



# FILM TO iPHONE

Our Photo Journey Through the Rise and  
Fall of Kodak – and Other Disruptions



A Special Thanks to the...

FOUR SEASONS

LIFE LONG  
LEARNING  
CLUB



# What to expect today?

- Learn a bit about taking photos
- Share our journey (Myra & Dan)
- Discover how technology shapes are lives
- Ask questions and most important ... have fun!





# In the beginning...

- Film
- Darkrooms (where I met Myra... TMI)
- Chemicals
- Anticipation
- ... and Passion



(L. to R.): B. Proctor, R. Shannon, P. Savaria, D. Pettus, P. Martinez, S. Schnieder, C. Brown, G. Lamb, M. Herr.

## Photo Club

Photo Club consists of amateur photographers. One of their main activities this year was the Photo Contest, which was a big success. Other activities were a hamburger sale at the basketball game against Gahr and a snow trip for late in the fall.





## Dan's First High-School Studio Portrait Project

- Year: 1968
- Subject: Myra Thompson (Pettus), @ 15 YO
- Camera: Mamiya/Sekor 500 DTL
- Film: Kodak Tri-X





1. Take the shot... carefully...film waste is expensive
2. Remove film from camera and load into a film developing canister (total darkness). Three chemicals timed to develop.



3. Dry film

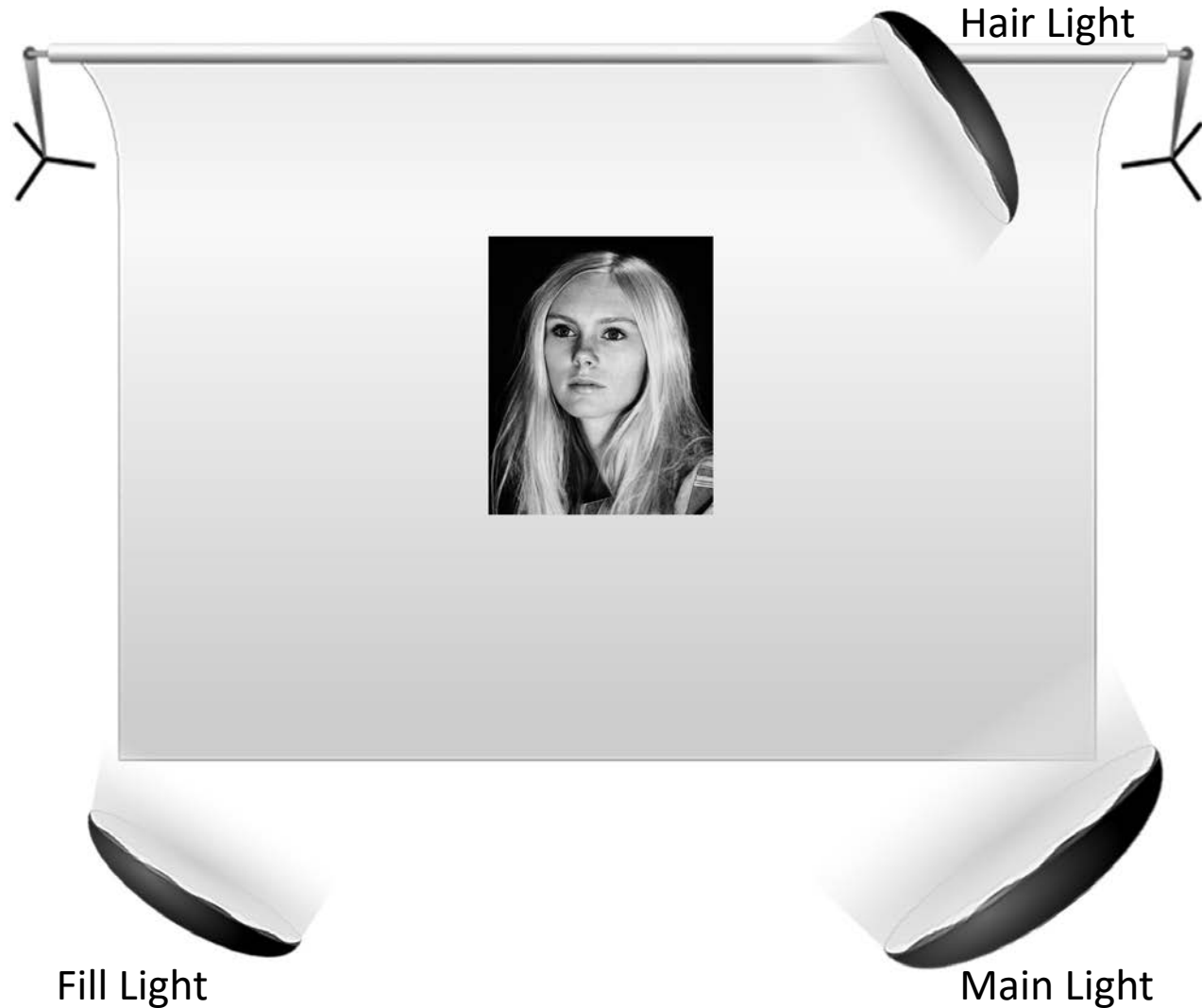
4. Place into film enlarger in a darkroom



5. Expose film and light to photographic paper.

6. Three chemicals and dry ...

7. Wala! You have ONE print





# What to do?

Follow our passion in the photography arts .... or .... pursue careers in the upcoming digital computer field ....

