Innovation – Made “Easy”

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Why Think Innovatively?

Definition (One of Many)

- The process of creating, capturing and developing new ideas into new ways of working or creating **value**.

What Value Do These Create?

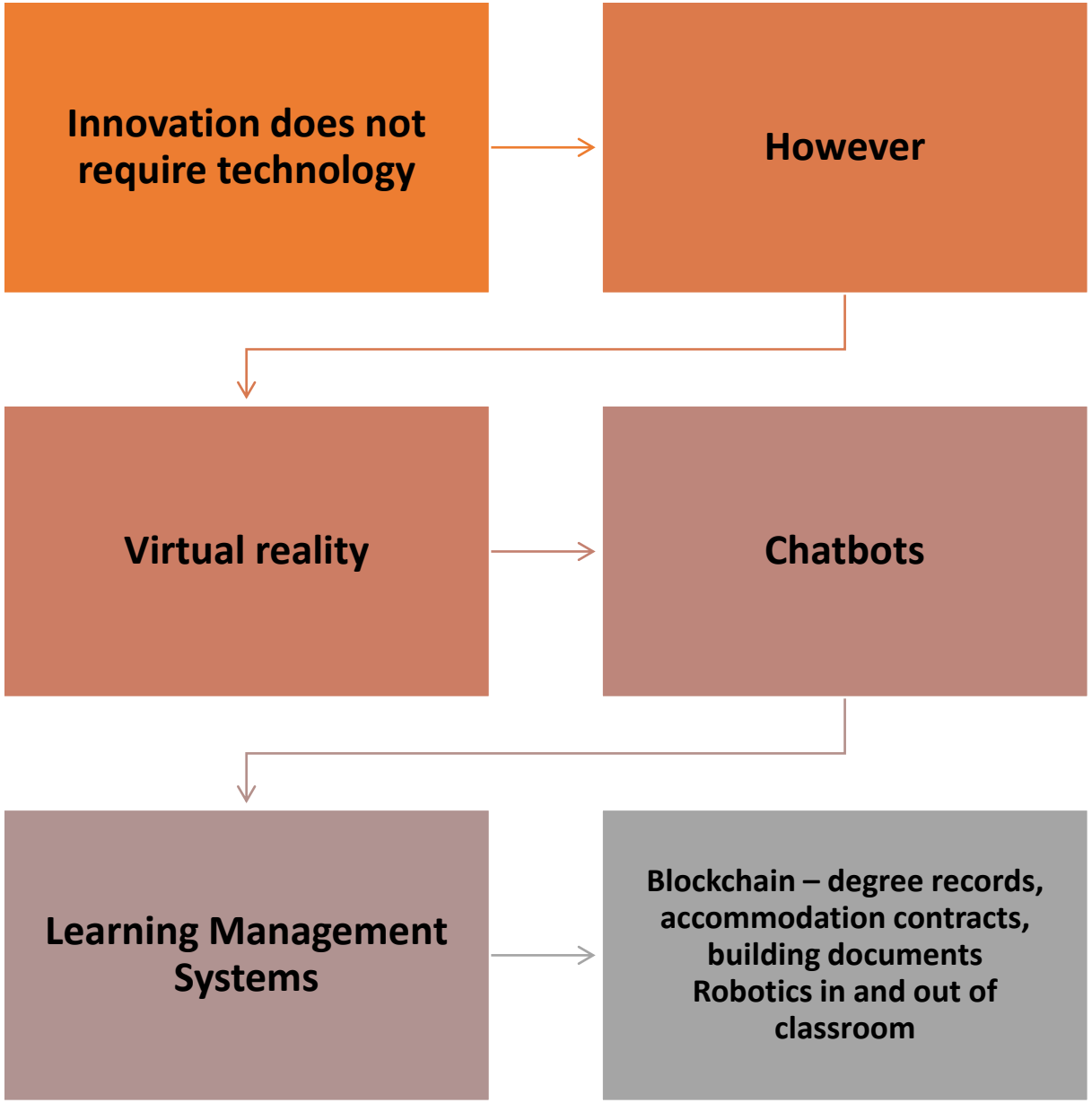
How Could You Add More Value?

