

# Innovation

How much do we want?

Or

The **Tension** between  
the **Demand for Innovation** and  
an **Effective Development Process** in  
a **Sustainable Business**

*Keith Alexander 24/1/2017*

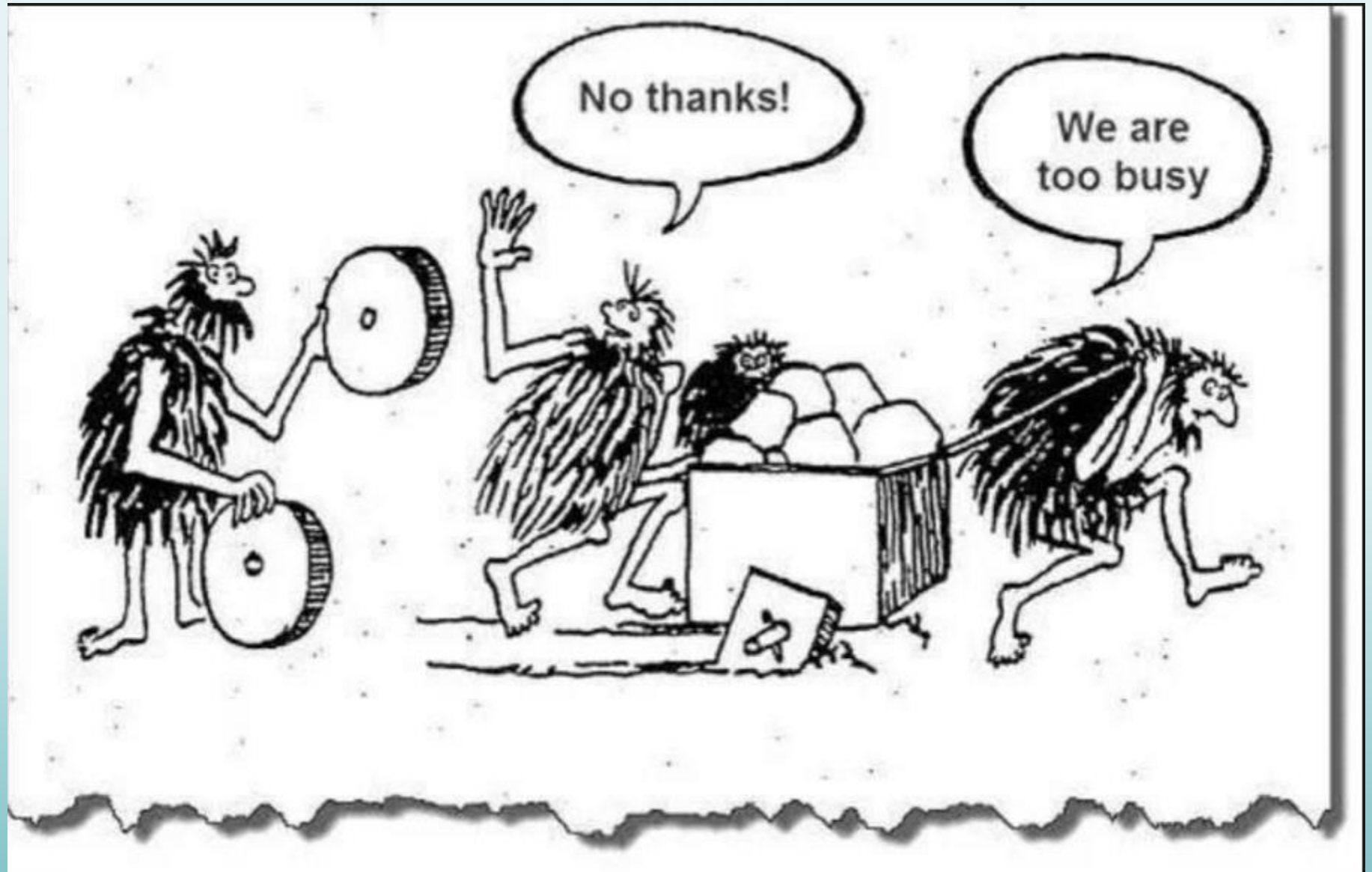
# Overview

1. Why Innovate?
2. Innovation: Definitions and concepts
3. Ideas: Generating & Selecting them
4. Taking innovations from idea to market
5. How much Innovation? Protecting the core business.

*(Interspersed with illustrations)*

# 1. Why Innovate?

- We must grow. Remaining static is not an option.
- Innovation is one of the ways we can grow
- The competition will overtake businesses that do not adapt, innovate and grow
- Customers value choice and novelty (usually)



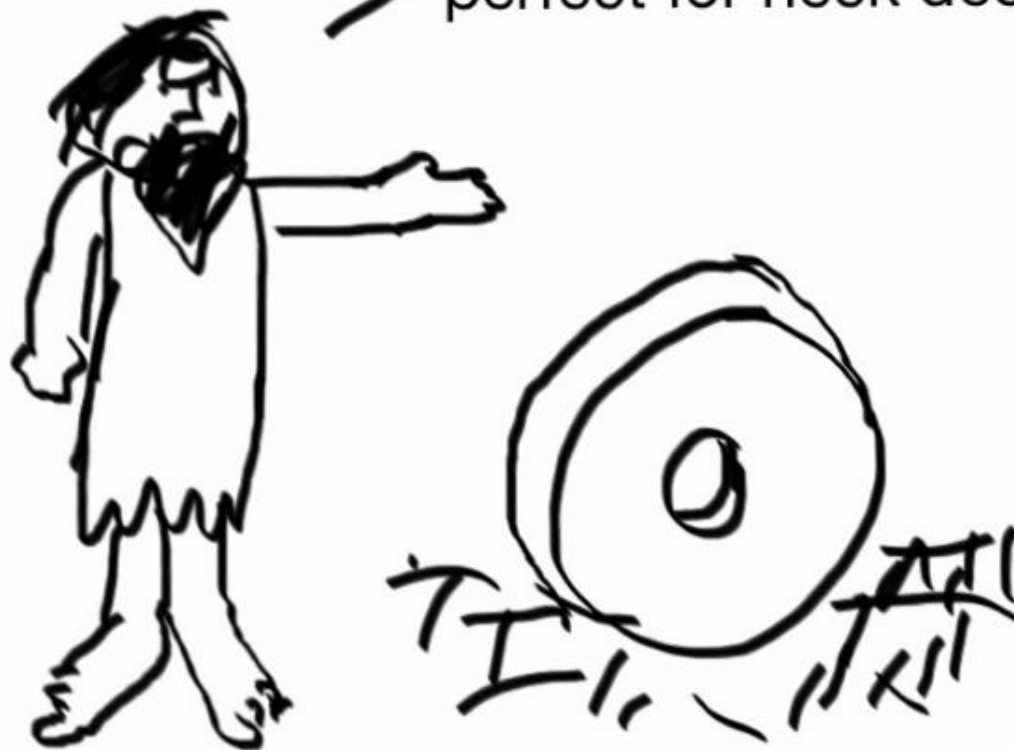
# 2. What is Innovation?

## Some definitions

- *the process of making improvements by introducing something new*
- *the successful exploitation of new ideas* (Department of Trade and Industry, UK).
- *The process of turning an idea into a commercial product* (Darin Graham NZi3 director)
- *A creative idea that is realized* (Frans Johansson, Harvard Business School Press, 2004)
- *In economics, business and government policy, - something new - must be substantially different, not an insignificant change. In economics the change must increase value, customer value, or producer value. Innovations are intended to make someone better off, and the succession of many innovations grows the whole economy. (Wikipedea)*
- *Providing value for customers* (Matthew Journee Cii)