We followed the \$\$ and went the computer route, "Plan A".







# UNTIL

PLAN A





Eastman Kodak's failure to accept digital technology **Market Disruption**, was the the beginning of our Photography business.

... why did Kodak fail in the first place?



Back in the 19<sup>th</sup> Century  
the Eastman Dry Plate  
Company produced the 1<sup>st</sup>  
camera for the consumer  
market





# Kodak



The Kodak Brownie Starmatic was launched in the 1950's. Over the coming five years more than **10 million** of them were sold!



# Kodak



But... even greater  
revenues by selling film





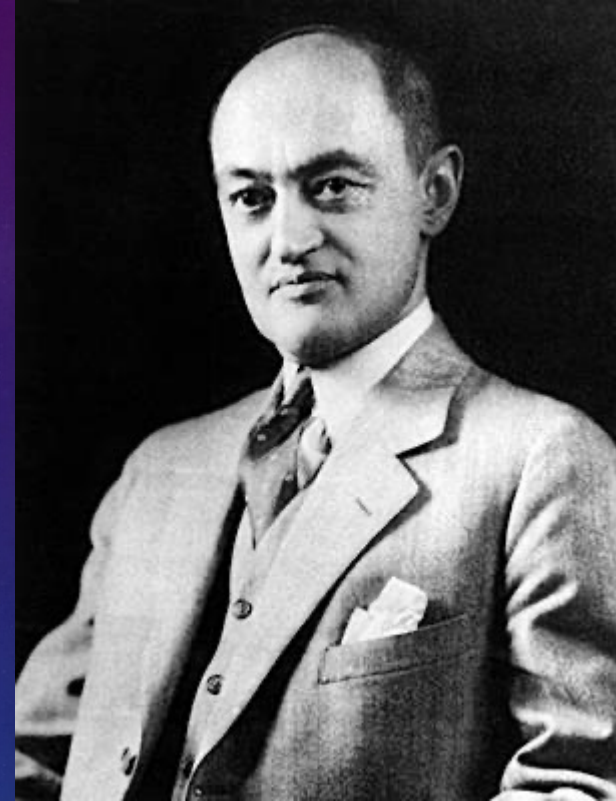
1986 Kodak scientists created the **world's First Megapixel Sensor ...** later co-developed with Nikon to produce the **first all digital professional camera**



# WHAT IS MARKET DISRUPTION?

## Joseph Schumpeter

*“In capitalism, fast innovative entry by entrepreneurs is the force that sustains economic growth, even as it **destroys the value of established companies** that enjoyed a degree of monopoly power”*



Joseph Schumpeter; 1883 – 1949  
Harvard University Professor





# Steve Jobs

1955-2011

**"The ones who are crazy enough to think  
that they can change the world,  
are the ones who do."**



# WHAT HAPPENED AT KODAK?



Kodak CEO George Fisher regarded digital photography as the **enemy**, an **evil juggernaut** that would **kill** the chemical-based film and paper business that fueled Kodak's sales and profits for decades.