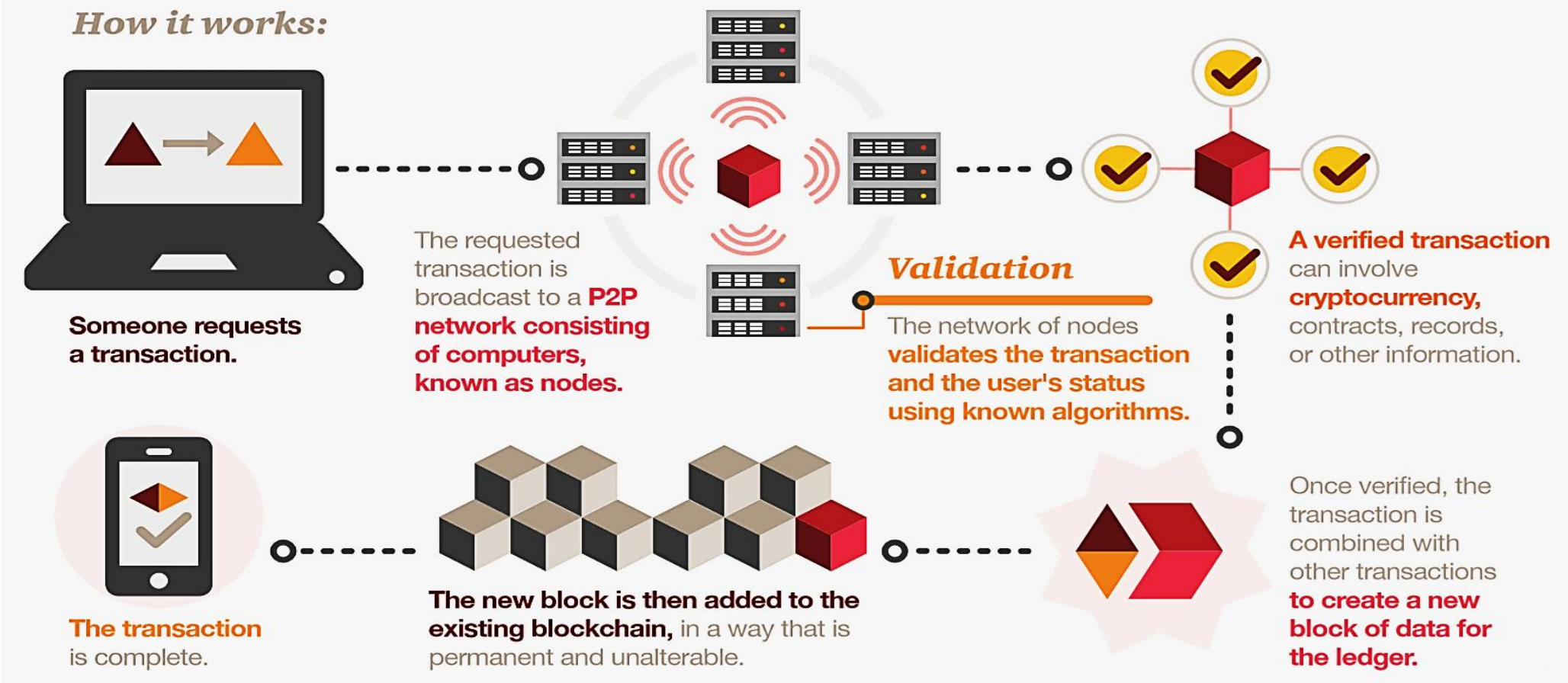
- What value does your team add?
- Do any potential opportunities to add more or new **value** seem possible after today?
- What barriers will you face?

In Higher Education

- New pedagogies
- Smart campuses – possible to be first with features as technology develops
- Virtual and augmented reality

Robotics and AI/Deep Learning





Blockchain

- Blockchain is a cloud-based permanent digital distributed ledger of activities between agreed parties.
- Blockchain is a machine validated recording process that allows for recording any transaction. All transactions are stored chronologically either publicly or privately and are permanent.