freshspectrum.com

I call it...hole in circle rock  
— perfect for neck decoration



Invention is only the first step towards innovation

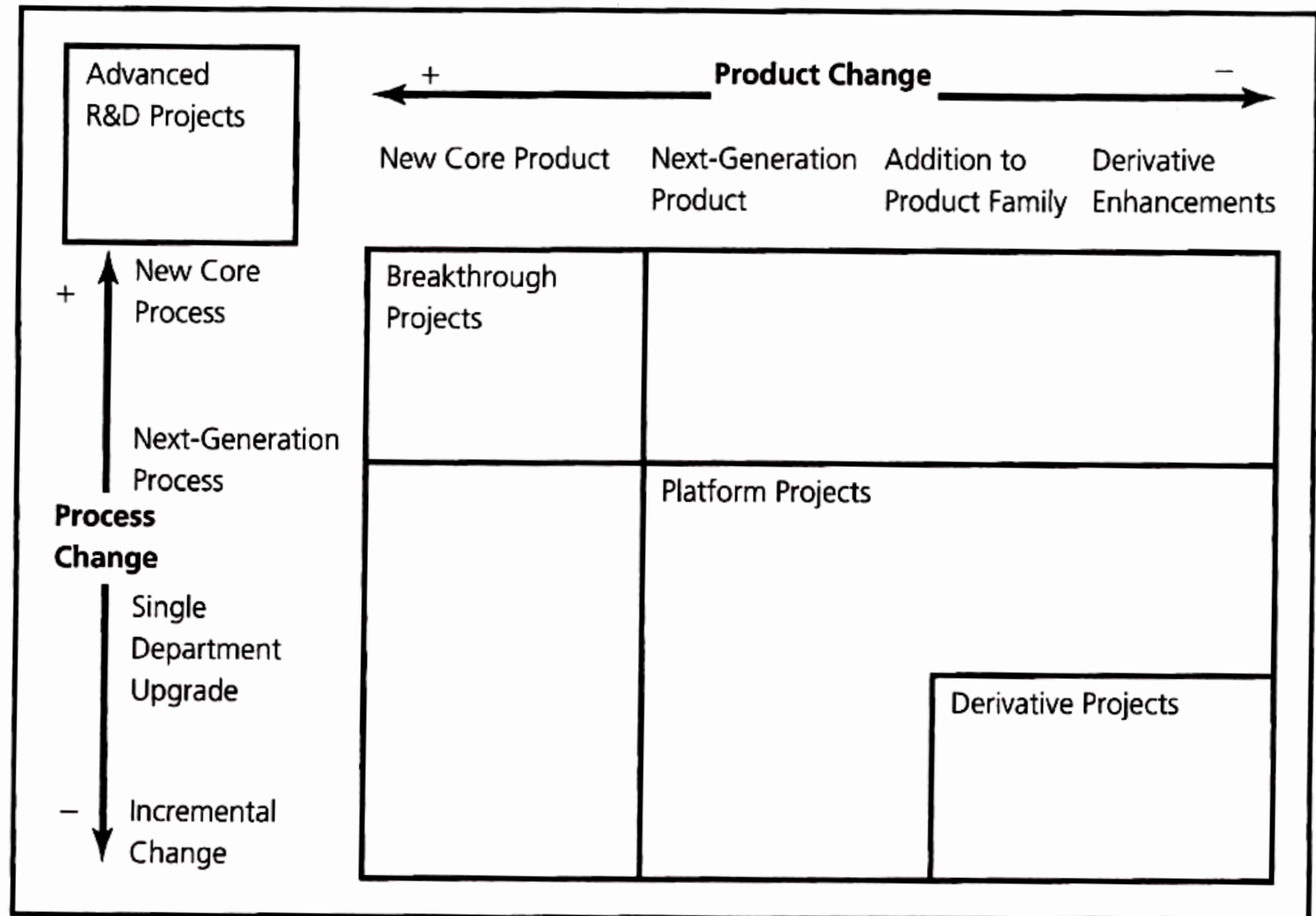
# 2. What is Innovation?

## Some aspects

- Spectrum from minor changes to New-to-the-World products
- Evolutionary vs Revolutionary
- Incremental improvement vs Disruptive change
- Low Market Risk vs High Market Risk
- Technology focused vs Customer focused
- Technology Push vs Market Pull
- Routine to implement vs Impossible to implement
- Short time to Market vs Long time to market
- Fast to catch on vs Slow to catch on
- Successful vs Unsuccessful

# Types of Product and Process Innovation

(Wheelwright et al "Revolutionising Product Development")





# *Examples of Disruptive Innovation*

*(Utterback "Mastering the Dynamics of Innovation")*

Each new innovation rendered the predecessors obsolete

Typewriters	<ul style="list-style-type: none"><li>• manual</li><li>• electric</li><li>• word processors</li><li>• personal computers with word-processing software</li></ul>
Ice and refrigeration	<ul style="list-style-type: none"><li>• harvested ice</li><li>• machine-made ice</li><li>• electromechanical refrigeration</li><li>• aseptic packaging</li></ul>
Lighting	<ul style="list-style-type: none"><li>• candles and oil lamps</li><li>• distilled gas</li><li>• incandescent electric lamps</li><li>• fluorescent lamps</li></ul>
Plate glassmaking	<ul style="list-style-type: none"><li>• crown glass</li><li>• cast glass</li><li>• float glass</li></ul>
Photography	<ul style="list-style-type: none"><li>• daguerrotype</li><li>• tin type</li><li>• glass plates</li><li>• dry plates</li><li>• celluloid roll film</li><li>• electronic imaging</li></ul>

## 2. What is Innovation for GOBA?

For Discussion Later

# 3. Generating & Selecting Ideas

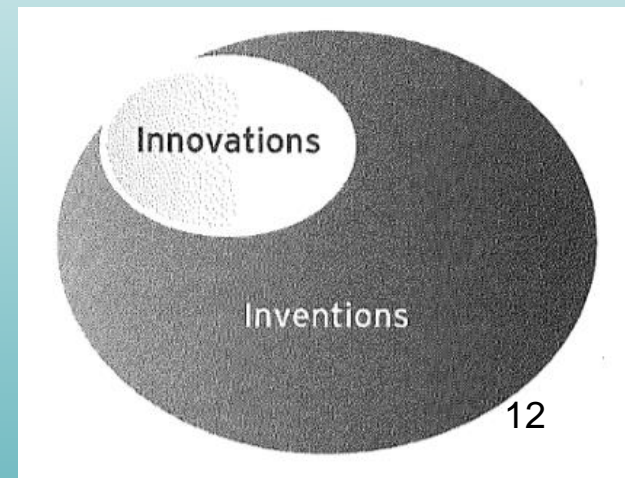
## Generating Ideas

- Ideas can come from anywhere and anyone
- Deliberate Brainstorming or some method
- They are more likely from people close to the product and its problems:
  - Users
  - Customers
  - Marketing and Sales staff
  - Marketing

