Not All Change Is Good:

Recognizing When and How to Champion Technology Innovation

Jeremiah Bowles – Autodesk Consulting
Lance Kirby – Autodesk Consulting - Co-presenter

BM6475 You may be great at chopping down trees, but it's important to be in the right forest. This course will help you change champion technology innovation initiatives across the enterprise, attain recognition, and get promoted. Knowing which battles are meaningful to win because they benefit the company will help you gain or lose influence. This course will help you to gain executive sponsorship and identify and charter meaningful initiatives. You will also discover Building Information Modeling (BIM) and virtual design and construction (VDC) initiatives that make your company money, establish the business case for the change, develop success measurements for the change, establish which stakeholders can help drive the change, as well as identify both the parties who will own the change and success measures that will gain high-level commitment to win and succeed.

Learning Objectives

At the end of this class, you will be able to:

- Learn to identify meaningful initiatives that influence company revenue
- Learn how to develop and champion enterprise technology innovation initiatives
- Understand the critical variables that help to better ensure successful execution
- Understand the change management framework and methodology

About the Speaker

Jeremiah Bowles is a Customer Success Manager for Autodesk, Inc., in the company's Global Services. He previously directed process and technology for a global engineering, procurement (EPC), and construction firm, and he has served in other capacities as a project manager and design technologist, including as a Building Information Modeling (BIM) / CAD manager, BIM specialist, a designer/drafter, and an adjunct professor. His diverse portfolio of experience in architecture, engineering, and construction has provided value for over 22 years. He has authored many magazine articles and contributed to many industry publications. He is involved in creating academic curriculum used in construction and engineering specialization industries globally. As an early BIM adopter and innovator, he is always looking beyond the technology utilization norms and he focuses on value delivery to his clients. His academic background is in architecture and engineering. He has a BA in Business Management and he is currently attaining a master's degree in project management with an emphasis in construction management and lean principles.

jeremiah.bowles@autodesk.com or jeremiah.bowles@therevitcoach.com

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Not All Change is good!

The premise that technology and innovation go hand in hand is a myth that plagues the profitability of many businesses. It goes along with the adage that the digital world reduces the amount of paper and that email simplifies and instant messaging simplifies communication. This whitepaper will cover two main themes:

- Identifying which improvement initiatives will be meaningful for your business to pursue
- Propose the business case for improvement and charter the initiative
- Making the change reality and reap the benefits

Recognizing Technology Innovation

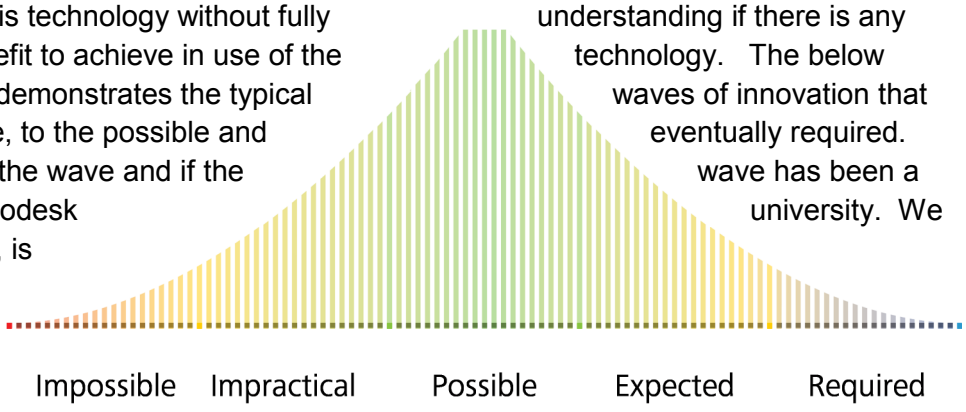
Innovation Abuse

The biggest challenge I see in the design technology field is the misuse and downright abuse of the word ***"Innovation"***.