What is a Transaction?

Deep Learning

- Deep learning uses algorithms loosely modelled on the way human brains work.
- Training with large amounts of data is what configures the neurons in the neural network.
- Deep learning models take in information from multiple data sources and analyze that data in real time, without the need for human intervention.

Deep Learning

- News aggregation and fraud news detection
- Prediction of applications/acceptances
- Identification of students who might leave before graduating
- Allocate marketing spend on students most likely to apply and succeed
- Fraud detection
- Energy monitoring and measurement and verification (M&V)
  - observes & then predicts optimal energy for weather and occupancy – learns from feedback
- Optimise (predictive) cleaning and security schedules
- Facial recognition security
- Predictive maintenance is thought to be twice as effective as preventative maintenance
- Space management

Chatbot AI

So much more than a chatbot

Our powerful AI chatbot can understand what your customers want, respond intelligently and even instantly resolve requests. Combine that with deep integration into all the tech you already use and you have a superagent that can provide personalized, 24/7 support in 109 languages.

Contact sales

- You pre-program where in a database to find answers to specific questions
- The chatbot uses AI to provide other information if requested
- It learns from the users response and learns what typically gets asked
- If you make the database more extensive, the options increase

ideation

/ˌʌɪdɪˈeɪʃ(ə)n/

noun

the formation of ideas or concepts.

Listen To Service Users - Monitor Their Actions

No, honestly.

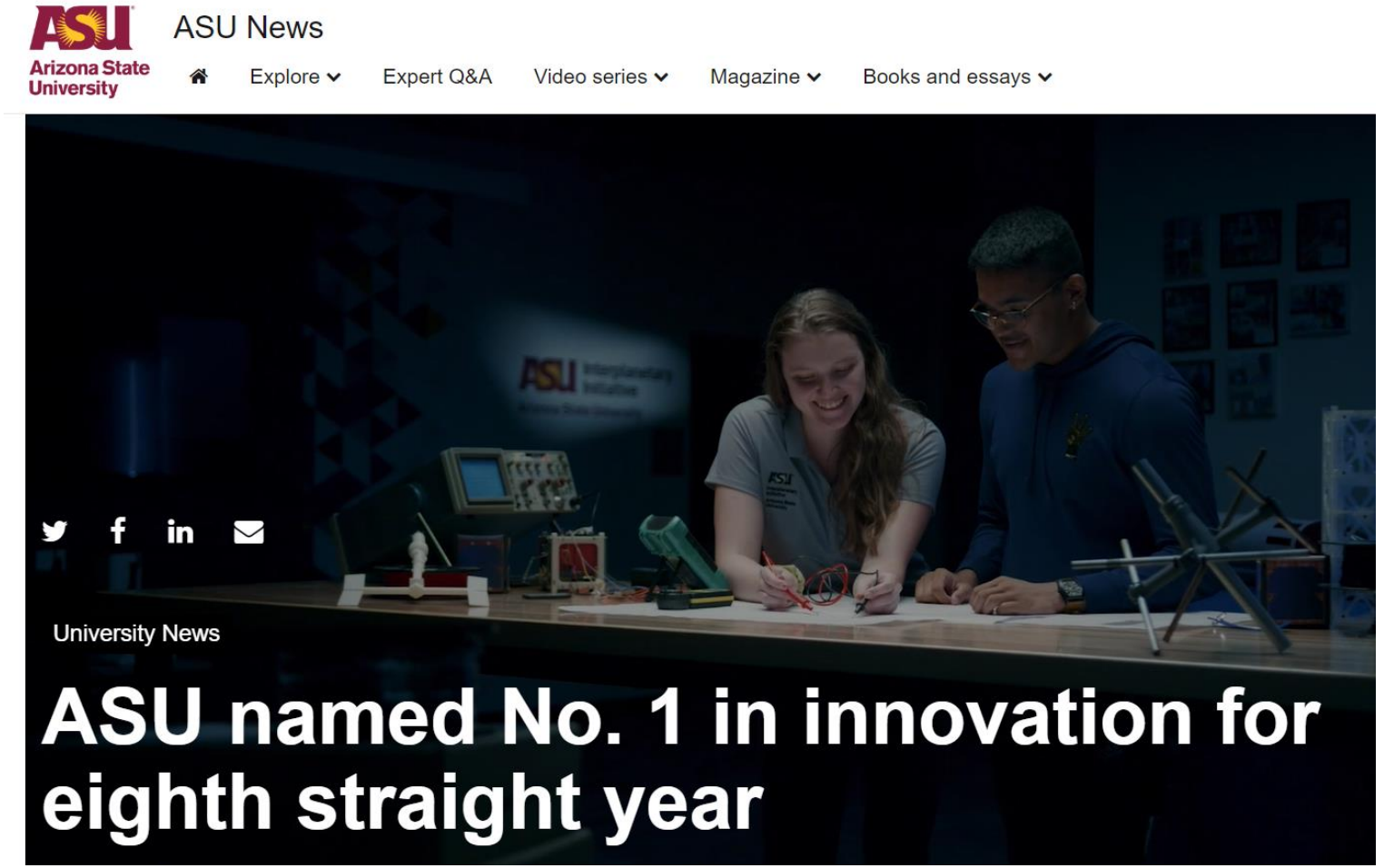
We aren't trying to make a fool of you.
This isn't a product of our imagination, it's a product of the Volkswagen plant in Wolfsburg.
The Harlequin, as it's called, started life as a car show gimmick to indicate the colours available.
Of course, the orders flooded in.
We dutifully started producing the multi-coloured mavericks, each with a colourful array of features.
Among them, a driver's airbag, engine immobiliser, height-adjustable steering column and electric, heated door mirrors.
Since bowing to public pressure, however, we haven't had a moment's peace.
You demanded a Polo with a bigger sunroof. You got the 'Open Air'.
You insisted on a boot. You're getting the Polo Saloon.
So please, we've done everything you asked of us, now give us a break.
There are thirty-eight different models in a range starting at £7,760. One of them must be right.
We've even made one that runs on rabbit droppings.