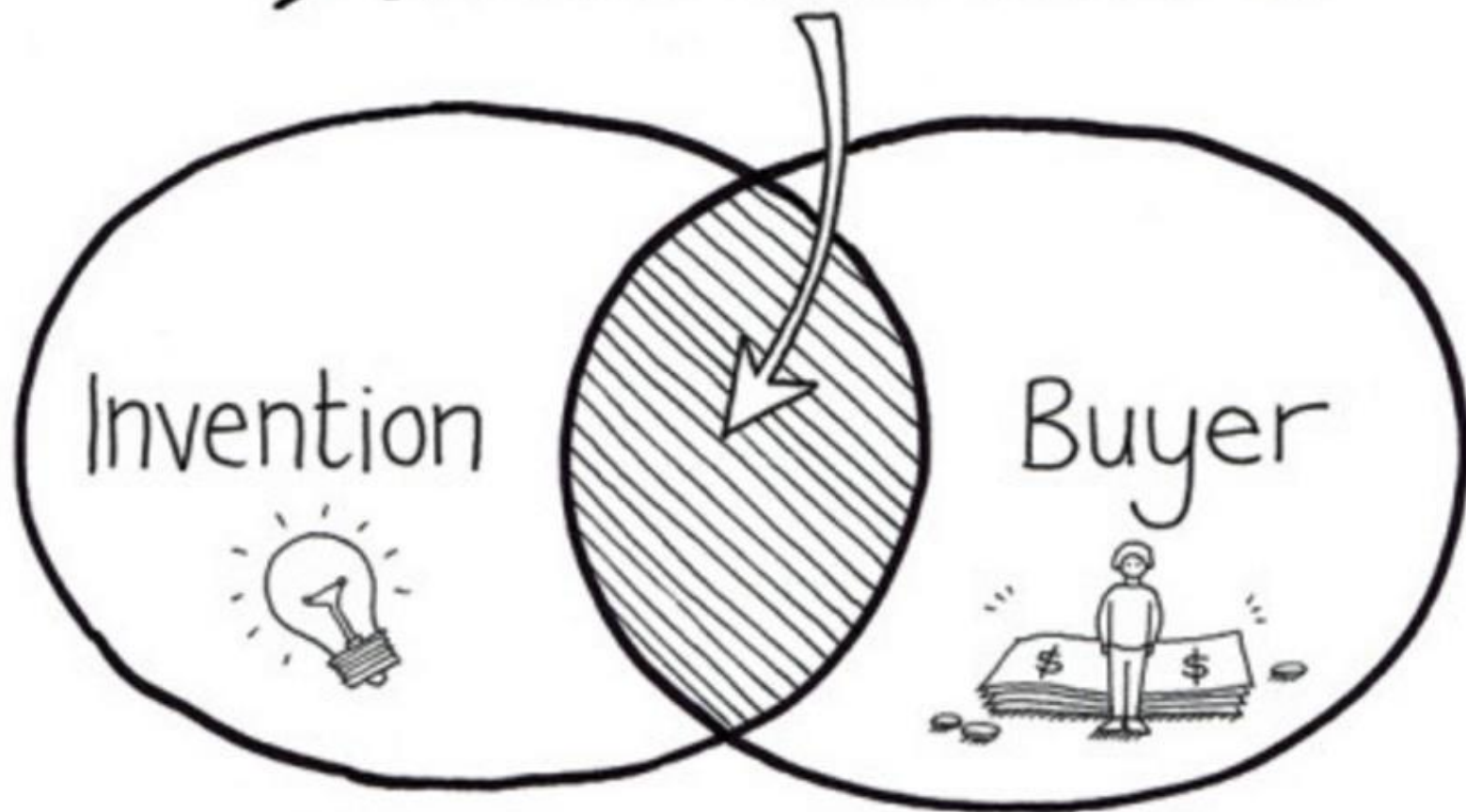
# Idea vs Opportunity

- Not every creative idea is worth developing.
- Some ideas are worth developing but will never make any money (*Eg: Interesting inventions*).
- A business opportunity is usually a good idea - that *will* make money.
- Such an idea has a chance to be seen as an innovation:

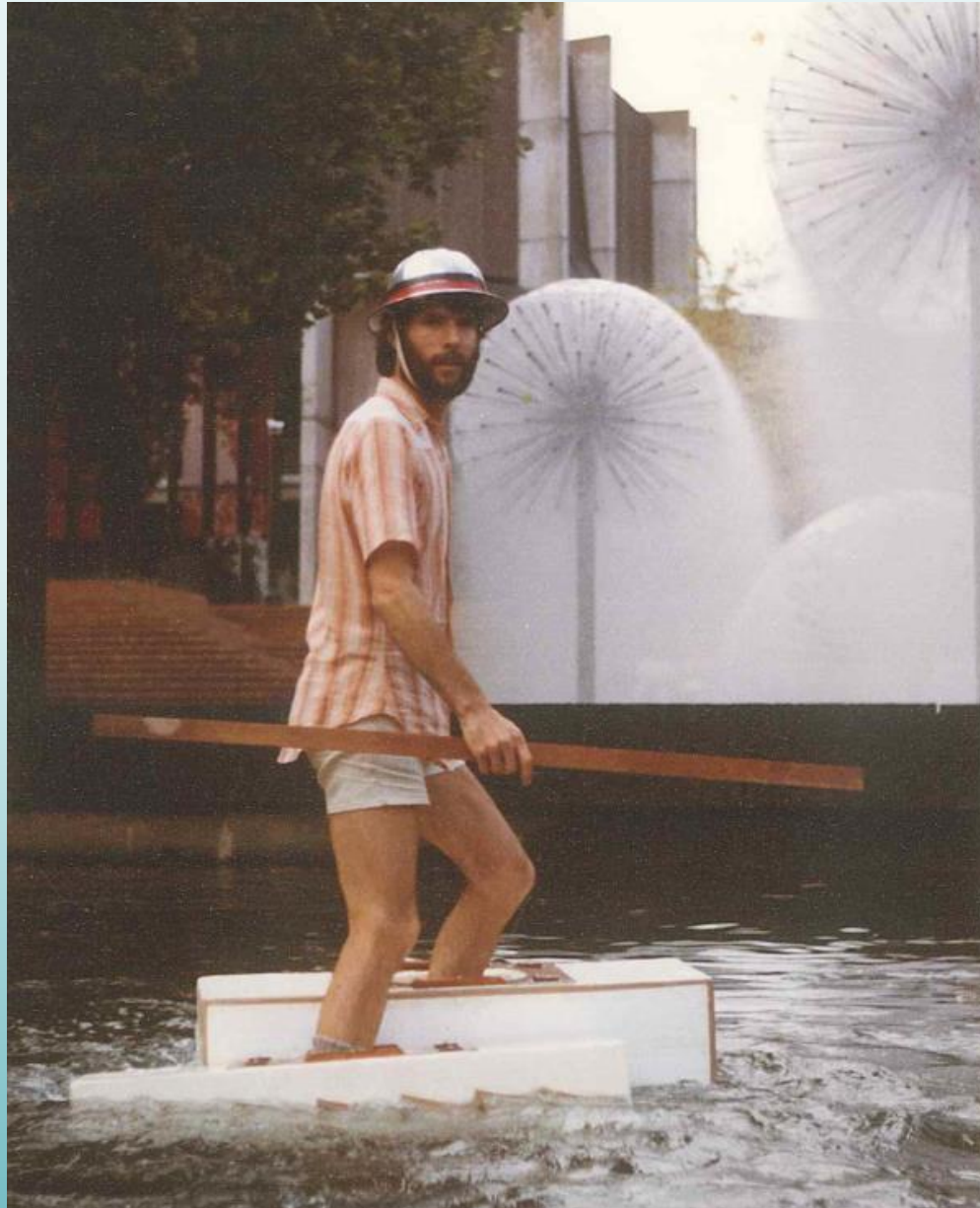
*“A creative idea that is realized”* Frans Johansson



