



**Linus Technologies Ltd**

[www.linus.com](http://www.linus.com)

(ASX: LNU)

**26 July 2016**

**ASX Announcement**

## **Linus real-world use cases**

### **Highlights:**

- **Linus itemises a range of commercial real-world use cases for its software suite**
- **Updated presentation exploring and valuing use cases attached with this release**
- **Australian investor roadshow Wednesday 27 July — Tuesday 2 August**

**Melbourne, Australia:** Linus Technologies Limited (ASX: LNU, “the Company”) is pleased to announce that it has exhibited a range of real-world use cases of its groundbreaking software suite, the Linus Video Virtualization Engine™.

The stream of use cases will be available at <http://www.linus.com/category/case-studies/>.

“We understand that the technology behind the scenes of Linus can be hard to understand,” said Linus Technologies Chief Executive Officer Chris Richardson.

“These real-world examples exhibit and quantify some of the impact Linus could have on various market segments. The potential use cases stretch far beyond the Company’s initial goals of enabling internet TV ad personalisation while cutting the cost of storing, transcoding and delivering online video.”

An updated presentation for investors exploring some of these use cases is attached with this release and will also be available at [linus.com](http://linus.com).

Linus’ software could have the potential to transform the entire video value chain. These use cases are a few examples of many possible applications across the video value chain. The intent is for these use cases and the associated presentation to be a living document, that expands over time with more and more potential billion dollar disruptions.

The Company looks forward to updating investors on its progress toward commercialisation, and discussing the recent signing of its first commercial channel partner, on an Australian investor roadshow on the following dates:

**Wednesday 27 July:** Melbourne

**Thursday 28 July:** Sydney

**Friday 29 July:** Melbourne

**Monday 1 August:** Perth

**Tuesday 2 August:** Perth

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**About Linius Technologies Ltd**

Linus Technologies Ltd (ASX: LNU) is a developer of disruptive video management technology. Based in Melbourne, Australia, it seeks to apply its lead product — the Linus Video Virtualization Engine™ — throughout the global digital video value chain to cut costs and boost revenues for enterprise customers.

Linus is pursuing technology showcase partnerships in the transcoding, content distribution and video playout markets as it progresses toward commercialisation.