The Polo Harlequin.

MODEL SHOWN ONE OF 4 COLOUR VARIETIES. PRICE £10,074, INCLUDING NUMBER PLATES, DELIVERY AND 12 MONTHS' ROAD FUND LICENCE. FOR MORE DETAILS, CALL 0800 331666.

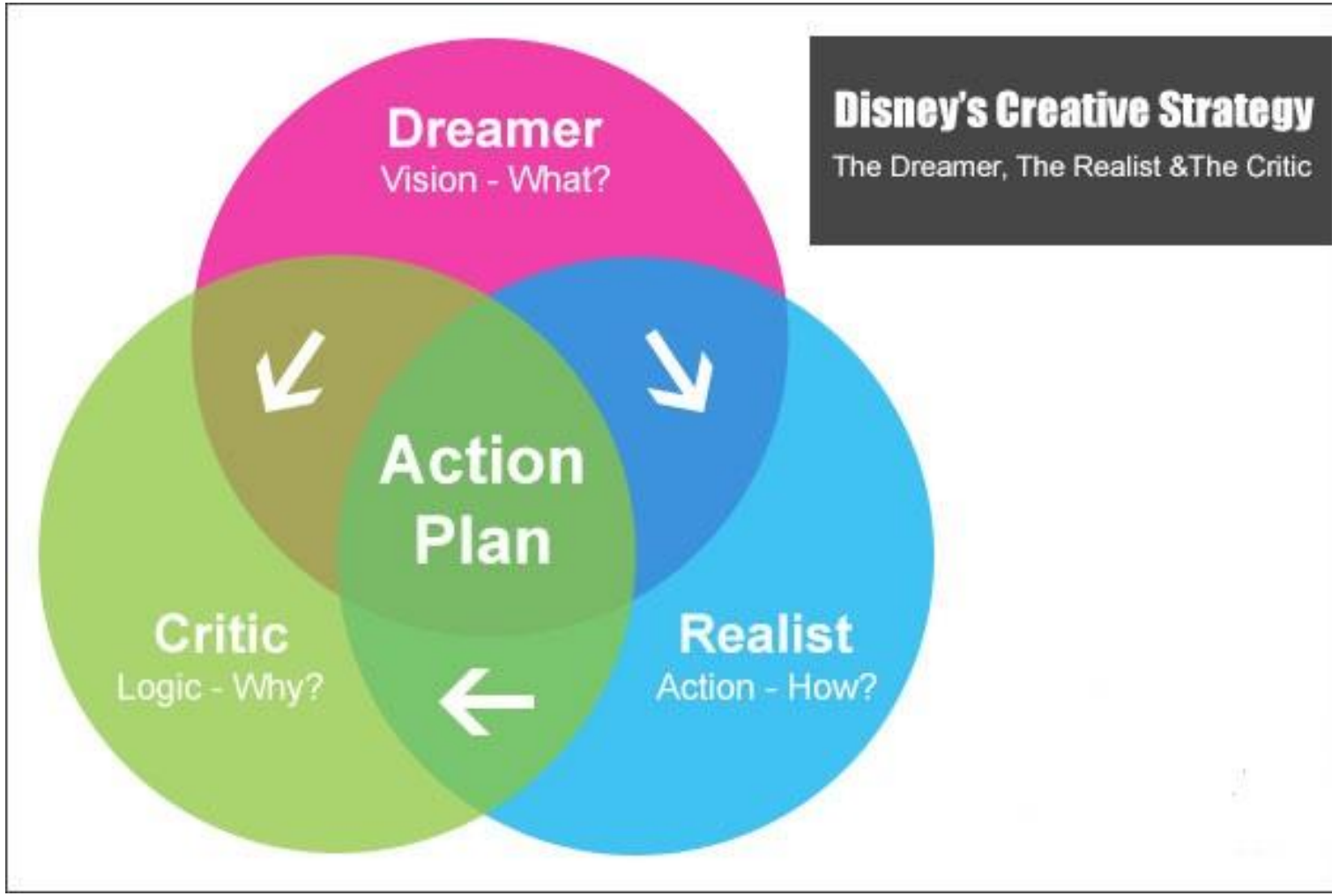
Simply Spot Trends

Copy or Exceed the Innovations of Others



- https://news.asu.edu/20220911-university-news-asu-no-1-innovation-us-news-world-report-eighth-year