# INNOVATION



## *Good Idea – Not a Business Opportunity*



# 3. Generating & Selecting Ideas:

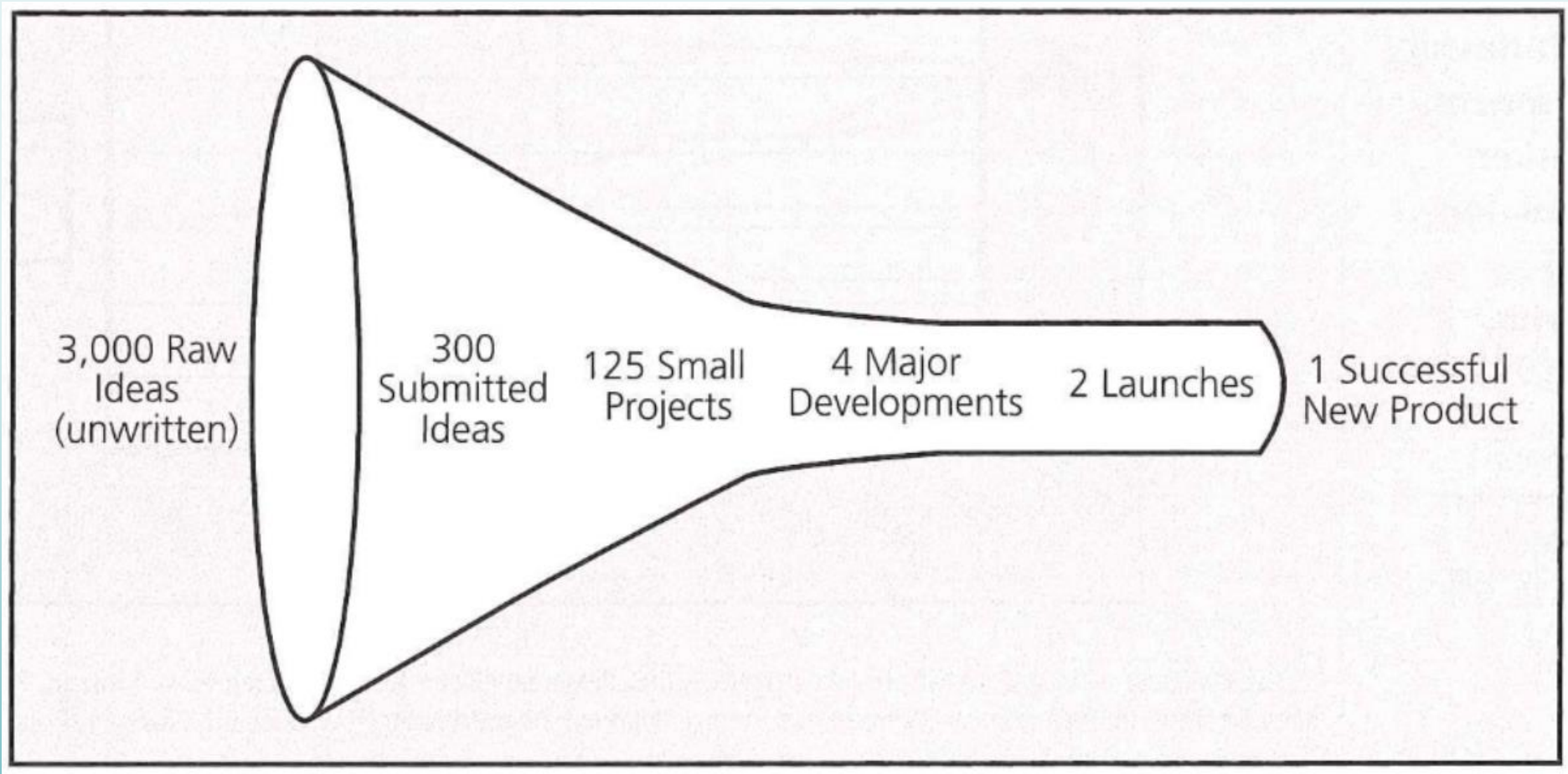
## Selecting Ideas

- There are many selection methods
- It is usually best to select ideas:
  - with the greatest impact and market potential
  - in line with company values
  - leveraging company capabilities & strengths
  - within company's resources to do
- This means many ideas will not make it



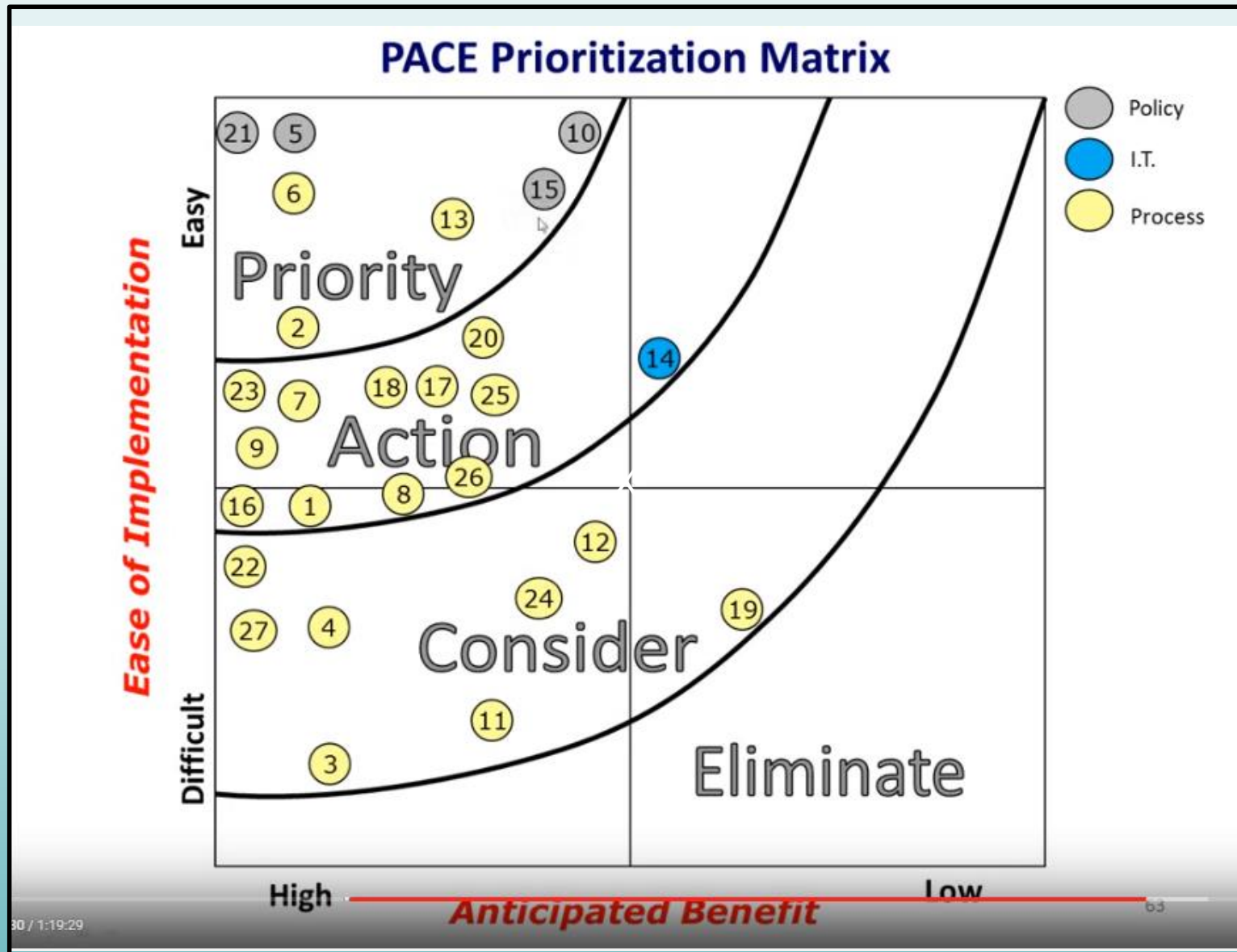
# *The Innovation Funnel*

*(From Schilling "Strategic Management of Technological Innovation")*





# *Introduced by Hamish & Norm*



# Key Selection Criteria

(Cooper: "Winning at New Products")

**Figure 8.6: Use This Proven Scorecard for New-Product Project Selection**

## Factor 1: Strategic Fit & Importance

- Alignment of project with our business's strategy
- Importance of project to the strategy
- Impact on the business

## Factor 2: Product & Competitive Advantage

- Product delivers unique customer or user benefits
- Product offers customer/user excellent value for money
- Differentiated product vs. competitors
- Positive customer/user feedback on product concept (concept test results)

## Factor 3: Market Attractiveness

- Market size
- Market growth & future potential
- Margins earned by competitors in this market
- Competitiveness – how tough & intense competition is (negative)

## Factor 4: Core Competencies Leverage

- Project leverages our core competencies & strengths in:
  - technology
  - production/operations
  - marketing/communications/branding
  - distribution/sales force

## Factor 5: Technical Feasibility

- Size of technical gap
- Familiarity of technology to our business
- Newness of technology (base to embryonic)
- Technical complexity
- Technical results to date (proof of concept?)

## Factor 6: Financial Reward versus Risk

- Size of financial opportunity
- Financial return (NPV, ECV)
- Productivity index
- Certainty of financial estimates
- Level of risk & ability to address risks

Projects are scored by the gatekeepers at the gate meeting, using these six factors on a scorecard (0 - 10 scales on each of the 6 factors above).