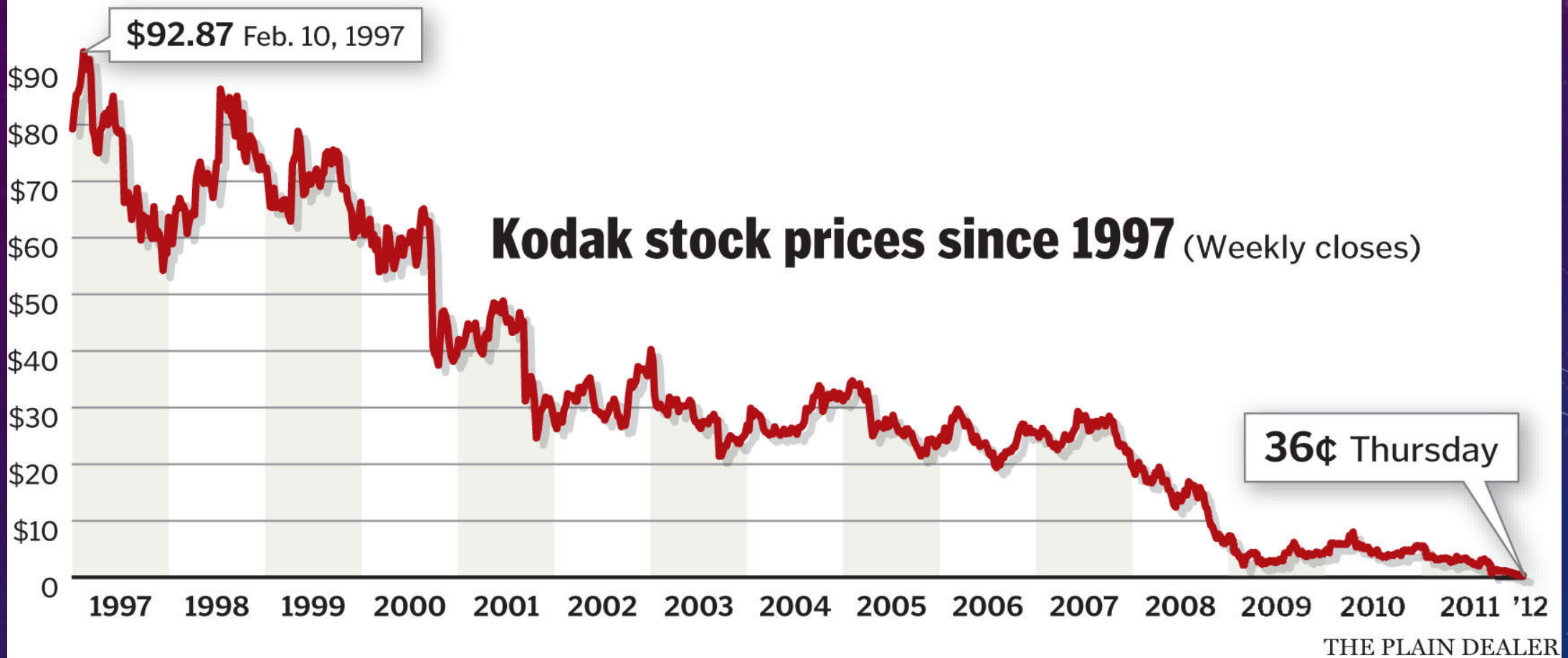
Instead of embracing disruptive innovation, Kodak decides to '**stay the course**' feeling digital photography too complex and would **never replace film** for consumer use.



ONCE THE SHIFT OCCURRED, IT WAS FASTER  
THAN ANYONE COULD HAVE IMAGINED...







In 1997-98, CEO Fisher had to fire 20,000+ people,  
the beginning of the end for Kodak





In 2012 Kodak filed for **Bankruptcy** and declared it will **quit** the photography business



**Uber**

The world's largest  
taxi company, owns  
no vehicles.

The world's most  
popular media owner,  
creates no content.

**Facebook**

**Alibaba**

The most valuable  
retailer, has no inventory.

The world's largest  
accommodation provider,  
owns no real estate.

**Airbnb**

Name other disruptive markets that change our everyday life?



# ANOTHER DISRUPTED BUSINESSES

- 259 Borders Superstores
- 114 Borders Express and Waldenbooks
- 26 Borders Airport Stores