Sometimes Ideas Return as New



Disney Technique

The Dreamer

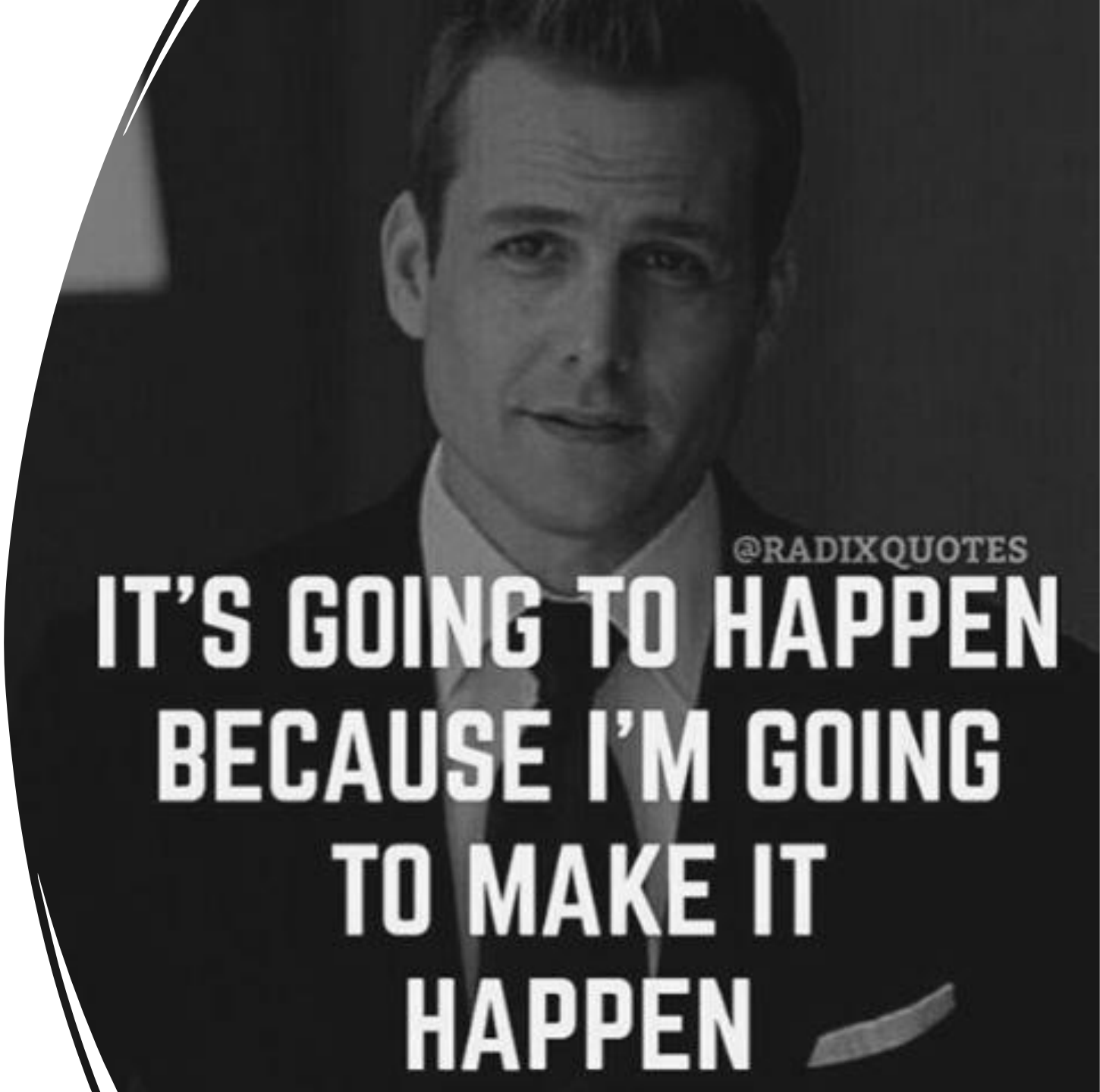
- Takes an idea or creates an idea and sees no reason why it can’t be done. Anything is possible, barriers do not exist.

- They act without limit or judgment. Nothing is censored. Nothing is too absurd or silly. All things are possible for the dreamer.

The Realist (Doesn’t Speak Until Dreamer Finished)

- The realist is totally focused on making the idea happen within the existing real limits.

- How can I make this happen? What are the features and aspects of the idea? Can I build ideas from the features or aspects? What is the essence of the idea?



The Critic

- What are the Pros (+) and Cons (-) of both their views?
- What could go wrong with their ideas.
- The critic keeps quiet until the Dreamer and Realist look like they have an idea that might progress.

Separate These People

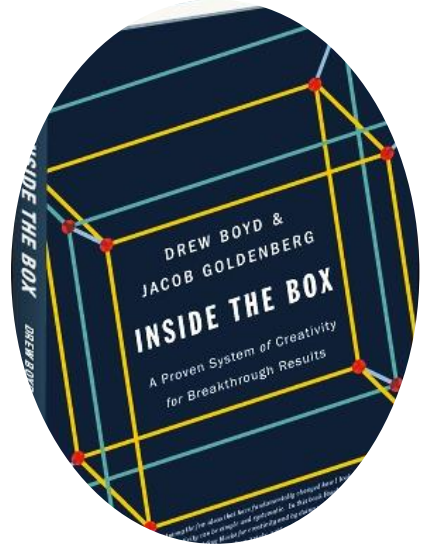
- A common reason why ideas do not form is that teams have all three talking at once.

- Separating them (Disney had them in different rooms) means they assist each other rather than kill off the dreamers idea.

Technique - Systematic Inventive Thinking (SIT)

Systematic Inventive Thinking is a new innovation method developed by Dr. Jacob Goldenberg (Columbia University).

Innovation follows a set of patterns that can be re-applied to any product, service, or process.