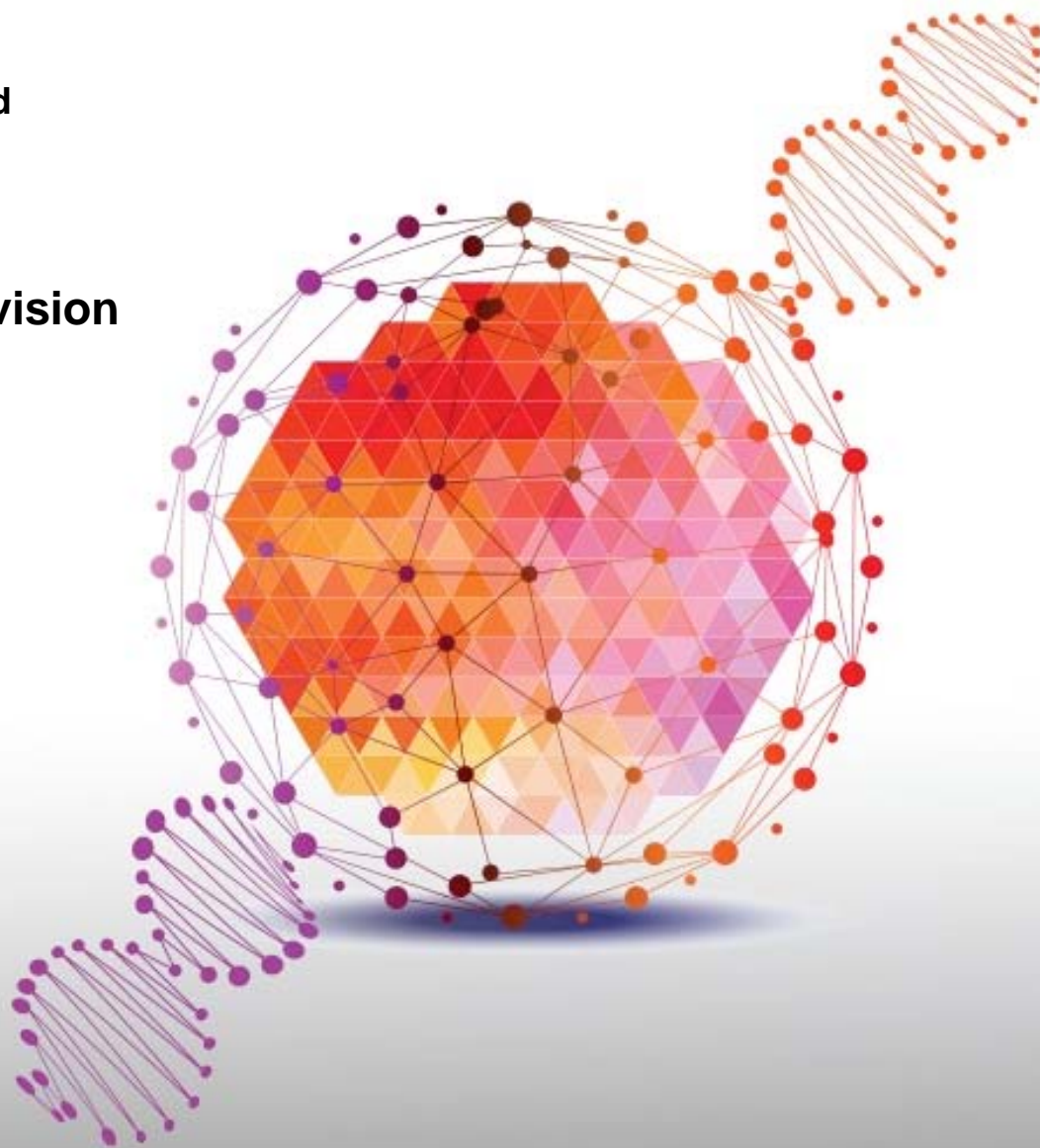
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**Linus Technologies Ltd**

**ASX: LNU**

**Transforming Television**



**OVERVIEW**

July 2016



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The use cases described in this presentation represent hypothetical future uses, based on Linius technology. These applications would require software to be written and integrated with Linius products.



By 2019, the world's Internet traffic will exceed 180 billion gigabytes per month. More than 80% of that traffic will be video. More than two thirds of it will go to mobile devices and to TVs.

Cisco, 2015





Linus is targeting the 'holy grail' of TV advertising — taking truly personalised ads from the Internet into your living room. Its innovative, deep technology is designed to dramatically simplify the manipulation and delivery of Internet video.