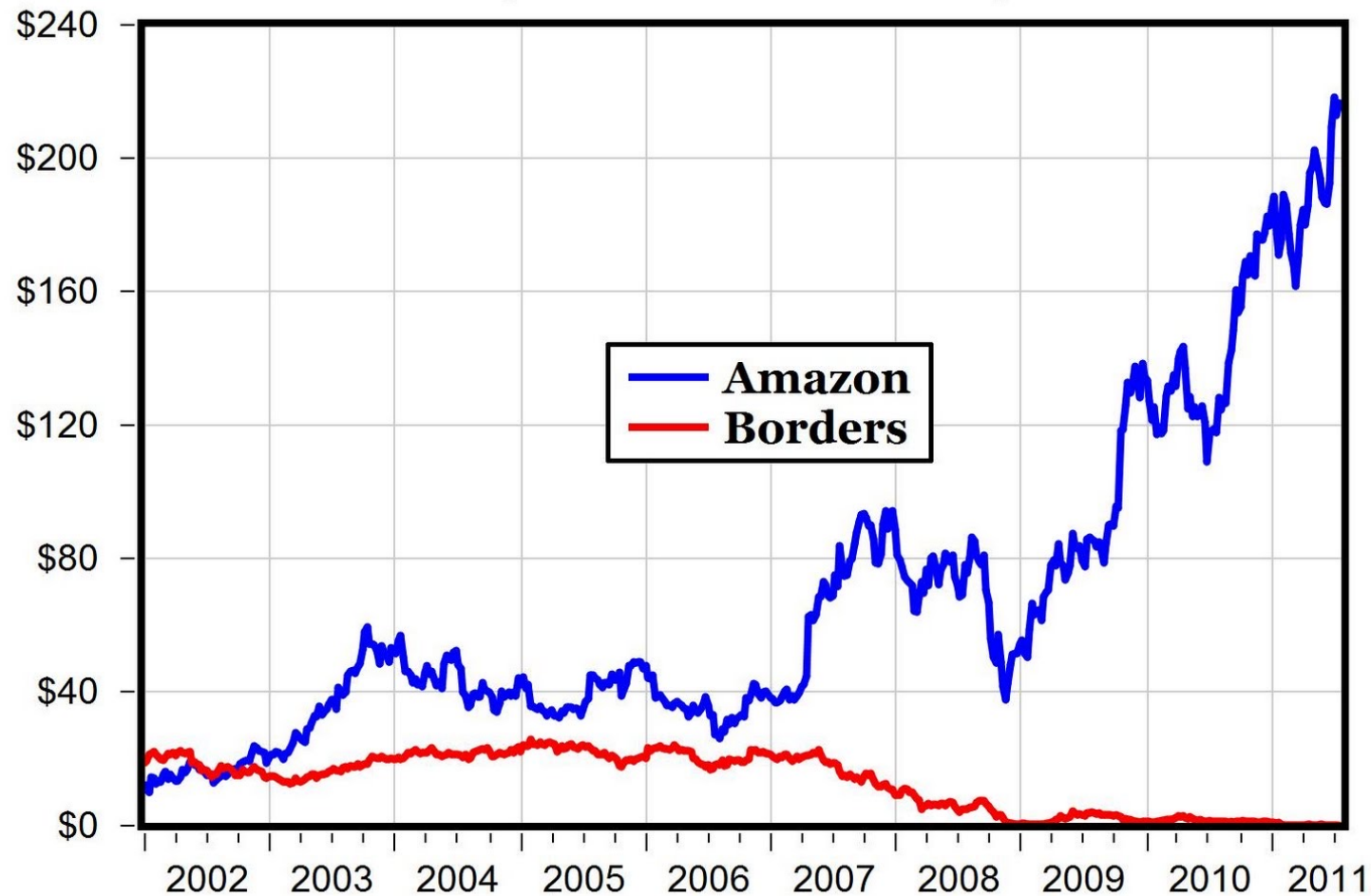


*CEO Mike Edwards bids farewell to the book retailer's fans and customers as the company announced it was going out of business after 40 years*

July 2011



# Stock Prices: Amazon vs. Borders January 2002 to July 2011



Amazon Stock Price Today:  
\$1,162.80 Share

IF YOU Invested \$10,000 in 2002

- Today Amazon = **\$1,162,000**
- Today Borders = \$0



# CHANGE IS INEVITABLE



Change is inevitable – and is one of the most stressful things in life

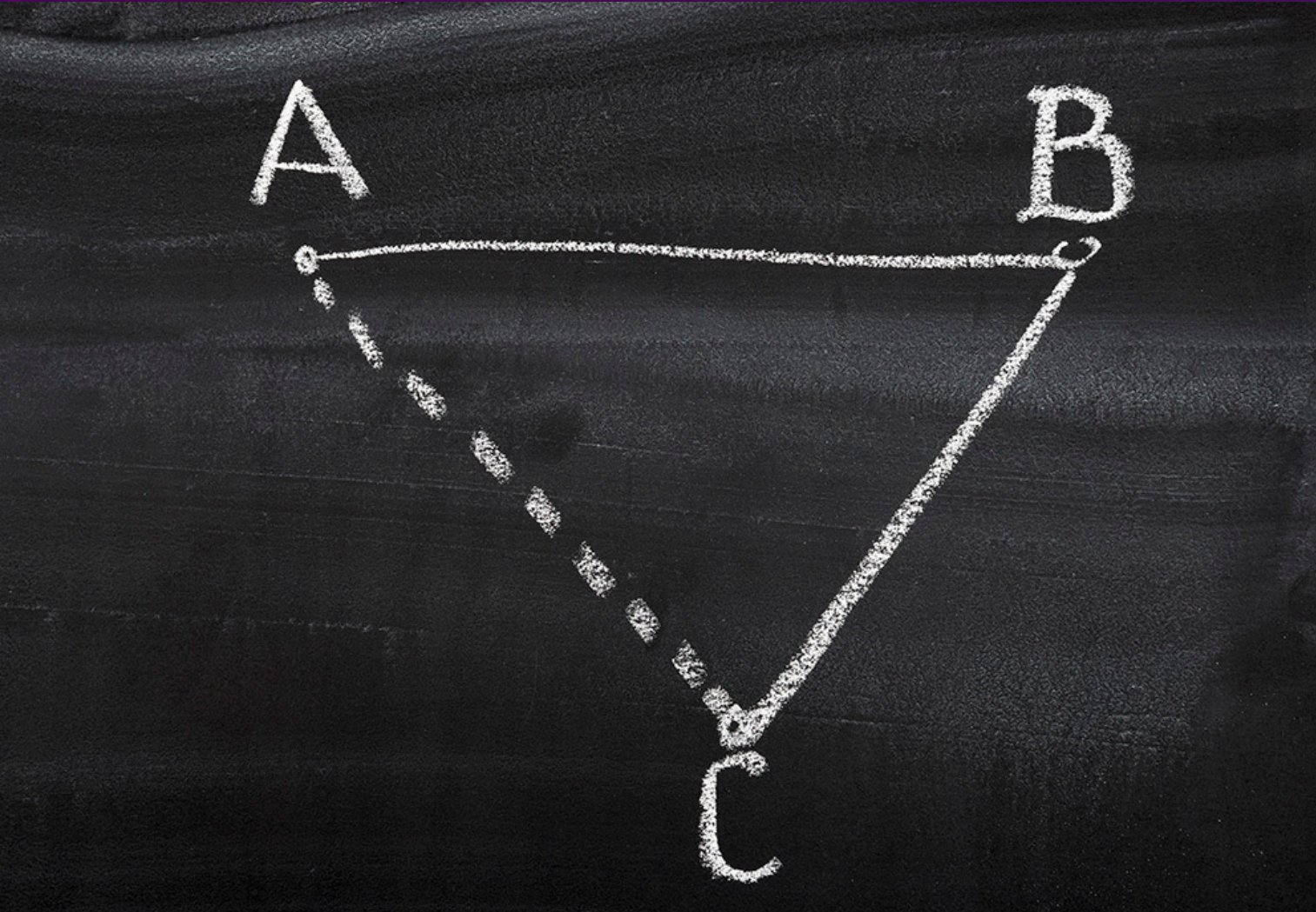
People and companies are reluctant to change

