The future is Unreal:

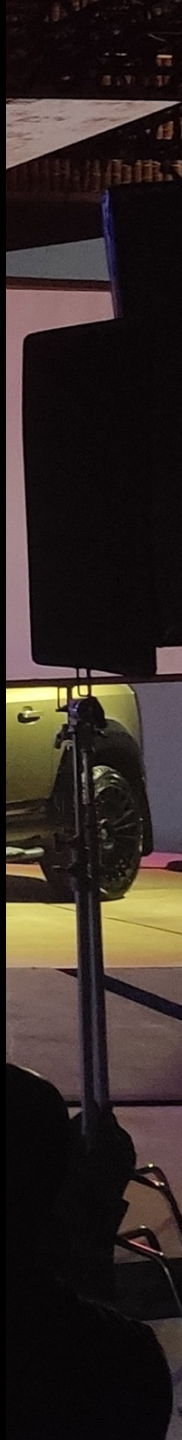
Virtual Production
Contemporary film practice

Ravensbourne University 2022

Virtual Production

In-camera VFX

Combining digital assets – rendered in real-time in a game engine – and physical elements (set, lights, actors) into the final image/output.



Virtual Production = LIVE IN-CAMERA VFX

https://youtu.be/iw96ZN6e9vw

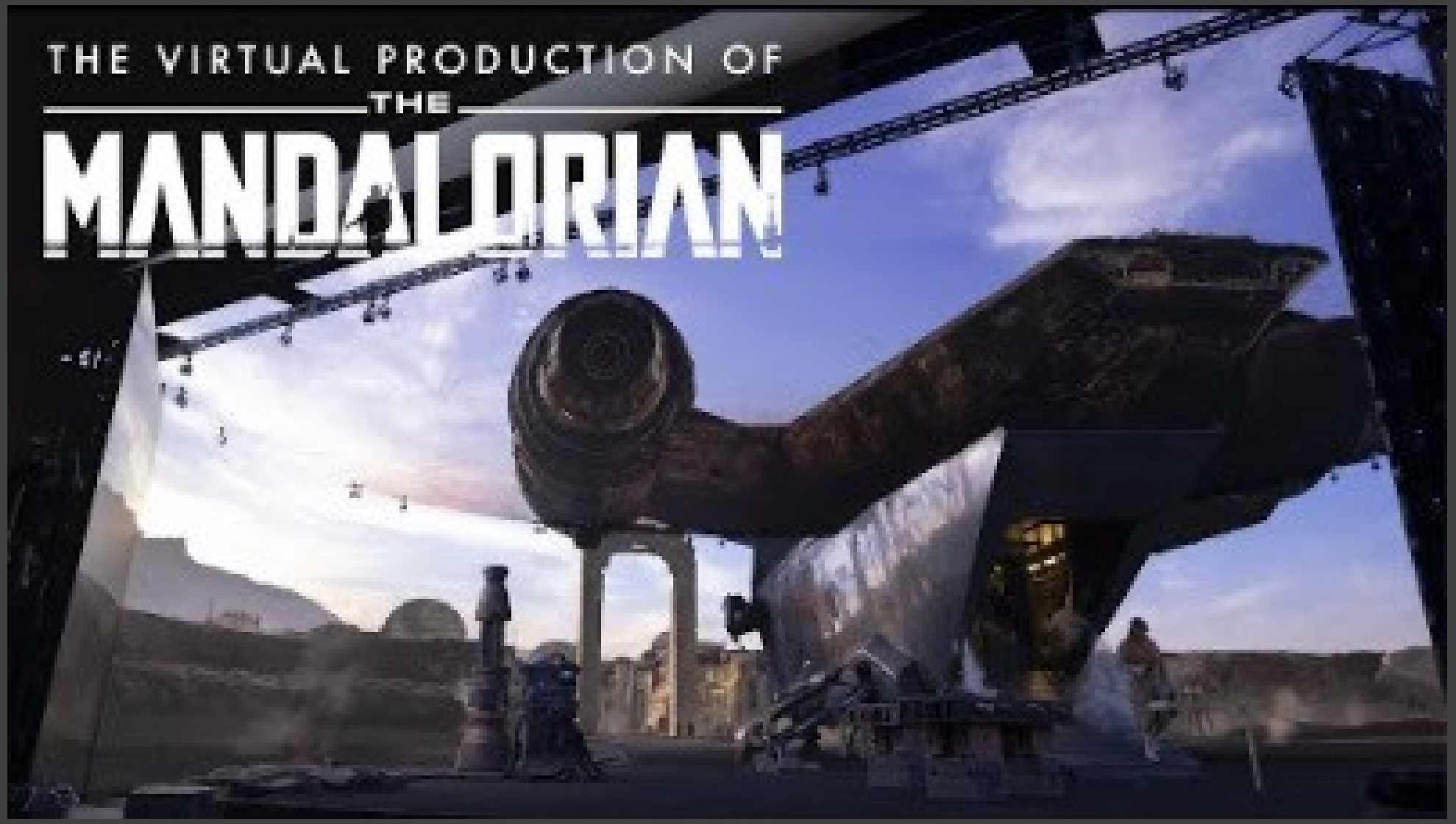
https://youtu.be/gUnxzVOs3rk?t=217

Extended definition example:

https://youtu.be/NbVUTx4fHuE?t=4

https://youtu.be/7TavVZMewpY?t=6

How it started and why?



https://www.youtube.com/watch?v=gUnxzVOs3rk