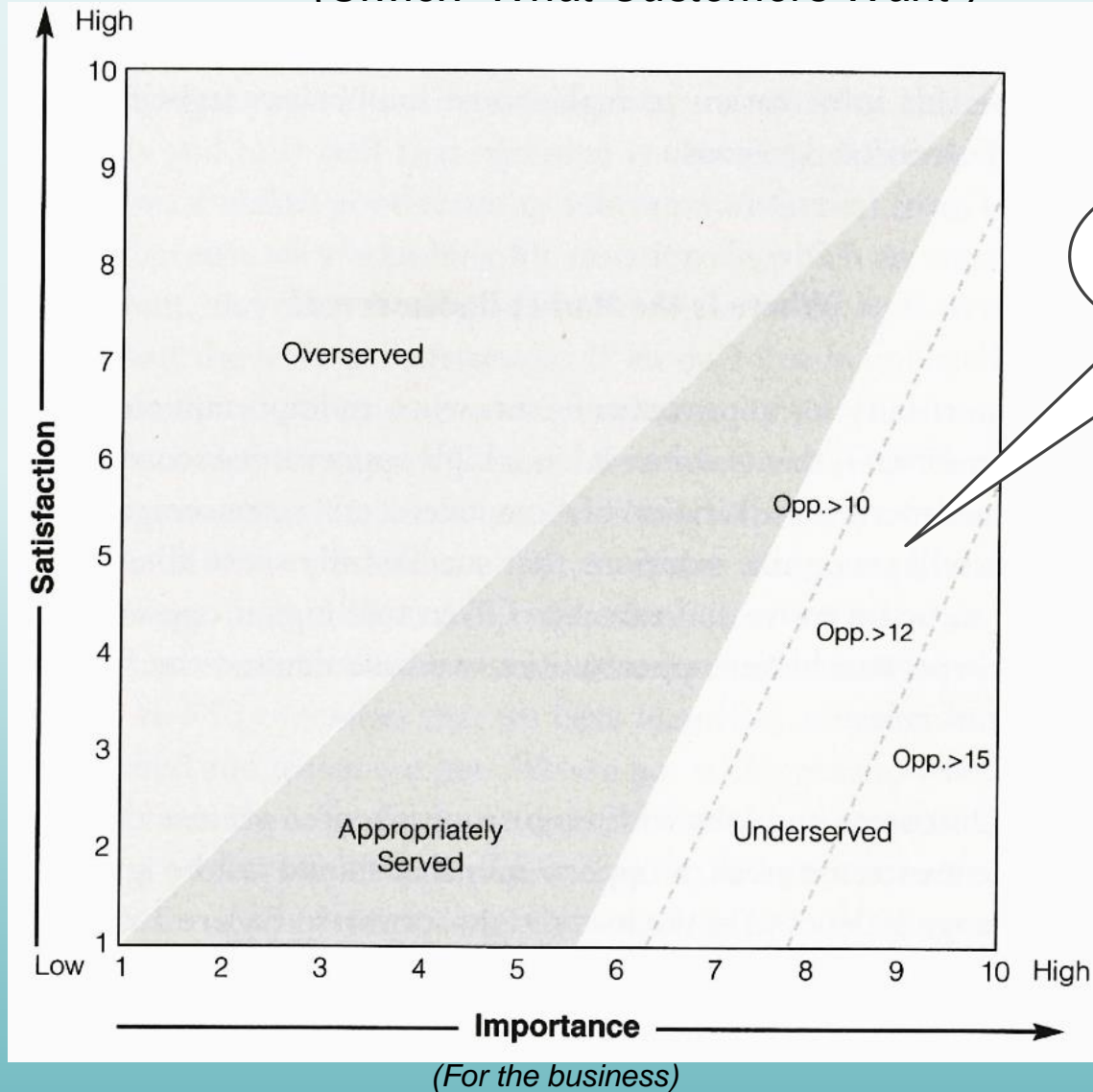
The Project Attractiveness Score is the weighted or unweighted addition of the scores, taken out of 100.

A score of 60/100 is usually required for a Go decision.

This scorecard is for Gate 3, Go to Development. Similar scorecards are used at earlier gates.

# *The Idea of “Under-served” Customer Needs*

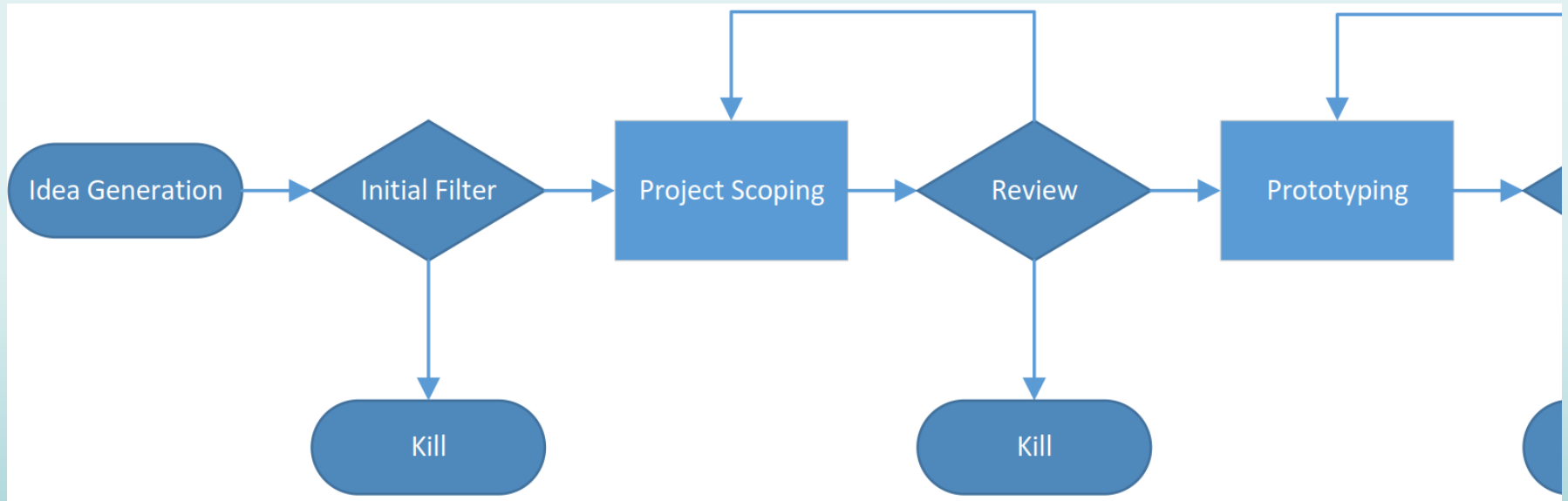
*(Ulwick “What Customers Want”)*



## 4. Innovation: from idea to market

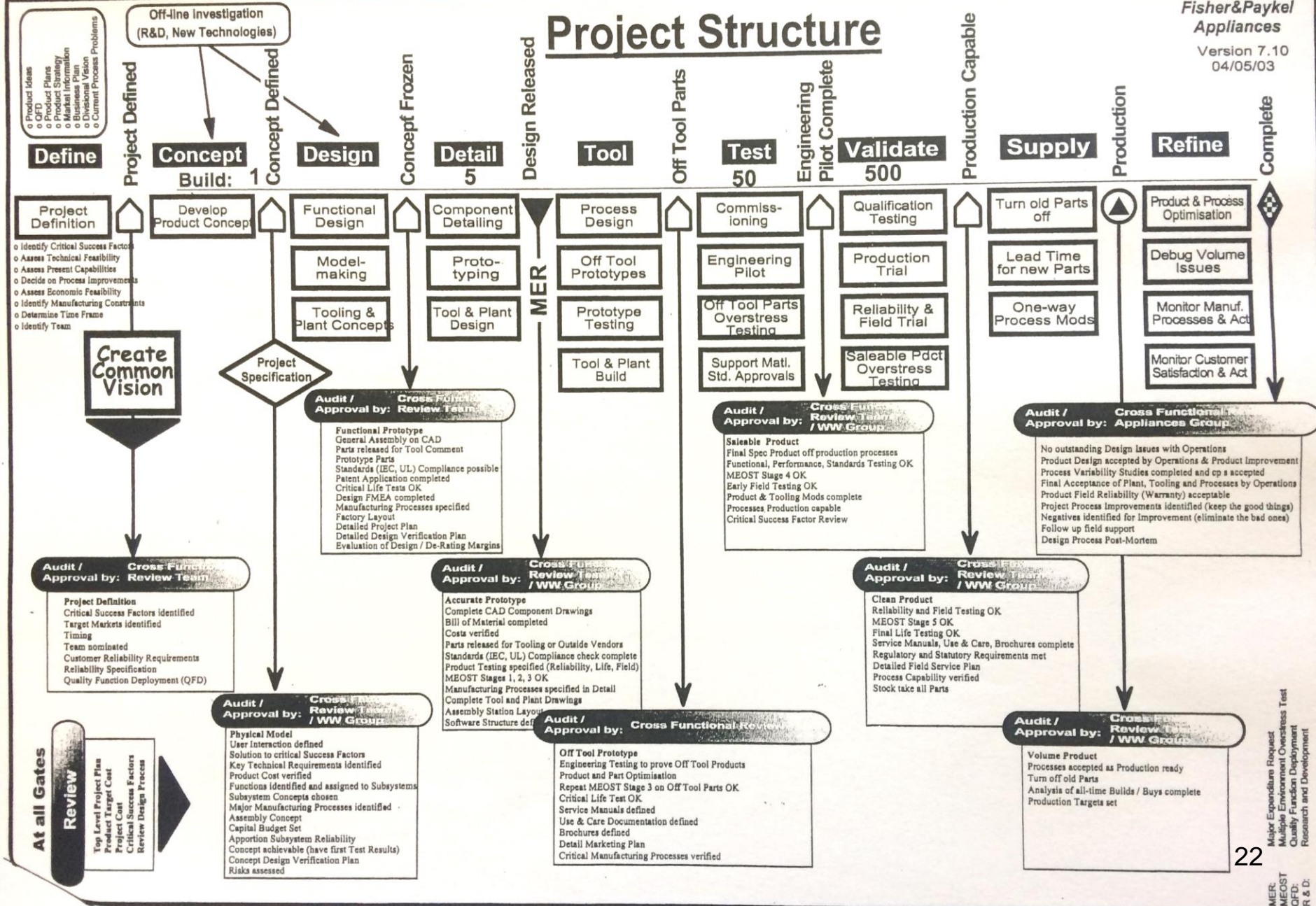
- Can be a long road, depending on the level of innovation (several years).
- Can be costly, risky and hard
- Involves a range of different experts
- Usually has a staged process with go/kill decisions
- A number of roadmaps illustrate the path