Product or Service

- The SIT process talks about products.
- It is easier to understand when you think of a product that has components. Some are essential, some are less essential.
- Some of those components will have always been there, but are they still needed?

- **A service or process also consists of components** – there are steps in the process. Some are essential, some are less essential.
- Some of those steps will always have been there, but are they still needed?

Process Components

- Food is cooked
- Food is laid out
- Food is provided to meet dietary requirements
- Food is handed over
- Money is taken
- Change is given
- Card payments are taken
- Coffee is made and handed over
- Tables are cleaned
- Information about ingredients is given
- Unruly students are chucked out

- Etc etc

Closed World Solutions

- Tables
- Staff
- Students
- Till
- Chairs
- Wi-Fi
- Windows
- Food counter
- Fridges
- Coffee machine
- Price menu
- Entry door
- Hatch for depositing trays
- Kitchen facilities
- Washing up facilities

Services

- Uber, Just Eat, Deliveroo etc, assume you already have a smart phone
- Leaving a parcel with a neighbour rather than taking back to the depot, is utilising something that is likely to be there
- Hairdresser at your home assumes you have a sink
- The guy who trims my trees fills my brown garden refuse bin

- What else can we assume your service users will have to hand?

Systematic Inventive Thinking

Subtraction	The elimination of core components rather than an addition of new systems and functions
Task Unification	The assignment of new tasks to an existing resource within the vicinity of the problem
Multiplication	A multiplication of elements already existing in the product along with a qualitative change
Division	The division of a product and/or its components either physically or functionally
Attribute Dependency	The creation/removal of dependencies between existing product properties.

Subtraction

“The elimination of core components rather than an addition of new systems and functions”

Subtraction

1. List internal components
2. Remove one essential component
3. Visualize the resulting virtual “product”
4. Identify potential user needs
5. If necessary, replace function with something from Closed World (that will be close by anyway)
6. Modify new “product” to improve it

Systematic Inventive Thinking (subtraction)

Take Away A Key Component

Food

Lecturer


4X4
AUSTRALIA


Guitar Store
INPUT VOLUME TREBLE BASS REVERB LEAD LEVEL MASTER
TO ARRANGE A
EST VISIT
RTERED ACCOU


Nestlé
KitKat
Have a break


98.6°F
Summer

Task Unification

“The assignment of new tasks to an existing resource (i.e. any element of the product or its vicinity within the manufacturer’s control)”

Task Unification

1. List “product’s” internal/external components
2. Assign an additional task to one component
3. Visualize the resulting virtual “product”
4. Identify potential user needs
5. Identify potential challenges
6. Modify “product” to improve it

Multiplication

“A multiplication of elements already existing in the product along with a required adjustment - “Qualitative Change”.

Take Something You Do Once & Multiply

Multiplication

1. List components
2. Multiply a component
3. Change the multiplied component
4. Visualize the resulting virtual “product”
5. Identify potential user needs
6. Modify the “product” to improve it