ACA
DEMY

Virtual Production vs green screen

Perspective change - tracking camera

- 3-D assets
- Camera tracking
- Photorealistic renders
- Real-time rendering

Industry Collaboration

Career Training in Collaboration with Industry

Identify skills requirements of the (studio) workforce

Address skills shortages

Up-skilling & re-skilling

New skillsets

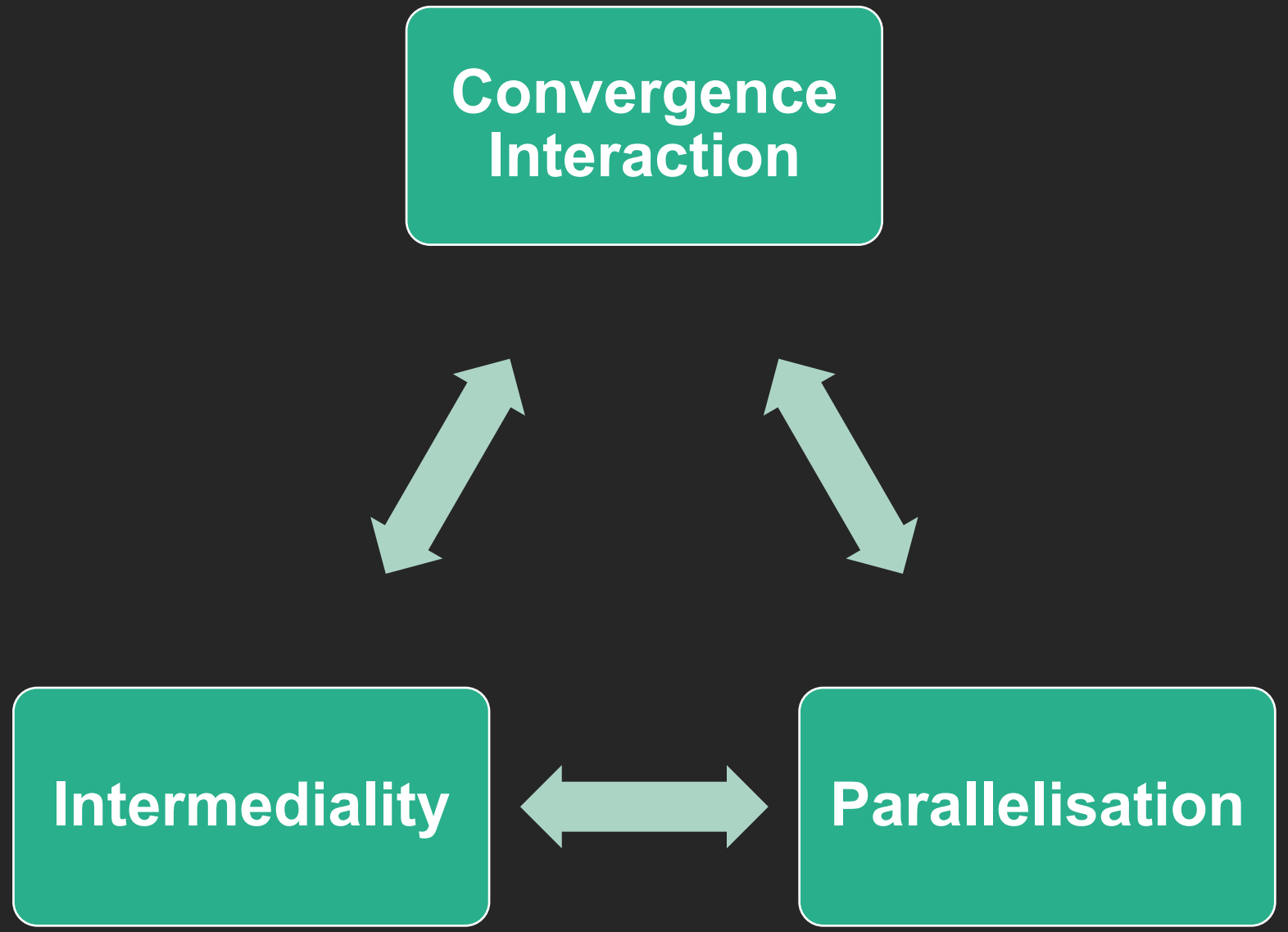
"There are a range of serious issues facing industry related to the lack of crew available (**skills shortage**) and the lack of experience and skills among crew who are available (**skills gap**)."