# Investor Highlights



**Transformative  
video technology  
set to disrupt  
several multibillion-  
dollar markets**



**A compelling offer  
to enterprise  
customers, offering  
significant potential  
to cut costs and  
boost revenue**



**First technology  
partner signed to  
showcase Linus'  
capabilities in  
personalised  
advertising**



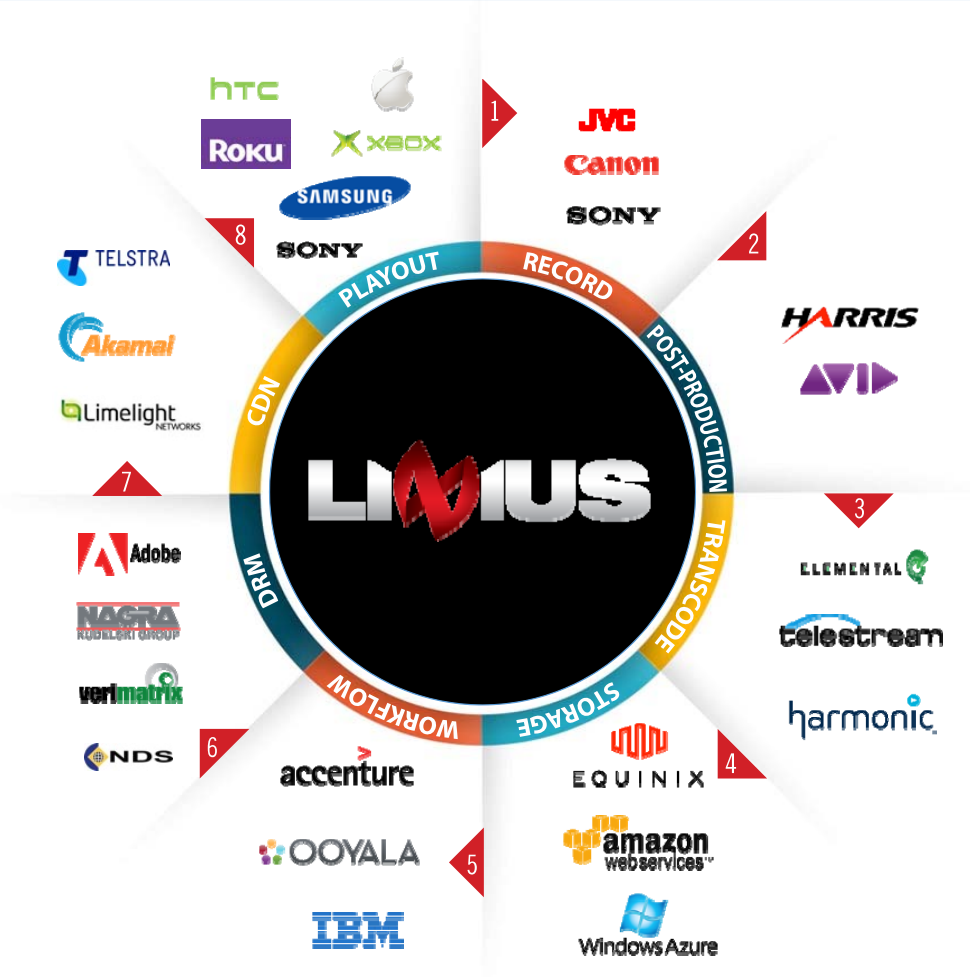
**Lean corporate  
structure with  
deeply experienced  
board and  
management team**

# The global video value chain



- The existing video workflow process is a legacy of pre-digital video days. Managing video assets is **a complex, labour-intensive and expensive ordeal** for infrastructure providers, content owners and broadcasters
- Instances of each video file multiply down the chain to support many different formats and devices. The internet was not designed to handle these large, inflexible files
- The video value chain was **worth more than US\$16.5 billion** in 2014<sup>1</sup> and is growing strongly, but is bloated with costs through the eight steps from recording to audience playout

1: Accustream Research, 2014





# Enhancing the DNA of internet video



Linius **removes complexity** from video workflow by managing data within the file at the source

Movie files:  
mp4, mkv, avi...



Extracts VDNA

Content Owner

API



**Builds vStub**  
**Inspects user device**

Tighter control of content  
Reach more customers  
Less transcoding  
Simpler reporting  
Easier auditing  
Files never leave network



Customer 1

Customer 2

Customer 3

Customer 4

Customer 5



Tablet



TV



Computer



STB



Cell Phone



The Linius technology extracts a tiny index file (a 'vStub') from a video asset. Users modifying the video through this vStub which contains the video DNA (VDNA) — leaving the vast bulk of the file (raw, binary data) untouched



Linius is designed to help users execute work that currently demands crunching several huge multi-gigabyte files by, instead, dealing with **only a few kilobytes of data**

# The Linius Impact



Integrating the Linius technology into key parts of the video workflow process should **dramatically cut labour and capital costs**