- largely because they have been successful doing things a particular way

In times of change - companies that change their products and business models thrive and prosper



# ... Back to our 'disruptive' story....



Myra and I enjoyed our career paths in the computer technology and healthcare industries

However, the outcome of the fall of Kodak and rise of digital photography reignites our passion in the photo arts, "Plan B"

**Plan A + B = C**

*P.S. Myra is on Plan "D", Pilates and Health-Coaching*



# June 2000 a new opportunity is born from market disruption technology

- Canon D30 all digital semi-pro camera
- Over \$ 3,000 to purchase in 2000
- 3 megapixels
- 3 focus points
- ***By comparison, Apple iPhone 7 is 12 megapixels!***





[HOME](#) [GALLERY](#)

WEDDING PHOTOGRAPHER

[MENU](#) [REAL WEDDINGS](#)

*Temecula Valley Winery Weddings*

 DAN PETTUS  
PHOTOGRAPHY





# All Digital Photography Business 2001 - 2015



A wonderful rewarding 14+ years  
photographing weddings in the  
Wine Country

Became PPA Certified, taught  
workshops, and authored a wedding  
photography book



Last wedding in 2015



# *Is There a Difference From Film to Digital?*

BACK IN MY DAY, IT TOOK TIME  
FOR IMAGES TO DEVELOP.



I HAVE NO MEMORY OF THAT.











# Fundamentals

14<sup>th</sup> to 17<sup>th</sup> Centuries **Masters of Art** excelled and understood Lighting Techniques, Composition, Placement, “Rule of Thirds”, Light Quality, Depth-of-Field, etc.

These techniques are **fundamental** to capturing high-quality images even in today’s “Pinterest” or “Instagram” culture.



*Rembrandt self portrait 1658*





## Film Workflow :

- Wedding day = 50 - 100 images max
- Each image is carefully managed before taking the shot
- Up to 10 days to get “proofs” back from the LAB
- “Fixes” are done during processing on the negative or printed format
- Delivered as physical prints



## Digital Workflow:

- Wedding day = 2,000 – 3,000 images
- Sometimes “spray and pray” actually works
- Images are available immediately
- “Enhancements” are done on the computer
- Delivered as a memory stick or DVD



# Quality of images?



*Disclaimer: Not Film vs. Digital. A pro level camera vs. iPhone*



# First, What is “Depth-of-Field” and is it possible for an iPhone to accomplish?



- Depth-of-field (DOF), which refers to **how much** of your image is **in focus**
- It is controlled by a wide aperture setting and can be used to isolate a subject
- iPhone's new “Portrait Mode” attempts to accomplish shallow DOF