Innovation is:

"SOMETHING NEW OR DIFFERENT SUCCESSFULLY BROUGHT INTO THE WORLD, CREATING A SIGNIFICANT IMPACT"

Many people suffer from the IBNU plague (Interesting, But Not Useful). They see a new tool, process, or technology and have to have it like it's the next big video game. But many times, there is a bigger challenge. There is **"Too much sizzle, not enough Steak".** In a recent blog post "Diagnose before you Prescribe" by a colleague Dace Campbell shared that many times what is recognized as innovation may not actually be nothing more than a distraction. Too many design professionals get enamored in the cool aspects of technology and begin to advocate the use of this technology without fully understanding if there is any tangible business benefit to achieve in use of the technology. The below innovation continuum demonstrates the typical waves of innovation that go from the impossible, to the possible and eventually required. Knowing when to ride the wave and if the wave has been a persistent focus at Autodesk university. We must ask the question, is implementing new going to be a worthwhile endeavor.



Diagnose *Before* you Subscribe!

Each company will have their own business challenges. Although these challenges (Pains) can be similar to other companies, it is a good best practice to understand the pains. This includes the pains of the business, pains of the customer, the pains of the department, etc. Solutions are not a one size fits all proposition. By understanding the pain and impact you can begin to think through what challenges you have that can be improved by innovative thinking. If you think everything (Problem) is a nail you will use a hammer (same solution) for everything.

Identify	Description	Example
Pain	• What pain(s) are you facing, in which you consider your hack a potential or ideal solution? • Be as specific as you can. • Offer as much "use case" context as you care to paint an accurate picture	• "We're thirsty
Who	• Who is having this pain, and when?	• Me, and my coworkers
Why	• What are the underlying reasons for that pain? • Is it because…?	• No convenient source of liquid while I'm working • Water leaks out of my hands when I carry it with me
Impact	• What bad things happen because of that pain? • What is the impact to you, others in your organization, or other external project stakeholders? • Is this pain causing…?	• Can't focus • Long breaks • Plummeting morale • Staff retention
Value	• What is the cost/monetary value to that pain? • How much, how many, how often does that pain occur?	• Water breaks extra 30 minutes per day, per each of 50 staff @ $100/hr = $650,000 year
Capabilities	• What new capabilities do you envision? Why? • How will those capabilities mitigate the pain you identified? • If you were king for a day, how would you solve this problem?	• Transport water in cups and bottles • Drones carrying hoses • Immersive VR simulation of river to soothe and distract

Essential Innovation Questions

Before we begin planning innovation in our business we must as ourselves a few questions. Bill O'Connor, Innovative Strategist at Autodesk shares LUMIAMI, 7 questions we must ask ourselves when we desire to be innovative, this is more of an innovative thought process.

LOOK	What could we **look** at in a new way, or from a new perspective?
USE	What could we **use** in a new way, or for the first time?
MOVE	What could we **move**, changing its position in time or space?
INTERCONNECT	What could we **interconnect** in a different way, or for the first time?
ALTER	What could we **alter** or change, in terms of design and performance?
MAKE	What could we **make**, creating something that is truly new?
IMAGINE	What could we **imagine** to create a great experience for someone?

Although these are just a great start for innovative thinking there are more.

See Appendix A for more questions to ask.

An Innovation Roadmap

Autodesk's Innovation Genome project shares 7 Phases of making innovation real.

For more info join the innovation genome lab and to begin experimentation.

Start with a brilliant description

A brilliant description is one of the most challenging aspects of being innovative. Great innovation is created all the time but if there is no vision to what this innovation solves, then nobody will be able to identify with it and want to solve it. So begin with the question, "If you were successful" what would that mean?"