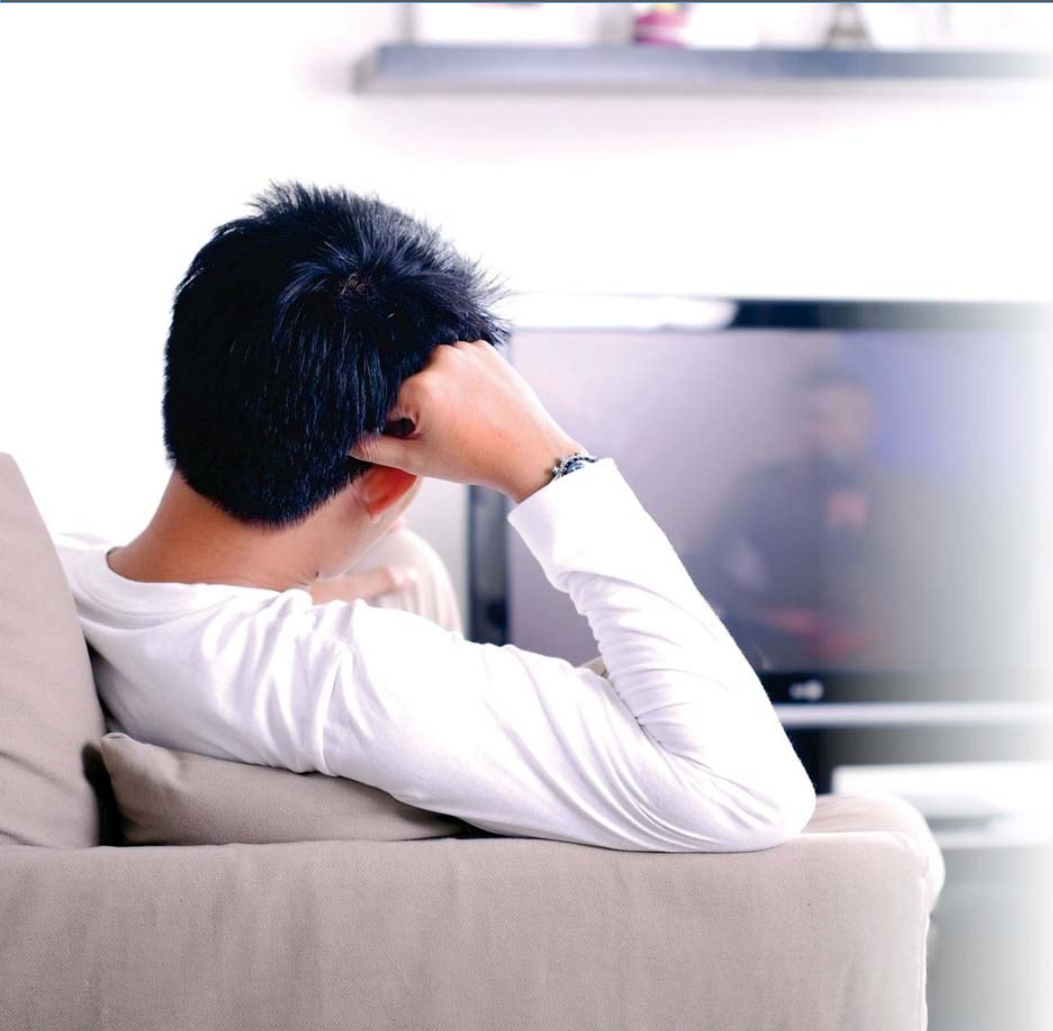
The Linius VVE™ (Video Virtualization Engine) offers the potential to **disrupt the entire digital video value chain**



Enabling new monetisation models by providing an **intelligent media format** for integration with blockchain, M2M, and IoT communication