# *Stage-Gated Innovation Project*





## Project Structure



# SF Engineering Stage-Gate Process

(Page 1 of several; Gates 1 & 2 of 9)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	IDEA				This process is not here to make the decisions. It is here to ensure all (hopefully) the questions are asked and all the conversations take place so that the people who make the decisions are properly informed when they do it. It is here to get consistent decisionmaking. It should protect us from advancing goofy ideas beyond their proper kill-points			Is There a Potential Fit with Company Vision?						Is Further Investment Justified?	
2															
3															
4															
5															
6															
7															
8						No	Maybe				No	Maybe	Yes		
9					Initial filter - roughly one man hour			Gate 1		Due diligence - multi-dept research				Gate 2	
10															
11	Stages				Idea (Key "no's" kill the project)				Project Scoping (Desk Research)				Prototyping		
12															
13	Vision Stream				Aligned with vision:				Aligned with vision:				Validate against vision		
14					Can it be a high quality product(s)?				Can it be a high quality product(s)?				Can it be a h		
15					Can it be a high margin product(s) (30%+)?				Can it be a high margin product(s) (30%+)?				Can it be a h		
16	For what purpose				Can it be made in our Chinese factory?				Can it be made in our Chinese factory?				Can it be made		
17	To what end				Will it be sold to high-end, discerning customers?				Will it be sold to high-end, discerning customers?				Will it be sold t		
18	At what cost				Will it deliver lower costs to our core products?				Will it deliver lower costs to our core products?				Will it deliver l		
19					Are we sure this will not take away from our existing sales and objectives?				Are we sure this will not take away from our existing sales and objectives?				Are we sure this wil		
20					Is it a good fit with our company and values?				Is it a good fit with our company and values?				Is it a good f		
21					Does it align to one of our 3 key goals if trampoline related?				Does it align to one of our 3 key goals if trampoline related?						
22					Does it fit with one of our core capabilities?				Does it fit with one of our core capabilities?						
23					Does this fit in one of our project categories: Core, Adjacent, Transformational				Does this fit with our category allocation?						
24	Technology Stream				Initial Technical Assessment:				Initial Technical Assessment:				Prototypes		
25					Is it likely to work reliably?				Is it likely to work reliably?				One built an		
26					Is there low risk of misuse or product failure?				Is there low risk of misuse or product failure?				Specification evol		
27					Can it be patent protected or kept secret?				Do we have an initial outline specification?				Patentability / IP pl		
28					Realistic development pathway? Is it doable?				Can it be patent protected or kept secret?				Project template fi		
29					Easy to manufacture?				Realistic development pathway? Is it doable?				Technical fe		
30									Easy to manufacture?				Key technica		
31					Is product life long?				Relevant standards identified				Technical te		
32					Are raw materials stable and available?				Is product life long?				Alternative to		
33					Is it easy to package and ship?				Are raw materials stable and available?				Relevant sta		
34					Technology can expand or be bundled with other products & services				Is it easy to package and ship?						
35									Technology can expand or be bundled with other products & services						
36															
37	Market / Customer / Delivery Stream				Identify customers				Identify customers				Customer input		
38					Target markets and customers identified?				Target markets and customers identified?				First custom		
39					Can it be delivered through our channels?				Can it be delivered through our channels?				Have potenti		
40					Are potential customers enthusiastic?				Are potential customers enthusiastic?						
41					Are potential customers underserved?				Are potential customers underserved?				What it looks like h		
42					Does this address an unarticulated customer need observed in action?				Does this address an unarticulated customer need observed in action?				How will the custo		
43					Can we name which customer problem are we trying to solve?				Can we name which customer problem are we trying to solve?				Is this protot		
44					Is there clear value/benefit to the customer?				Is there clear value/benefit to the customer?						

## *SF Engineering Stage-Gate Process*

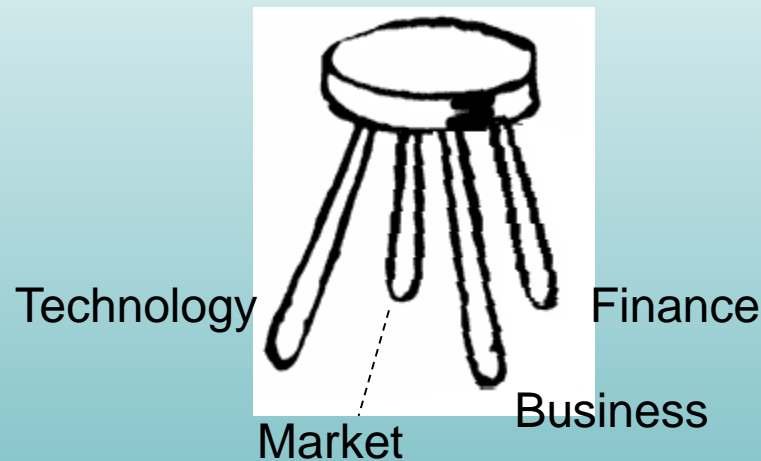
*(The whole chart)*

IDEA	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000
	The project will be under the direction of the project manager, who will be responsible for the overall management of the project. The project manager will be responsible for the overall management of the project, including the selection of the project team, the development of the project plan, the monitoring and control of the project, and the communication of the project status to the stakeholders. The project manager will be responsible for the overall management of the project, including the selection of the project team, the development of the project plan, the monitoring and control of the project, and the communication of the project status to the stakeholders. The project manager will be responsible for the overall management of the project, including the selection of the project team, the development of the project plan, the monitoring and control of the project, and the communication of the project status to the stakeholders. 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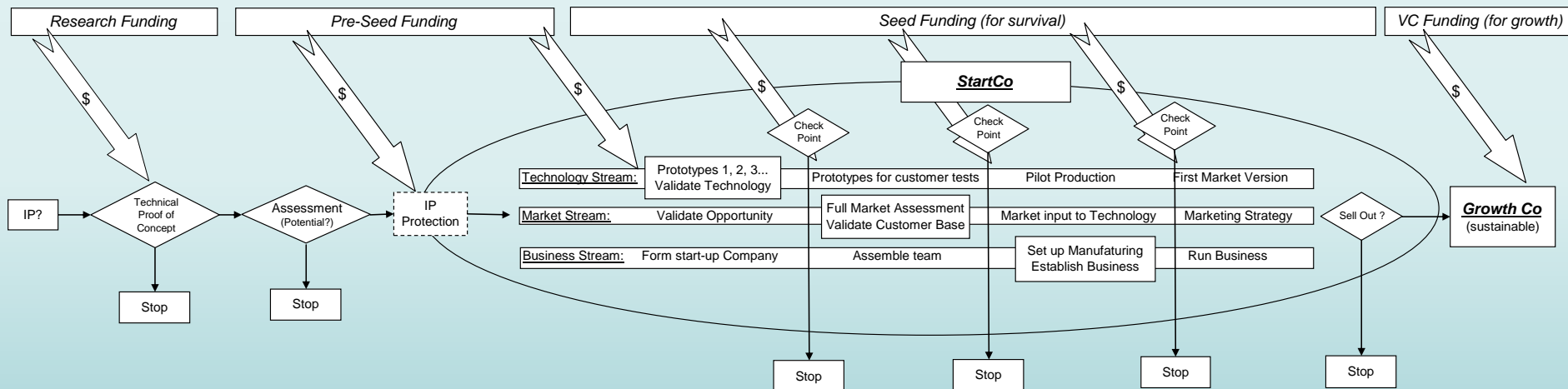