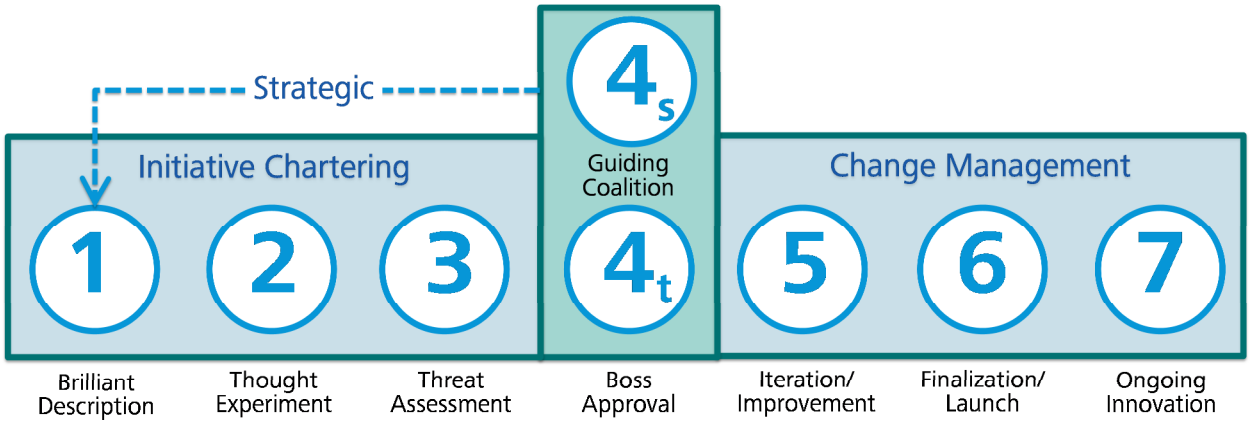
According to Bill O'Connor a brilliant description has a name that resonates with the solution; when creating this brilliant description, focus on the precision in your thinking meaning you should have precision in the language, and by having precision in the language you will create precision in the communication.

Create a brilliant description by creating a:

- Brilliant name
- One sentence
- One paragraph
- One page

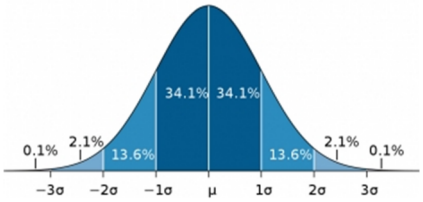
Tactical vs. Strategic Innovation

Depending on the size of the initiative you may need to scale accordingly. Tactical initiatives usually are tasks that achieve a targeted result that can be implemented in less than six months and many times easily adopted. These could be implementing a 10 step process or simplifying a process within a given department. Large innovative initiatives, usually strategic in nature will involve more than one process team and require the change many steps within a process. Strategic innovation will begin the same with require many require a more detailed charter as major funding will be required for resources including manpower, hardware, and software procurement. These usually begin in the same way (steps 1-4) and initiated by a project sponsor (or power sponsor) because it will involve many more stakeholder than one department. These large initiatives require structure and enterprise rigor usually requiring a formal change management plan. Usually these initiatives require multiple teams, multiple stakeholders, and a greater degree of risk.



After coming up with a great idea your boss may recognize the strategic nature of your initiative and require it to be re-chartered through a steering committee to provide a "guiding coalition" to ensure this solution is implemented and adopted through the business. The below diagram repeats illustrates a repeat in the initiative charter. Once the strategic initiative is re-chartered the new initiative will be ready to establish a Proof of Concept. This could go through multiple iterations and improvements to ensure it's ready to Pilot to the business. This is usually done by the steering committee as they will each be required to sponsor or re-assure their business that they have represented their needs. Strategic initiatives require the discipline of a structured change management plan and require multiple tactics to implement.

Other Improvement Methodologies



W.E. Deming a Quality Guru and leader who transformed Toyota said "work on quality, as quality improves, costs go down, when quality gets worse, costs go up". Another area to focus on our improvement is with Six Sigma techniques. Six Sigma while a reference to a statistical method in measuring variation and most known as the "Bell Curve" that we all loathed in college is also an industry recognized set of tools for process improvement. Within Six Sigma there are two methods; DMAIC & DMADV.

We use DMAIC when a product or process or product is in existence in your company and is not meeting customer specifications or is not performing adequately. We use DMADV when a product or process is not inexistence at in your company and one needs to be developed. DMADV is also appropriate when the existing product or process exists and has been optimized previously (using DMAIC or not) and still does not meet the level of customer specification.