Shallow depth-of-field



Wide depth-of-field



iPhone 7+  
Portrait mode

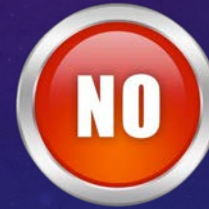


Canon 5D  
Av mode





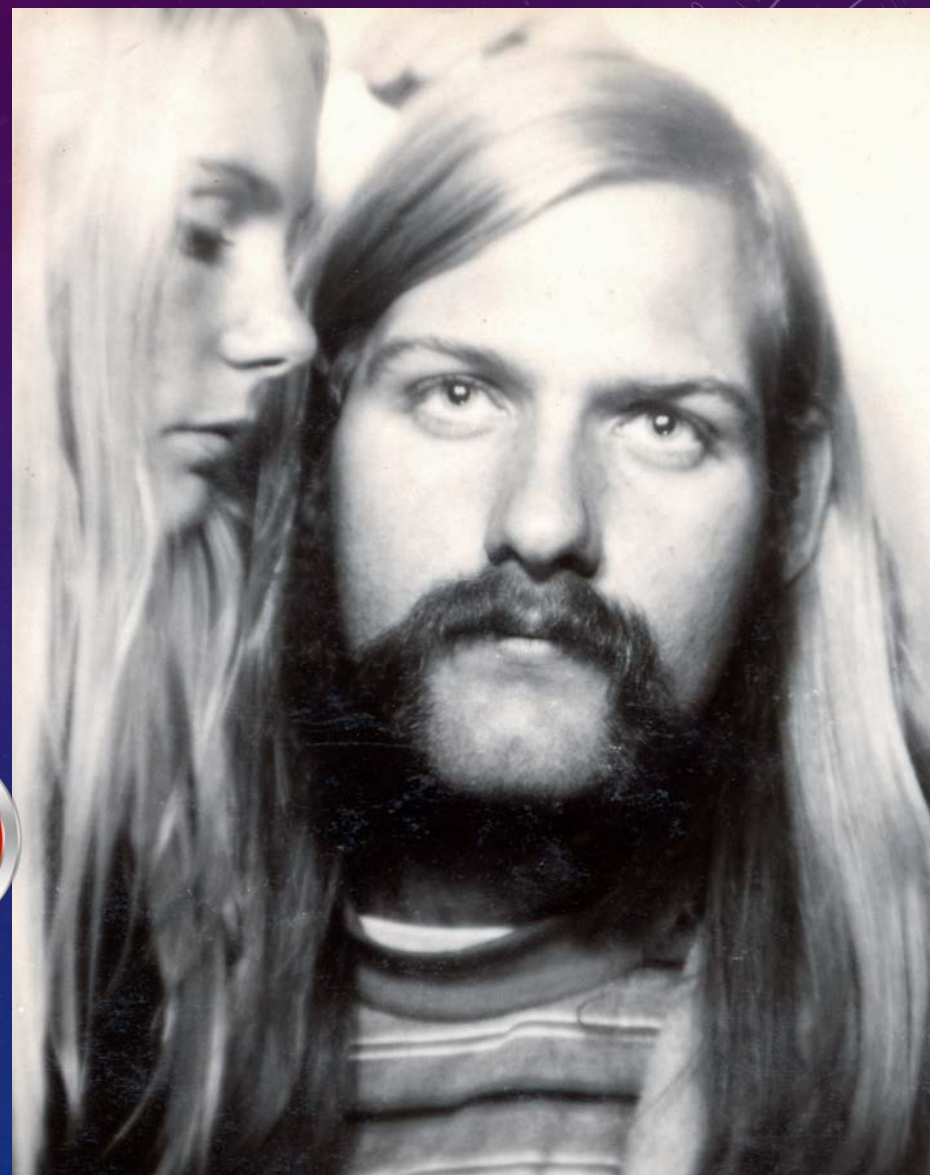
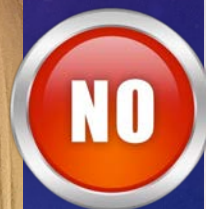
What about 'Selfies?'







