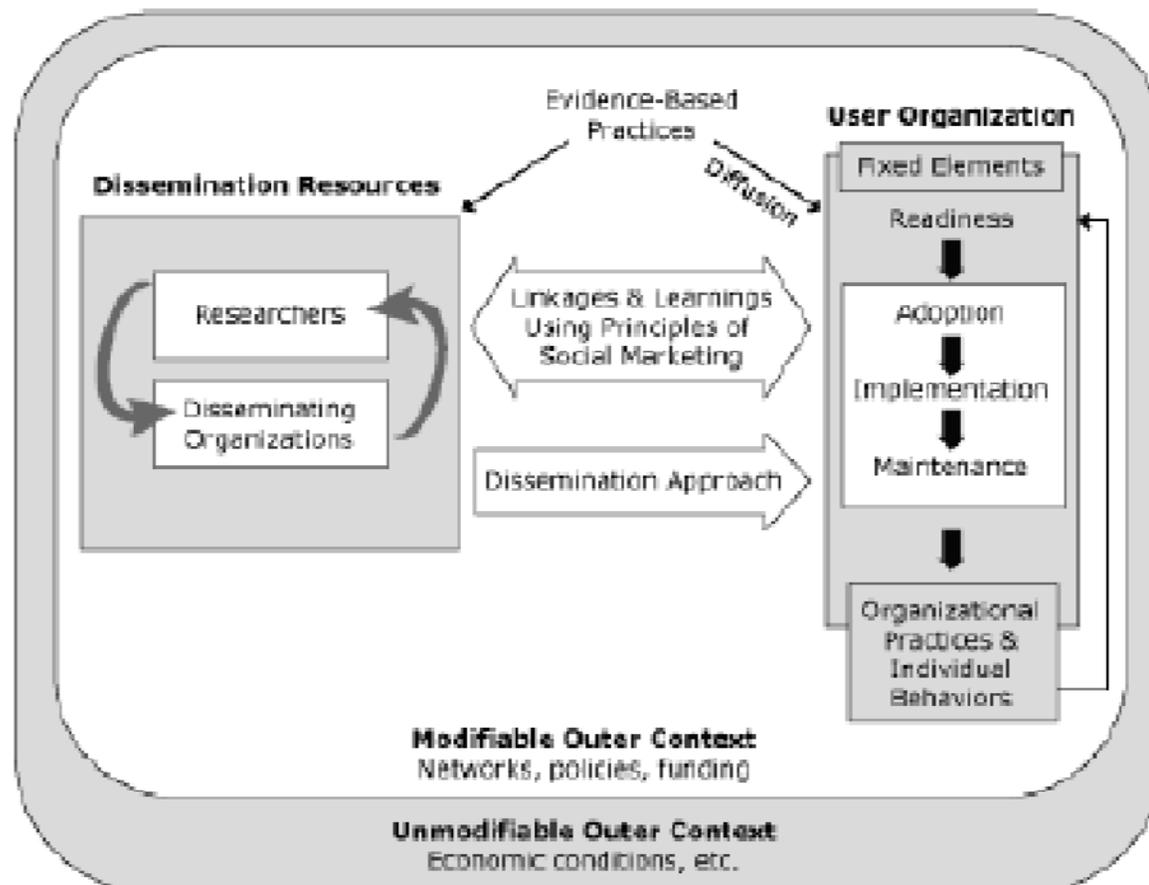
Definitions of scaling (adapted from: IIRR (International Institute for Rural Reconstruction). 2000. *Going to scale: Can we bring more benefits to more people more quickly?* IIRR Workshop, Silang, PH. 114 p.

H. Menter, S.Kaaria, N.Johnson & J. Ashby

http://ciat-library.ciat.cgiar.org/Articulos_Ciat/scaling_up_chapter_1.pdf Harriet

MODELS





Suggested citation for this article: Harris JR, Cheadle A, Hannon PA, Forehand M, Lichiello P, Mahoney E, Snyder S, Yarrow J. A framework for disseminating evidence-based health promotion practices. *Prev Chronic Dis* 2012;9:110081. DOI: <http://dx.doi.org/10.5888/pcd9.110081> .



- 8 key themes which highlight the conditions necessary to successfully scale up innovation across the public sector:

- **Culture:** build a culture that rewards and encourages scaling up innovation
- **Evidence:** make the business case and demonstrate the social return
- **Skills:** embed skills needed for scaling up and understand that skills to innovate and to scale up are different
- **Networks:** develop and use networks to make connections, provide advice, share knowledge and create dialogue
- **Processes:** embed processes and mechanisms that facilitate scaling up
- **Ownership:** recognise that a feeling of ownership acts as an incentive to share learning about what works
- **Resources:** manage resources, funding, expertise and support to actively encourage scaling up.
- **Credibility:** credibility, endorsement and reputation provide the business case for scaling up

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Table 1. A structural taxonomy of types of interventions ranging between two extremes: ideal clinical interventions to socially complex service interventions

Key inputs of interventions	Ideal clinical intervention	Socially complex service intervention
Staffing arrangements	Single provider Professional staff Standardized expertise Highly motivated staff	Many providers Mix of lay and professional staff Non-standardized expertise Differently motivated staff
Protocol specificity	Concrete and measurable	Ambiguous and hard to measure
Subject involvement	Illness/problem with low level of professional uncertainty High insight into illness High understanding of benefits and risks Health is valued	Illness/problem with high level of professional uncertainty Variable insight into illness Variable understanding of benefits and risks Mental health has mixed value
Environment boundaries	Hard external boundaries	Soft external boundaries