Six Sigma Philosophy			
DMAIC		**DMADV**	
D	Define the project goals and customer (internal and external) deliverables	**D**	Define the project goals and customer (internal and external) deliverables
M	Measure the process to determine current performance	**M**	Measure and determine customer needs and specifications
A	Analyze and determine the root cause(s) of the defects	**A**	Analyze the process options to meet the customer needs
I	Improve the process by eliminating defects	**D**	Design (detailed) the process to meet the customer needs
C	Control future process performance	**V**	Verify the design performance and ability to meet customer needs

Since this is not an exhaustive undertaking of Six Sigma, I will provide reference to a few tools and techniques as appropriate for identifying the big rocks. (Focus on the Define).

Identifying the BIG Rocks?

Weather you use DMAIC, DMADV or "The 7 Phases of making innovation real" you will want to evaluate your hypothesis. In the words of the late Steven R. Covey, author of 7 Habits of Highly Effective People, we must focus on "the big rocks" to stay competitive and maintain focus on meaningful solutions and not be distracted by initiatives that won't improve profits of the business.
Here are a few Tools & Techniques to isolating (Define) the "Critical Variables":

Define tools	
• Team Charter	• Kubler Ross
• Process Maps / Flowcharts	• Stakeholder Analysis
• Value Cycle Time analysis	• Resource Plans
• Silent Brainstorm	• Includes / Excludes
• Affinity Diagrams	• Surveys / Focus Groups

Process Map, Silent Brainstorm & Cycle Time

What is a Process Map?

It is a step-by-step diagram that reveals the "hidden factory" behind the service work. It describes the process visually to identify critical handoffs, gaps, rework loops, and queues. It shows the activities needed to complete a process. You begin by getting the key stakeholders (team) together to define process suppliers, inputs, outputs, customers, and requirements. Begin by mapping out a high level process map (level 1 activity). When appropriate a deeper dive (level 2 mapping) can be done to demonstrate how each process takes inputs and converts them into outputs.

Why:

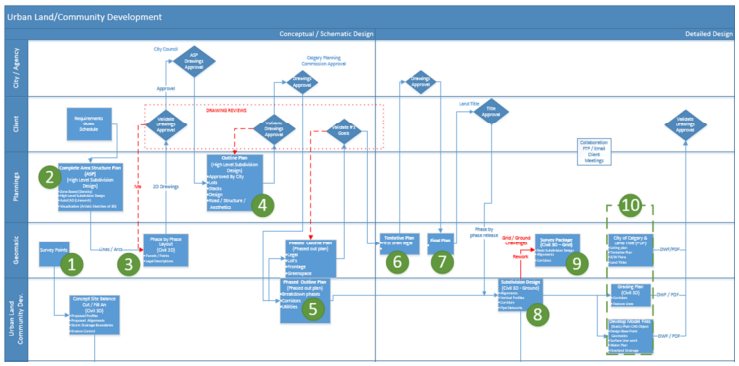
Mapping allows stakeholder groups to graphically see the systemic nature of the business process and how their processes is connect to everything else. It helps bring teams to conclusions quickly that either a process is pleasing and efficient or choppy, disconnected, and overlapped vertically. It also will draw out if there are duplicate processes being done in parallel that could be consolidated. By facilitating the creation of a process map you can bring a team consensus around where the problem is so you may begin to address the causes and begin to design a future state.

How to:

The most optimal technique is with large Post-it ® notes and a roll of butcher paper (also can use whiteboard). Don't begin by attempting to map out your future state or "ideal state" based on what you think it should look like but focus on what the "As-is" condition is. After or while you are capturing the existing process you may immediately recognize areas for improvement quickly identify it (take a red sticky dot or red post it) and number the opportunity and reference the note # with the sticky. There are two facilitation techniques that can work, one is to have a one scribe write down and others call out the next subsequent tasks (democratized), the other technique is to do a ***"silent brainstorm"***. Many times tangential processes will not be drawn out if the group begins to comment or act as authoritarian editors. It is important to understand why a process is done and that the process owner comes to his/her own conclusion that the process is either erroneous or unnecessary. The final step is to identify who the process owner is. This could be a group or ultimately responsible leader who will eventually sign off. Begin with swim lanes but eventually identify these champions in your stakeholder matrix.