ScreenSkills Workforce Research in High-End TV Production 22/23

"The wider shortages have a noted impact on virtual production where skills in the new technologies are already in short supply."

Story Futures Virtual Production Skills Report 2023

VP Studio -
Complexity



Intermediality

Definition:

“The simulation or realisation of conventions and patterns of perception of one medium in another."

Christopher B. Balme (2004)
Intermediality: Rethinking the Relationship between Theatre and Media 1

Example: Lighting

Example: Lighting

Gaffer (Chief Lighting Technician)

Stage Gaffer

Virtual Gaffer

Impact on Studio Practice

Impact on Studio Practice

- Image Control:

colour accuracy between media

Impact on Studio Practice

- Image Control:
colour accuracy between media

- Limited Creative Range:
stage work vs. virtual asset

Impact on Studio Practice

- Image Control:

colour accuracy between media

- Limited Creative Range:

stage work vs. virtual asset

- Photorealism:

film vs. game

conventions of perception

Example:
Art Department

Source: Epic Games

Example:
Art Department

Production Designer

Art Director

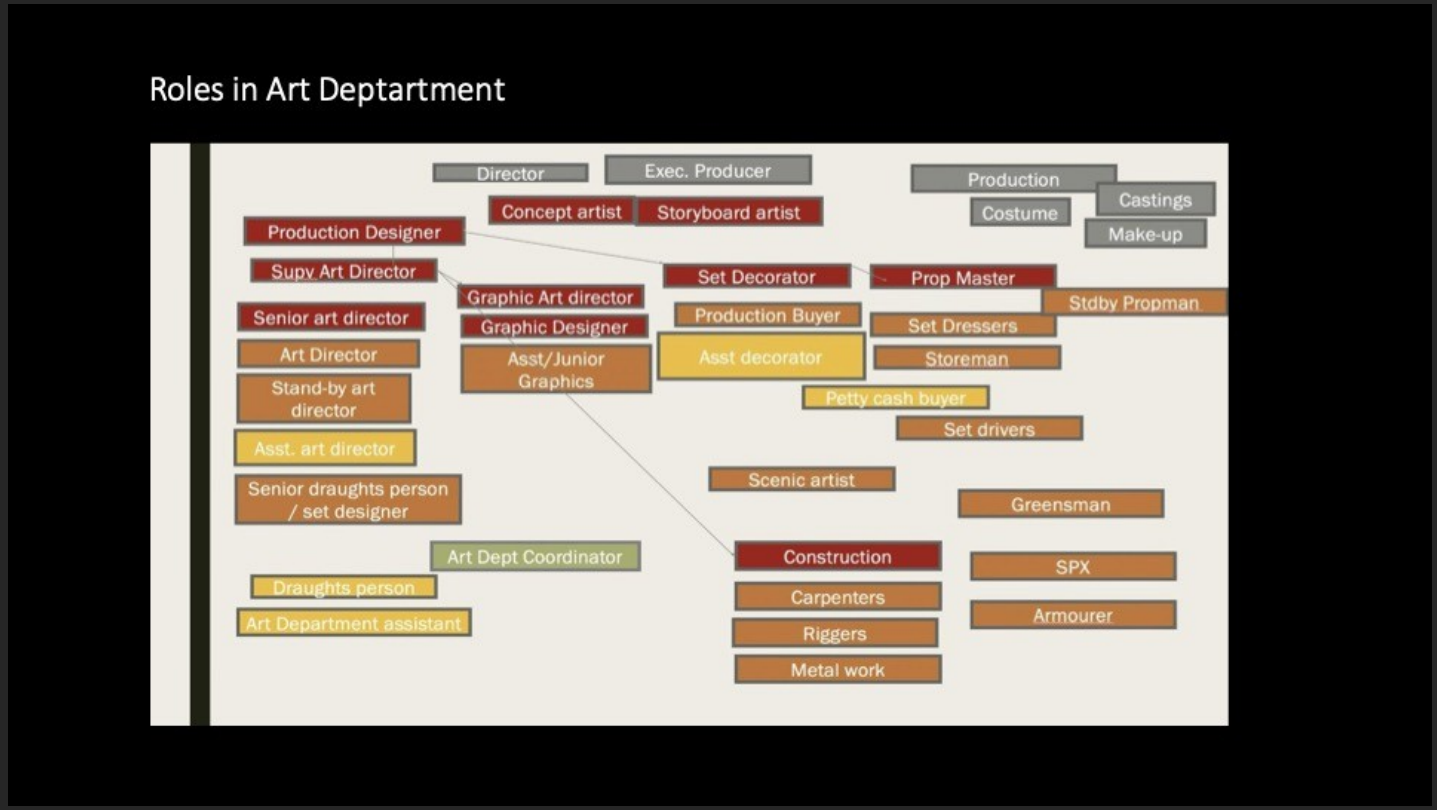
Virtual

Art Department

(VAD)

Source: Epic Games

Impact on Traditional Roles?