# *Four Skill Streams to take an idea to Market*

1. Technology
2. Market
3. Business
4. Finance

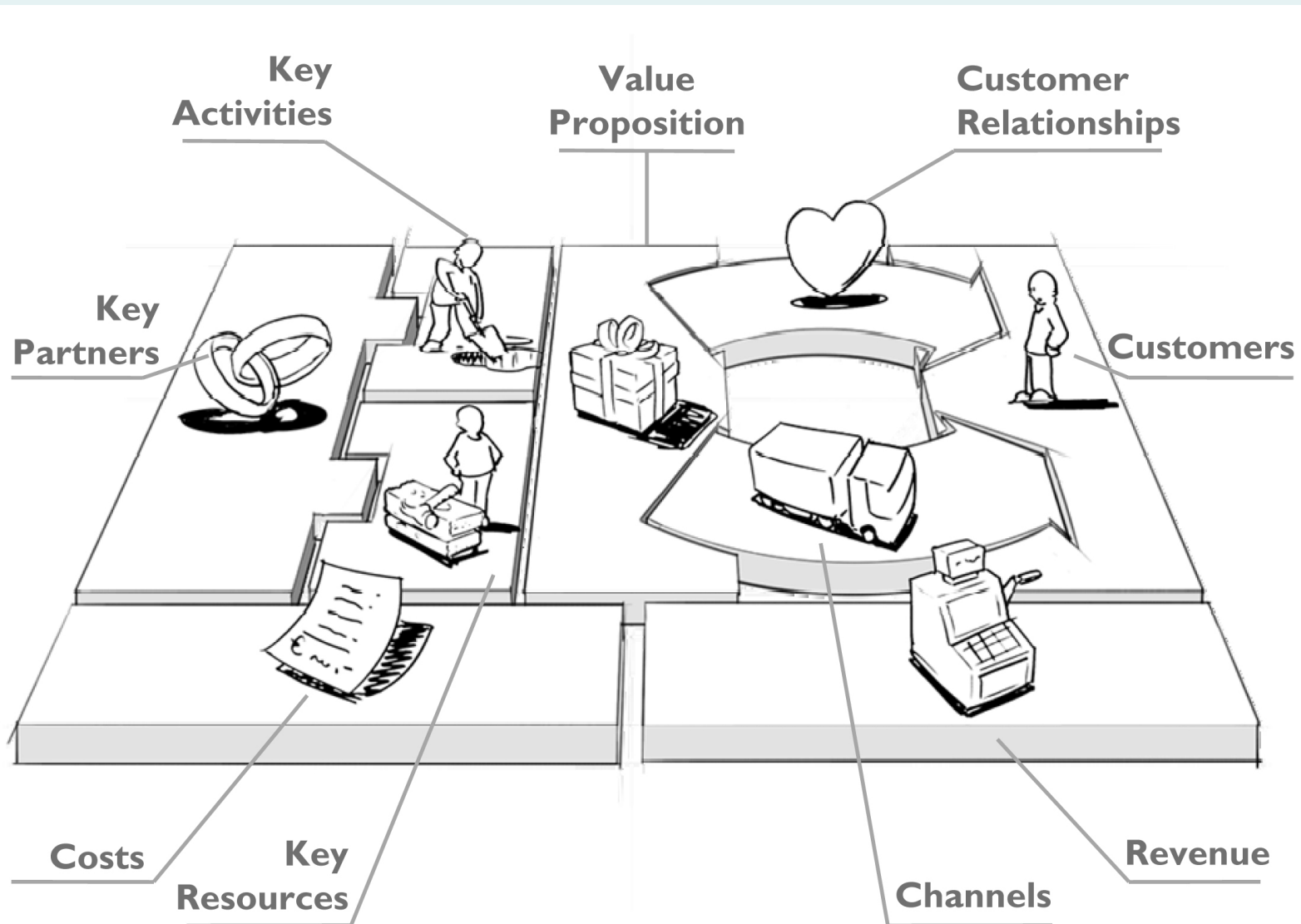


# Four Streams on a Timeline



# Business Model Canvas

*9 items to keep on track* (Alexander Osterwalder)



drawings by JAM

# Overview

1. Why Innovate?
2. Innovation: Definitions and concepts
3. Ideas: Generating & Selecting them
4. Taking innovations from idea to market
5. How much Innovation? Protecting the core business.

*(Interspersed with illustrations)*

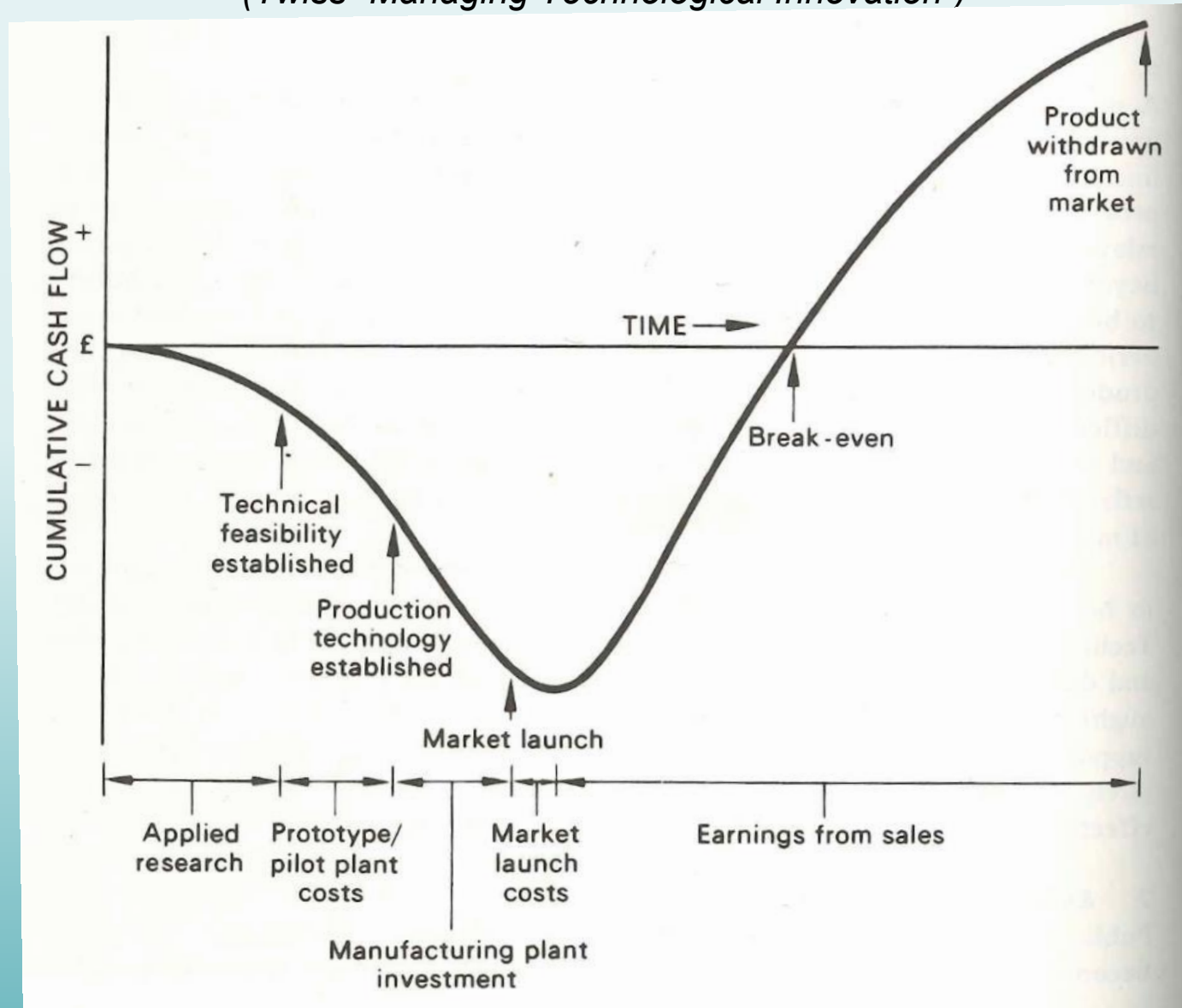
# 5. How Much Innovation?