Note: A white board is a good tool however; you will find it gets messy when you have to move forgotten processes. Unless you are collaborating online and are very quick with Visio avoid using digital tools that don't put the power of the pen in the palm of their hands.

Don't assume you fully understand what happens when you give it to another department. With multiple stakeholders this should be a collaborative event with multiple stakeholders.



After doing an analog process map process map it is important to digitize this in a format to simplify, and provide clear communicate. A good tool is a Visio diagram to capture in detail the information captured in the processes. Assign a number to each of the processes in order so you begin to breakdown the cycle times for greater analysis.

Include process data like cycle time in a high level process. "***Cycle Time"*** is the total time elapsed from the beginning of a process to its end. Time can not only speed up process completion, but it can reduce defects and costs by allowing time to be used more wisely and efficiently. When conducting a Cycle time analysis we can evaluate processes to determine status.

As it is important to look through the lens of the customer and what they would find valuable. A value cycle time analysis helps teams evaluate how much time is spent on value added ctivities.

Value Cycle Time Analysis

	Process Step	1	2	3	4	5	6	7	8	9	10	Total	% Total
VALUE	Value - Added											0	#DIV/0!
	Value - Enabled											0	#DIV/0!
	Non-Value Added											0	#DIV/0!
	Total											0	

Not all tasks that are non-value add are bad, but many of these tasks can have high levels of variability and can either be eliminated or automated for efficiency.

Value Cycle Analysis	
Value Added	Customer would pay for this step
Value Enabled	Creates value for the business (QA/QC, Regulatory, etc.)
Non Value Added	Can be eliminated / automated

TIME	Process Step	1	2	3	4	5	6	7	8	9	10	Total	% Total
	Work Time											0	#DIV/0!
	Wait Time											0	#DIV/0!
	Total Time	0	0	0	0	0	0	0	0	0	0	0	

By understanding the cycle times, you can begin to see which activities take up the most amount of time, helping you to better understand the magnitude of effort taken for each phase.

Cycle Time Analysis	
Work Time	Average time to complete task
Wait Time	Avg. time waiting for another task until you can begin work again.
Total Time	Work time + Wait Time

Pareto Chart

After doing a Process Map and assigning a Value Cycle Time analysis you can review these tasks to evaluate which tasks provide the most meaning and value to the customer and evaluate if these are meaningful improvements. Tasks that are non-value add can be potentially removed or automated to maintain consistency and reduce variability.

Stakeholder Analysis

A Stakeholder Analysis enables you to outline who has a vested interest in how a process performs. Remember that stakeholders do not receive the product or service. It helps you determine how and when to reach out and communicate with stakeholders to build buy-in, which is critical to a project's success. Understanding your stakeholders is the most important part of developing a solution. Each stakeholder will have their view or lens they will look through.

Strategic Project (or Initiative) Charter

Before you begin planning grandiose plans for your major improvement project you will want to evaluate if your initiative is meaningful. I've heard it say, the initiative should ***"be big enough to matter, small enough to win".*** Identifying the big rocks is usually a multi-pass approach.

Change Management

Much of the framework of Change Management is part of steps 6 & 7 of the innovation roadmap. The Kotter 8 steps of change management can overlay inside the innovation roadmap.

Establish a Sense of Urgency

Along with your "brilliant description you will need to create some urgency around this scenario. This usually involves drawing out the pain or cost of doing nothing. This is done by first understanding the magnitude of the problem. This may have been brought out in the process map or value cycle time analysis.

A brilliant description consists of two elements a *great problem statement* and a *solution description*. The great problem statement should create some urgency, the solution description describes the how what, when & why and should answer the problem. The problem statement should include; when, why, magnitude and impact. If done correctly the problem statement will create some urgency to require your business leader to act.

A bad problem statement would be:

- We need BIM to present models and create drawings in a new way.
- We need model based workflows were doing more projects this year.

A good problem statement is:

- In 2014 (when) we developed 120 subdivisions phases. Each phase must be redrawn separately . . . taking 40 hours of rework with our current 2D drawing methods (What). This year we anticipate 240 phases (Magnitude). If we do not adopt model based workflows we will potentially lose $560,000 in profitability due to rework (Impact).