Division

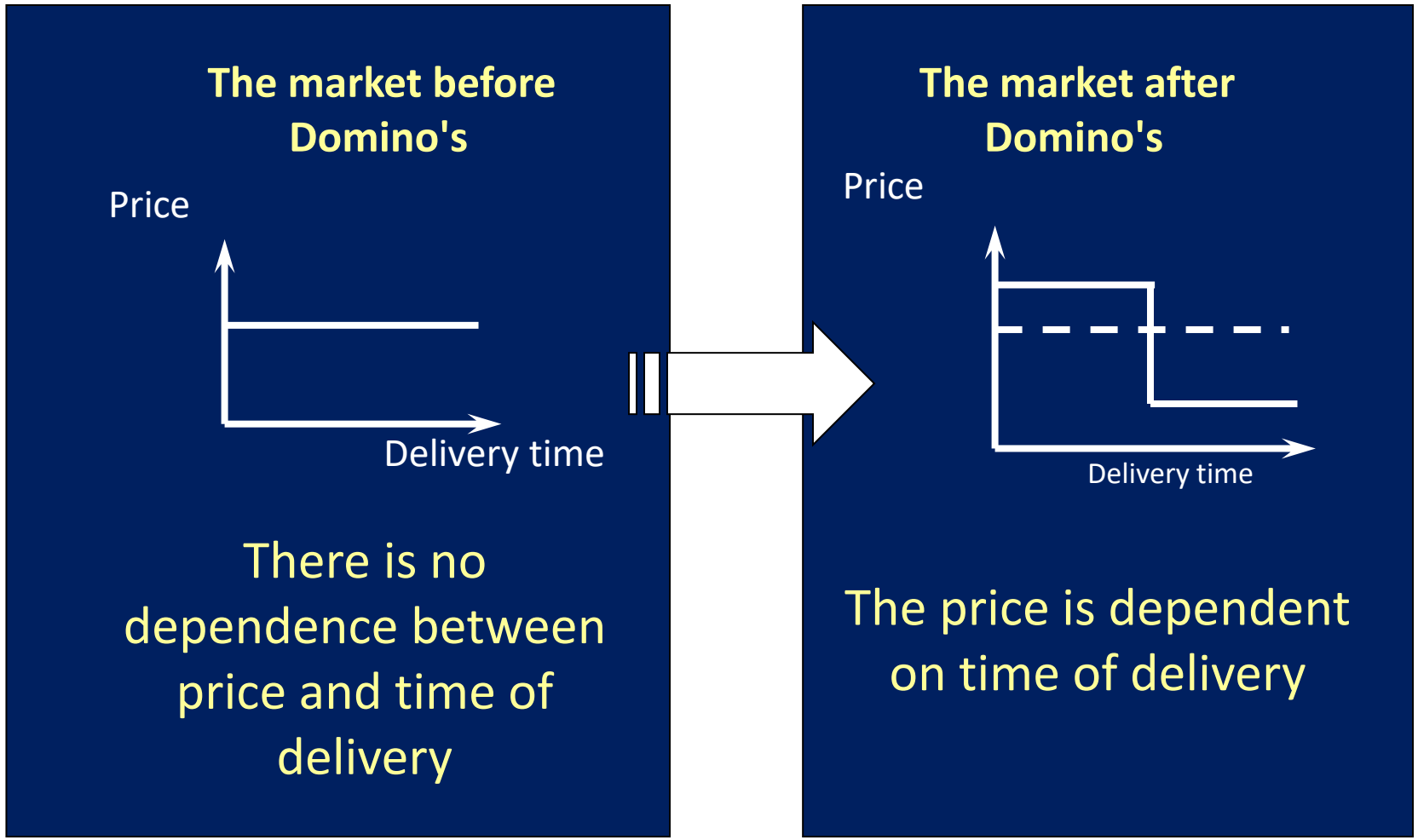
“Dividing a “product” and/or its components functionally or physically and then rearranging them.”

Division Creates New Product – Not just Smaller One

Division

1. List “product’s” internal components
2. Divide the “product” and/or one or more components:
   - Functional (divide along functional role)
   - Physical (cut along any physical line)
   - Preserving (each part preserves the characteristics of the whole)
3. Visualize the resulting virtual “product”
4. Identify potential user needs
5. Modify the “product” to improve it

Domino’s Pizza Delivery



Attribute Dependency

1. List internal/external variables
2. Pair variables (using a 2 x 2 matrix)
   - Internal/internal
   - Internal/external
3. Create (or break) a dependency between the variables
4. Visualize the resulting virtual “product”
5. Identify potential user needs
6. Modify the “product” to improve it

After This Conference - Use The SIT Techniques

- Use your list of process or service components and think about real world solutions.
- Then subtract, multiply, divide, unify or change an attribute's relationship.

The Edge – Amsterdam

https://www.bloomberg.com/news/videos/2015-09-23/see-the-world-s-greenest-office-building-the-edge

- Workspaces assigned to your preferences as you arrive
- Lighting panels adapt to your preferences
- 120m borehole warms water in summer to heat building in winter
- Everything from screens to doors, to food is enabled by your phone app and by recognizing you as you arrive
- Robotic security

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