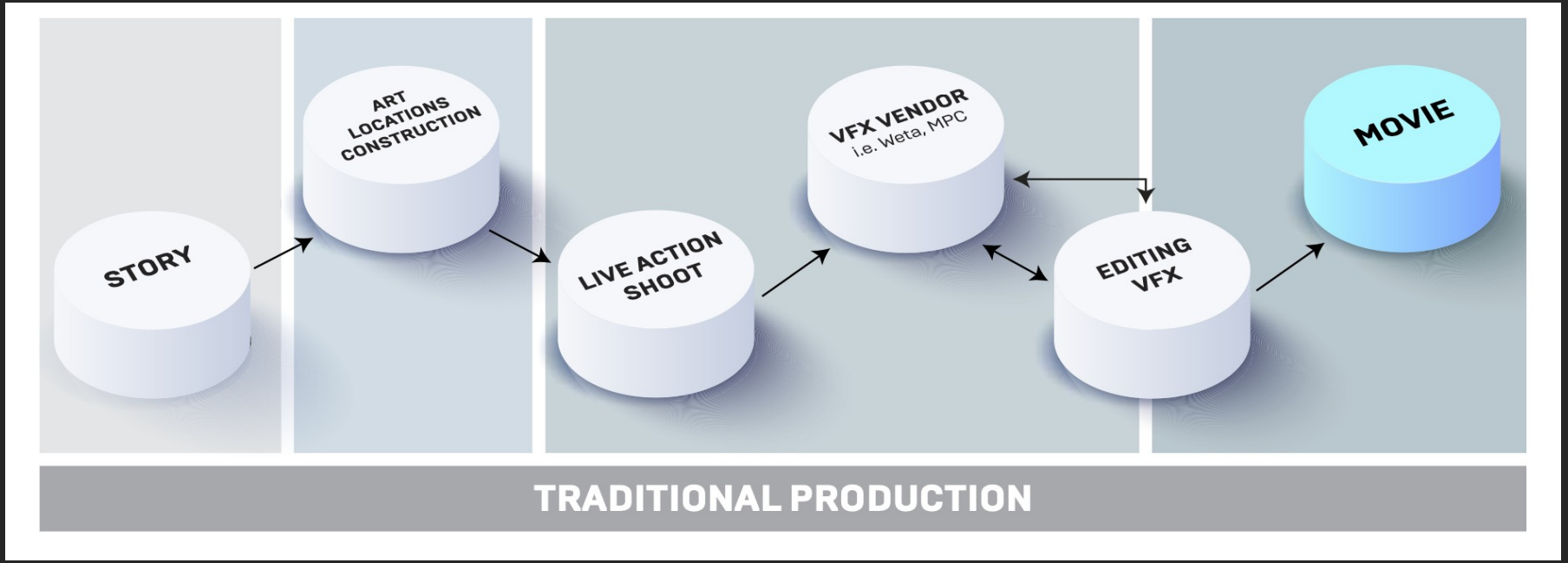


Parallelisation

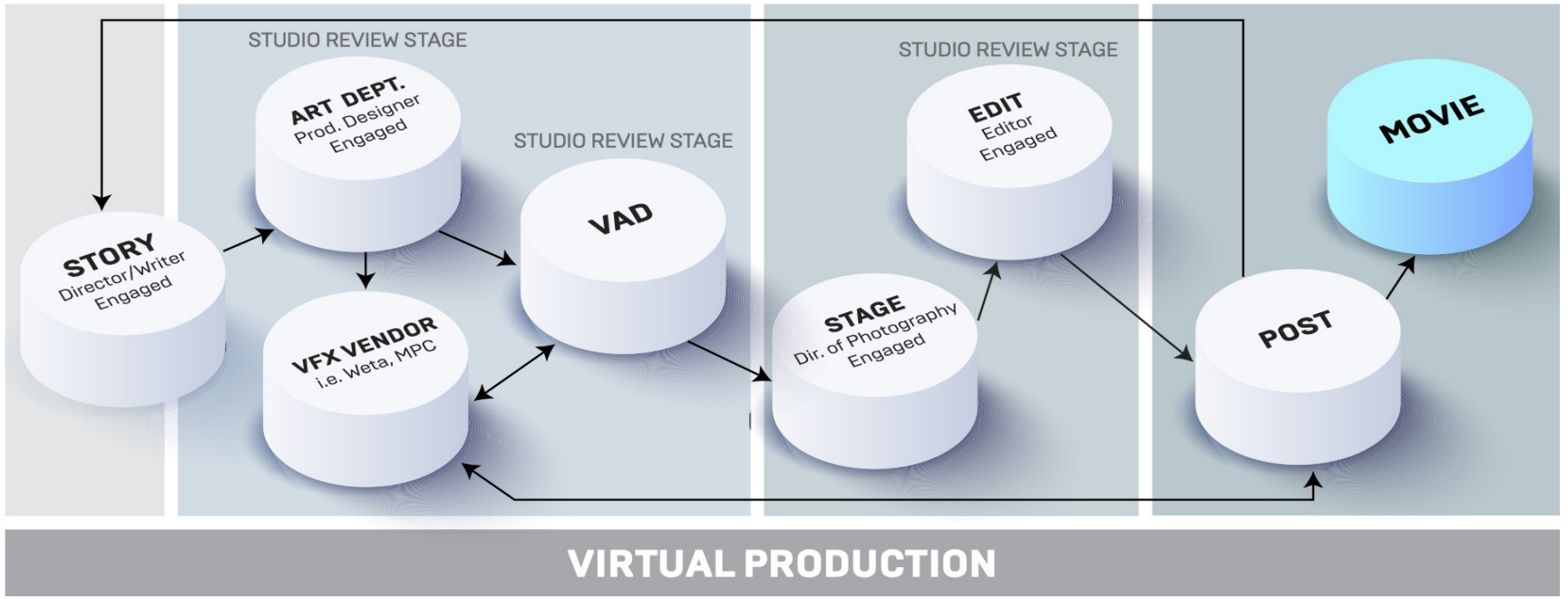
"Interactive collaboration between departments in a non-linear pipeline"

Ed Thomas
Head of RT & VP, Dimension Studio

Dev. Pre-prod. Production Post-prod.



Dev. Pre-prod. Production Post-prod.



Behind the scenes of 1899

https://www.youtube.com/watch?v=ZMynJCgJIQk

Hybrid Workforce

New roles

Existing Roles (Games/VFX)

Existing Roles (Film)

Hybrid Workforce

New roles	Existing Roles (Games/VFX)	Existing Roles (Film)
Unreal Engine operator	Real-time/Unreal artist	Director of Photography
Volume technician	Motion capture supervisor	Gaffer
LED engineer	Video engineers	Production designer
VP supervisor	Systems administrator	Colourist
System technical director	Lighting TD/virtual gaffer	Real-time compositor
VP visualisation supervisor	Virtual art department	DIT/Data manager

Developments & challenges

- Evolving technology and workflows
- Skills, training and the role of the studio
- Cost and accessibility of technology and computational requirements
- Sustainability and carbon footprint
- Roles and workflows at risk (construction crews, location work & crew)
- Virtual set and performance/acting
- Visual "quality", audience expectation and the "spectacle" of VP