## Protecting the Core Business

- Business is not innovation
- It is manufacturing distributing and selling.
- For the most part innovation is a distraction from serving customers
- Innovation costs, and introduces risk
- It takes a long time to pay off (if at all)
- But without it – the business falls behind

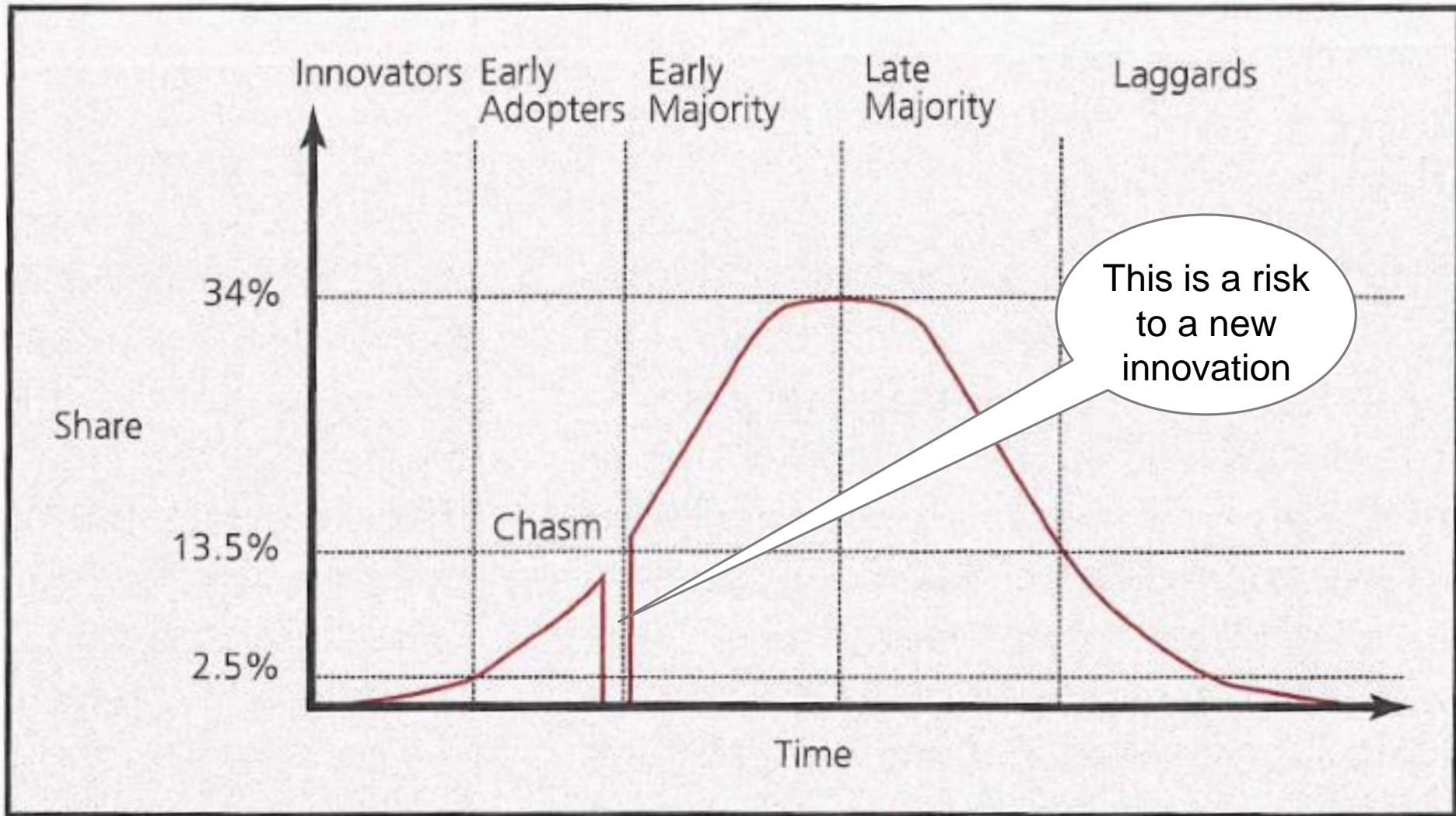
# *New Product Cumulative Cashflow Diagram*

(Twiss "Managing Technological Innovation")



## Exhibit

### *The Chasm between Early Adopters and Early Majority Customers* (From Schilling "Strategic Management of Technological Innovation")



# 5. How Much Innovation?

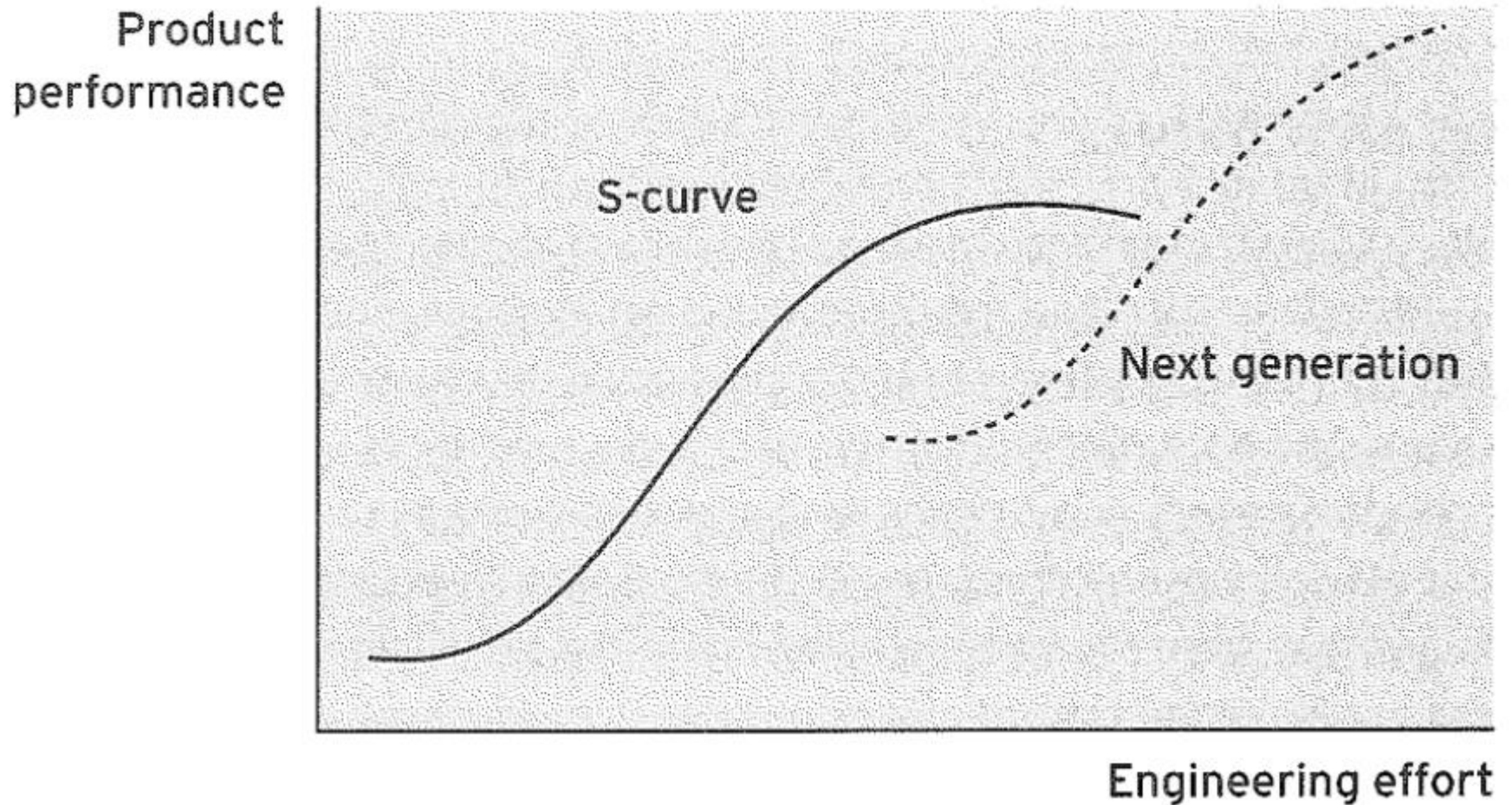
## Protecting the Core Business

- Carefully managed, innovation makes market leaders
- The challenge is to innovate well without over-extending resources ...
- ... to manage the tension between funding daily operations, and investing in the future



# *The Paradigm Shift*

(Smith "Exploring Innovation")



# 5. How Much Innovation?

Protecting the Core Business

Some authors\* suggest investment should be:

- 75% on day-to-day operations
- 5% on incremental improvements
- 10% on “sustaining innovations”
- 10% on big, disruptive innovations.

What do we think?

*\*Brad Power and Steve Stanton (Harvard Business Review, “How to Prioritize Your Innovation Budget”*

# For Discussion:

What is Innovation for GOBA?

What is the right expenditure balance?

END