Solution Description will come from your original Brilliant description; it will precisely describe what the solution will accomplish. This will take several revisions to ensure the tone, and vision is and how it solves the problem. You will want to have a one sentence, one paragraph, and one page descriptions to help sell to your audience so that the vision is the same no matter who reads of your initiative.

Establish a Guiding Coalition

Meaningful initiatives are not done alone but in a sand box. The key outcomes of this step would be to identify those with the ability and political will to help move this initiative forward. Some Power Sponsors will require you to report to a steering committee, this committee is not the same committee that will help this initiative move along. A guiding coalition helps establish governance and unified purpose to help each other with the change with a shared commitment to act. The importance of this step is to get multiple stakeholders from multiple levels to provide; input and buy in to create a shared vision, strategy and agreed upon roadmap.

Activities:

- Identify key stake holders who can effect change
- Identify process owners if the stakeholders are not the process owners
- Identify if they have the credibility, expertise, leadership, power, leadership, to influence
- Understand and can effectively communicate urgency to various stakeholders
- Form and align the team

Define a Change Vision

In this step we define the change vision strategy and roadmap and document and agree upon the best timetable for accomplishing our objectives. The key outcome of this step is to create a vision that each stakeholder group will understand that will empower them to want to act.

Activities:

- Define and document outline vision of solution
- Understand expected benefit(s) of solution
- Define high level roadmap & milestones
- Define Success Criteria

Defining a Vision

A vision is a picture of the "preferred future;" a statement that describes how the future will look if you achieve your ultimate aim.

Vision Example:

Deliver world class, high quality projects to reflect (Company x) in an environmentally responsible way that enables us to maintain profitability and better stewardship over the earth.

Define a Roadmap & Milestones

A roadmap is a high level list of activities (Level 1 WBS) that define what needs to happen to have success. Can you break down the project in multiple phases or does it all have to change all at once.?

"PICK BATTLES THAT ARE BIG ENOUGH TO MATTER, AND SMALL ENOUGH TO WIN"

JONATHAN KOZEL

When you are defining your roadmap, ensure you have milestones along the way to do lessons learned and to celebrate success. Teams can lose focus and energy when we have not stopped to reflect on what we did right, what we did wrong and what needs improvement. Having your project sponsor celebrate that the team is having success can bring much needed vigor when the team is struggling.

Defining a Problem / Goal & Objective Statements

A better example could be:

Goal Example:

- Attain 3 new projects by implementing improved visualization and model based workflows to achieve 15 million in new revenue.
- Improve efficiency through the use of model based workflows by 3% and reduce costs by $300,000 / year.

Objective:

- In 2015 develop workflows between Revit, Infraworks, and 3DS Max to improve project win rate and competitive advantage by differentiation to win 3 projects.

Establish Success Criteria

The teams need to understand what success looks like and how to recognize success. These

http://www.pmi.org/Learning/next-level-up-how-do-you-measure-project-success.aspx