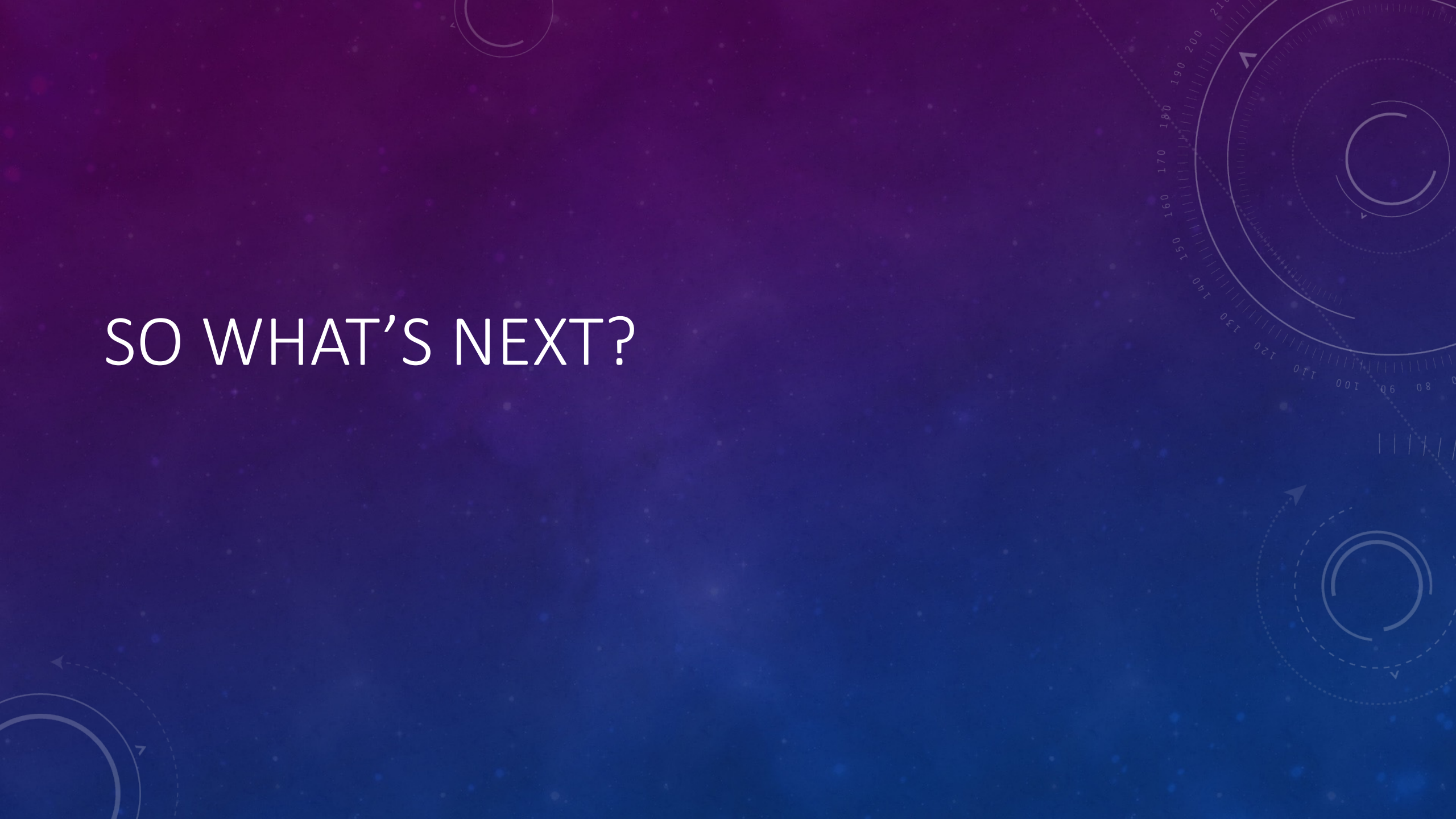
Selfie iPhone  
Circa 2016



Selfie \$1 Film Photo-booth  
Circa 1969



SO WHAT'S NEXT?





# Moore's Law\*

According to Moore's Law of Technology, how quickly does processing speed grow?

- a) Doubles every 10 years
- b) Doubles every five years
- c) Doubles every two years
- d) Doubles every 25 years

\*Gordon **Moore**, Intel Corp., 1965



# ... for what it's worth... Dan foresees

## In the next decade:

- The traditional camera will no longer exist
- Wearables tied to your phone is the primary method to take photographs
- Wearables tied to your drone will be the primary method to take videos
- Your VR (virtual reality) glasses will be your primary method to display and share photos/videos
- Storage will be in the “cloud”. Local computer storage will no longer be necessary
- New entries from Google, Amazon, and maybe a new disruptive innovation company!





Sample photos from Myra and Dan's photo business

*"Can I do that on my iphone?"*



Film, Digital, Still Camera, or Video ... only **3** adjustments can effect your photo! ... no matter how many fancy thingies are on your camera dial!






APERTURE



SHUTTER  
SPEED

ISO

APERTURE	<div>low f-number = larger lens opening</div> <div> F1,4 F2 F2,8 F4 F5,6 F8 F11 F16 F22 F32<div>high f-number = smaller lens opening</div></div>
SHUTTER TIME	<div>short exposure time (in seconds)</div> <div> 1/1000 1/500 1/250 1/125 1/60 1/30 1/15 1/8 1/4 1/2<div>long exposure time</div></div>
ISO	<div>low sensitivity</div> <div> ISO 50 ISO 100 ISO 200 ISO 400 ISO 800 ISO 1600 ISO 3200 ISO 6400 ISO 12800 ISO 25600<div>high sensitivity</div></div>