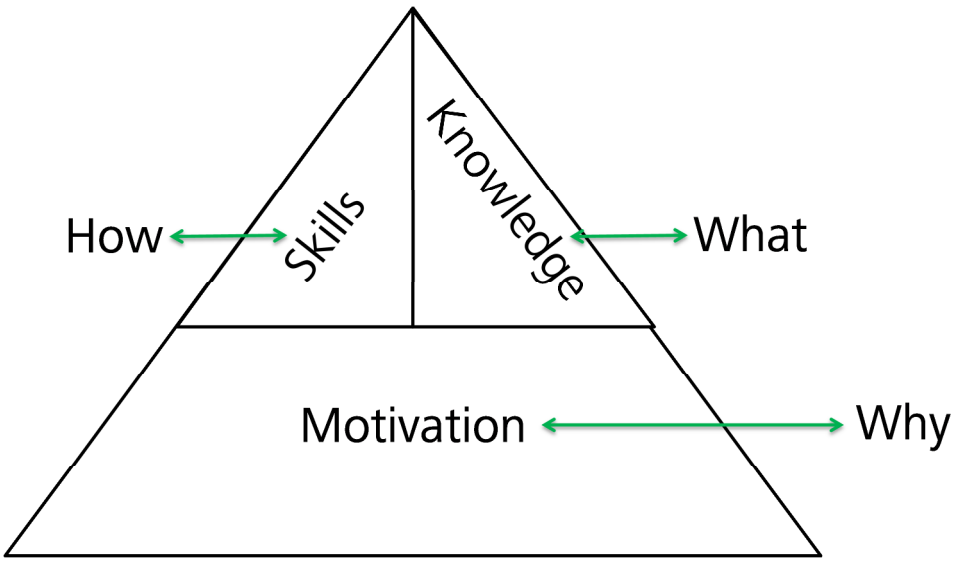
Communicating the Vision and Beyond

In this step we focus on how and what is being communicated. The key outcome of this step is to ensure each stakeholder group agrees upon best avenues to communicate and the vision is translated to the various audiences. The success of this step is dependent on each stakeholder feeling they will be impacted for the better and has a desire to implement the change.

Activities:

- Establishing a communication plan
- Understand Stakeholders and Communication channels (marketing mix)
- Defining modes of communication
- Scheduling Communication
- Defining needed / reoccurring Communication

Dimensions of Communication



Empowering people to act the vision

Leaders must change the systems or structures that undermine the change vision and remove obstacles to change. They should also encourage risk taking, non-traditional ideas, activities and actions. It is essential that leaders remove as many barriers as possible so that those who want to make the vision a reality can do so.

Activities:

- Give freedom and direction
- Give permission to find their own team driven solutions
- Encourage different views, different perspectives
- Encourage taking risks
- Affirm and redefine vision as necessary to make room for other ideas
- Transparency
- Teamwork & collaboration
- Provide access to experts
- Provide training and support
- Set short term goals & plans

Generate Short Term Wins

Create visible, unambiguous successes connected to the change efforts as early as possible demonstrates success in the initiative. It also dismantles naysayers and resistors from saying otherwise. In this step we focus on demonstrating success and ensuring, focusing, and reinforcing the scenario to create a win. This includes establishing a Proof of Concept (POC), working with early adopters, and pilot project testing. The key outcome of this step is to have conducted a “Pilot” and “fit for purpose” and document value of success achieved in the Pilot.

Activities:

- *Build Solution*
- *Actively Run and track the pilot*
- *Manage resistance*
- *Review Pilot / Proof of Concept*
- *Understand benefits realised (quick wins)*
- *Communicate Results (Success stories)*

Consolidate and build on the gains

In this step we focus on integrating the improvements into standard business practice. The key outcome of this step would be to have updated business standards, workflows, and accountabilities. This could include Standard Operating Procedures (SOP's), standards, and elimination of existing work processes that no longer exist in the new workflow.

Activities:

- *Understand impact of changes on QA system*
- *Agree how to incorporate changes*
- *Identify additional projects to use*
- *Manage resistance*

Institute the Change

Actions speak louder than words. If you truly believe that you are having success and you are communicating this, when times get tough, ensure your actions don't reflect otherwise. Hire, promote, and develop people who can implement the change vision. Encourage goal setting for professionals that would be your change agents.

In this step we focus on adopting the initiative across the business. The key outcome of this step is to demonstrate adoption of new standards, procedures, and solutions. This step will also include sharing and evangelizing the success that the business has achieved and enable your team to have credibility for working on future projects.