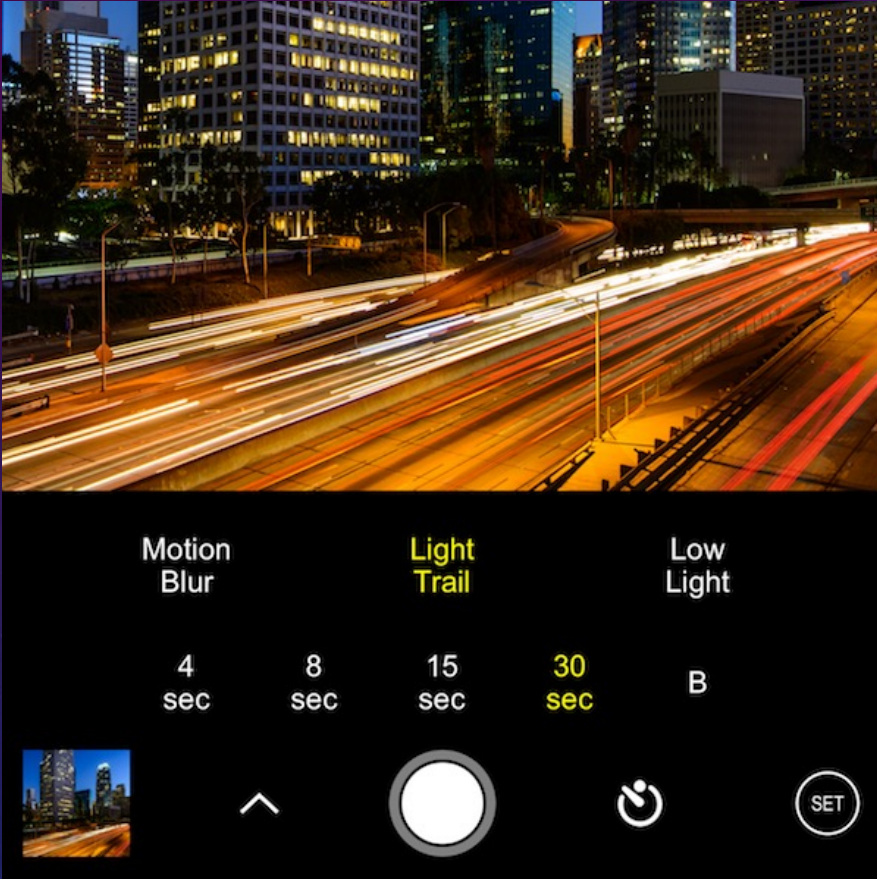








# Possible on iPhone?



iPhone ... maybe

Try using a Camera App like "Pro Cam 5"  
Set for "Light Trail" slow exposure



Canon 5D

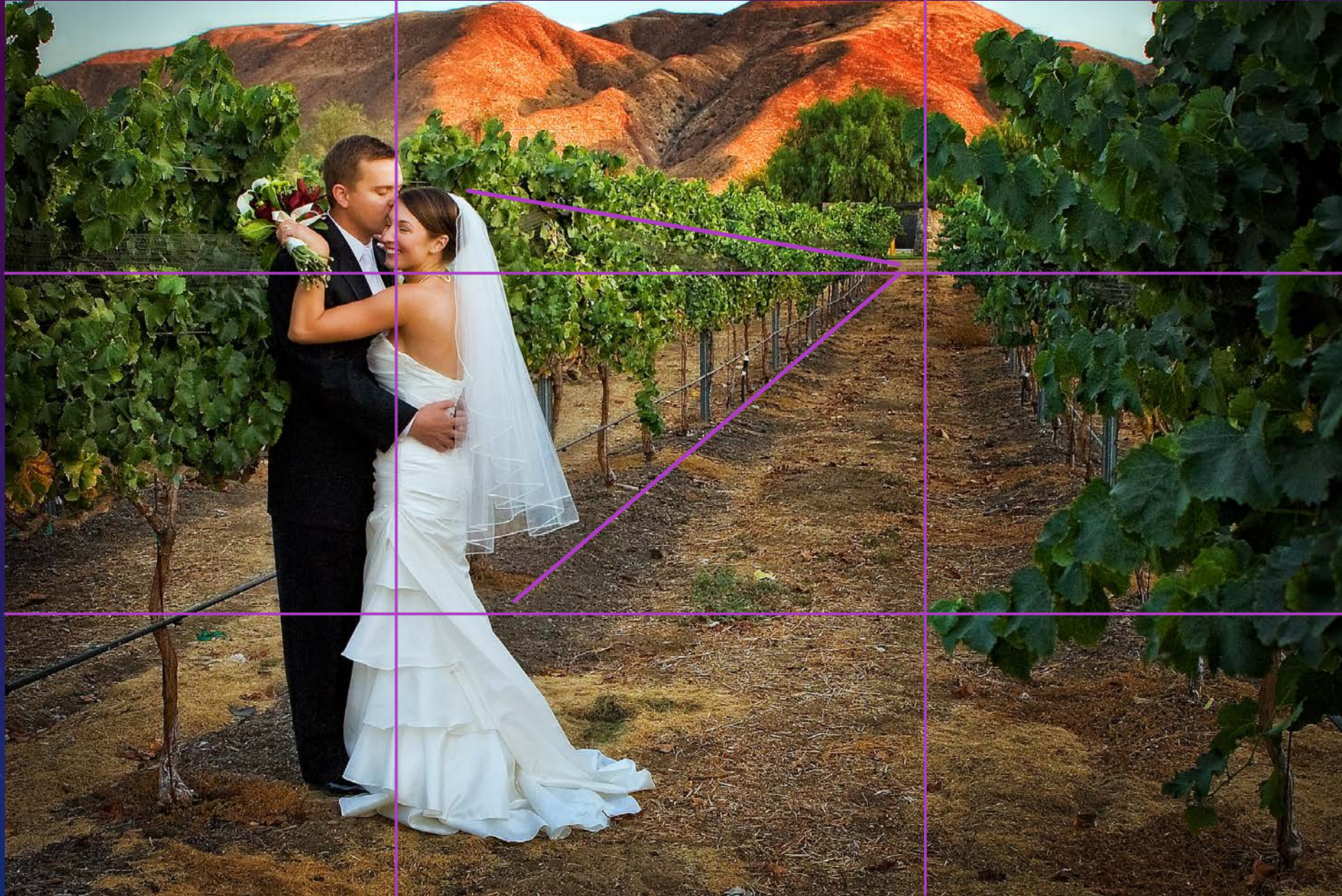
Use Tv (time value or Shutter priority)







Reel of Things ... yes, you can do this on your iPhone!

















*Can you identify a technique used on this image?*



















PRIVATE

2013

July 01





*That's all Folks!*