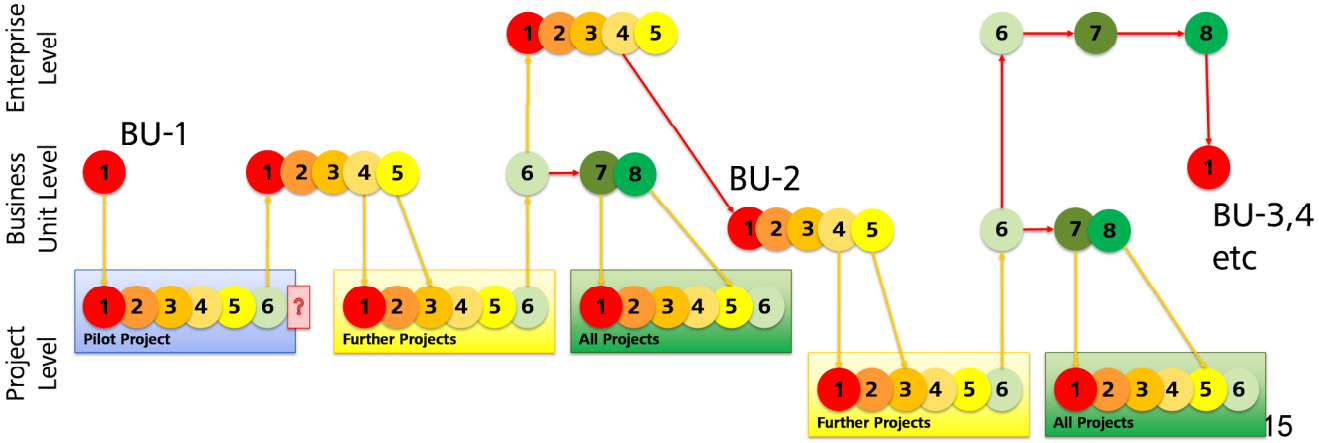
Activities:

- *Audit project delivery and check compliance*
- *Manage resistance*
- *Identify further improvements to explore*

Tools & Techniques

- *Communities of Practice*
- *Weekly Lunch & Learns*
- *Mentoring Programs*

Sample Corporate Implementation Plan



Appendix A – Innovation Genome Additional Questions

LOOK	**HIGHER** What could we look at from a HIGHER level?	**REVERSE** What could we REVERSE or look at inversely?	**VALUES** What VALUES could we switch? (Bad/Good)	**KID** How could we look at this like a KID would?	**IGNORE** What could we IGNORE that everyone "knows is true"?	**HOLISTIC** How could we look at this in a more HOLISTIC way?
USE	**LEVERAGE** What could we LEVERAGE better, or for the first time?	**FOUNDATION** What could we use as a FOUNDATION for something else?	**SUBSTITUTE** What could we SUBSTITUTE for something else?	**ASPECT** What new ASPECT of something could we use?	**APPLY** What could we APPLY in a new way or context?	**CHANGE** What could we CHANGE and then use differently?
MOVE	**IMPORT** What could we IMPORT from another field or realm?	**REARRANGE** What could we REARRANGE or reconfigure?	**REPLACE** What could we REPLACE with something else?	**REMOVE** What could we REMOVE altogether, to help us streamline?	**SPEED** What could we SPEED up or slow down?	**FREQUENCY** What could we make happen more/ less FREQUENTLY, or at different times?
INTERCONNECT	**POWER** What could we use to POWER something else?	**COMBINE** What things could we COMBINE to make a new thing?	**NETWORK** What could we turn into/make more like a NETWORK?	**TRANSPARENCY** What could we make more TRANSPARENT, connecting us with more information?	**OPEN** What could we make more OPEN to enable co-creation?	**PARTNERSHIPS** What people or groups could we form new PARTNERSHIPS with?
ALTER	**QUALITY** How could we radically increase QUALITY?	**DESIGN** How could we change/improve the DESIGN?	**PERFORMANCE** How could we change/improve the PERFORMANCE?	**AESTHETICS** How could we make this more beautiful, improving the AESTHETICS?	**EXPERIENCE** How could we improve the overall EXPERIENCE?	**STANDARDIZE** What could we STANDARDIZE/align/ unify to make things better?
MAKE	**PROCESSES** What new processes could we create?	**MEANING** What new meaning could we create/infuse?	**HARNESS** What could we harness to make something new?	**INSTANTIATE** What could we instantiate into something new?	**FUNCTIONS** What new functions could we create?	**SPECIALIZE** What could we make more specialized, and focused?
IMAGINE	**AMPLIFY** What could we amplify or increase?	**EASIER** What could we make easier, or more fun?	**NEGATIVES** What negatives could we get rid of?	**CRAZY** What CRAZY idea could we try that just might work?	**SCI-FI** What could we learn from Sci-Fi?	**TRY** What could we just TRY, to see what happens?