# Personalised Ads for Cable TV



Uniquely targeted ads for the 10-foot experience

*Global TV ad spend: \$193 billion (Magna Global, 2015)*

- Integrating the Linus technology should let cable and internet TV operators serve viewers the same kind of **personalised advertising** experience that we currently expect online
- Customising a unique video stream for each audience member unlocks significant new **revenue opportunities** for content presenters
- Personalised, targeted advertising secures an average of **2.7x the revenue per ad** of non-targeted 'run of network' campaigns<sup>1</sup>

1: Network Advertising Initiative, 2010



# Empowering Content Delivery



***Video content delivery networks (CDNs) serve content to end-users through proxy servers in data centres distributed globally. CDNs push multiple copies of images, websites and videos closer to end-users, allowing quicker consumption***

Swarm networks transform a CDN's local POP or edge servers into localised indexing stations for video content.

These local indexing points have a Dropbox-style interface for customers, who could pay for a private virtual video cloud service.

Much like a blockchain methodology, this ability to peer and index requires no real storage and can identify the remaining file structure's location.

**Linus' technology helps CDNs to win the commoditisation battle**

*A US\$4.6 billion market in 2017, with video representing 81% of total value (Informa UK, 2012)*



# Disrupting the transcoding market



## One file to rule them all

A US\$1 billion industry (Frost & Sullivan, 2014)

*The direct digital-to-digital conversion of one encoding format to another...adapting content for playback on different devices*

Transcoding firms convert master copies of digital video files between formats and to various aspect ratios and quality levels. They create dozens of large versions of each video. One TV studio transcodes more than 300 versions of its titles to support all formats and devices (PWC, 2014). Linius removes the need to transcode MP4 files for different device formats.



# Adaptive eLearning

Imagine if training videos adapted to the learning capabilities of the viewer

US\$51.5 billion market



- Linius provides a new format of content that enables content frames to be edited and reorganised, enabling training and education material to adapt instantly
- Video could change for the user, based on business rules or dynamic inputs gleaned from the individual
- Wearable technologies coupled with machine to machine capability could drive dynamic response criteria from a user, and a uniquely tailored video could be assembled on the fly, to suit an individual's learning capabilities



# Video Surveillance

## How fast can you watch the film?

*US\$37.5 billion on surveillance alone (not including manpower)*



Less than 1% of surveillance video footage is seen by a human, and analysis of an event often takes hours or days.

Example: A white van travels around an embassy three times in a row, triggering an alert that is processed by technology looking at infield information.

Using computer modelling, the cameras around the perimeter are instructed to track and focus in on the object, detecting a license plate. An alert is sent to a human resource who cues the footage and starts analysis on this elevated flag.

Linius could sit in between the surveillance detection technologies (facial, movement, heat) and the person, and collate frame-based events out of each camera and package these events immediately after they have taken place — **greatly reducing the time to make decisions** on threats, and removing the need for humans to try to identify video from each feed on each camera and then make a decision.

Depending on the complexity and number of feeds of video, this could potentially cut the time to take action on a threat from hours or days to minutes, and potentially **shift dealing with a threat from post event to at event**.



# Transforming access to value in Gaming / eSports / Gambling



**Linus transforms access to valuable event structure in video for analysis and sports betting or performance**

*eSports users are currently worth \$3.53 in revenue per user. There are 400 million of them in 2016.*

- Ever heard of “League of Legends”? It’s a video game. The online viewership for its “championship” was about halfway between that of an NHL final and NBA final.
- Imagine the value to professional gamblers and gamers if you could instantly search, isolate or assemble scenes of in-game video, or sports events such as horse racing, to ascertain player, team or horse performance prior to betting on the outcome
- With the growth and traffic of eSports, being able to identify event structure and repurpose it quickly and simply brings immense value to the entire industry
- Linus uses a single video file for all edits as opposed to multiple files for every scene of edit. Linus enables machine-to-machine intelligence in assembling, editing and presenting relevant media





# The Connected Car



Imagine Holden as a new sports broadcaster.

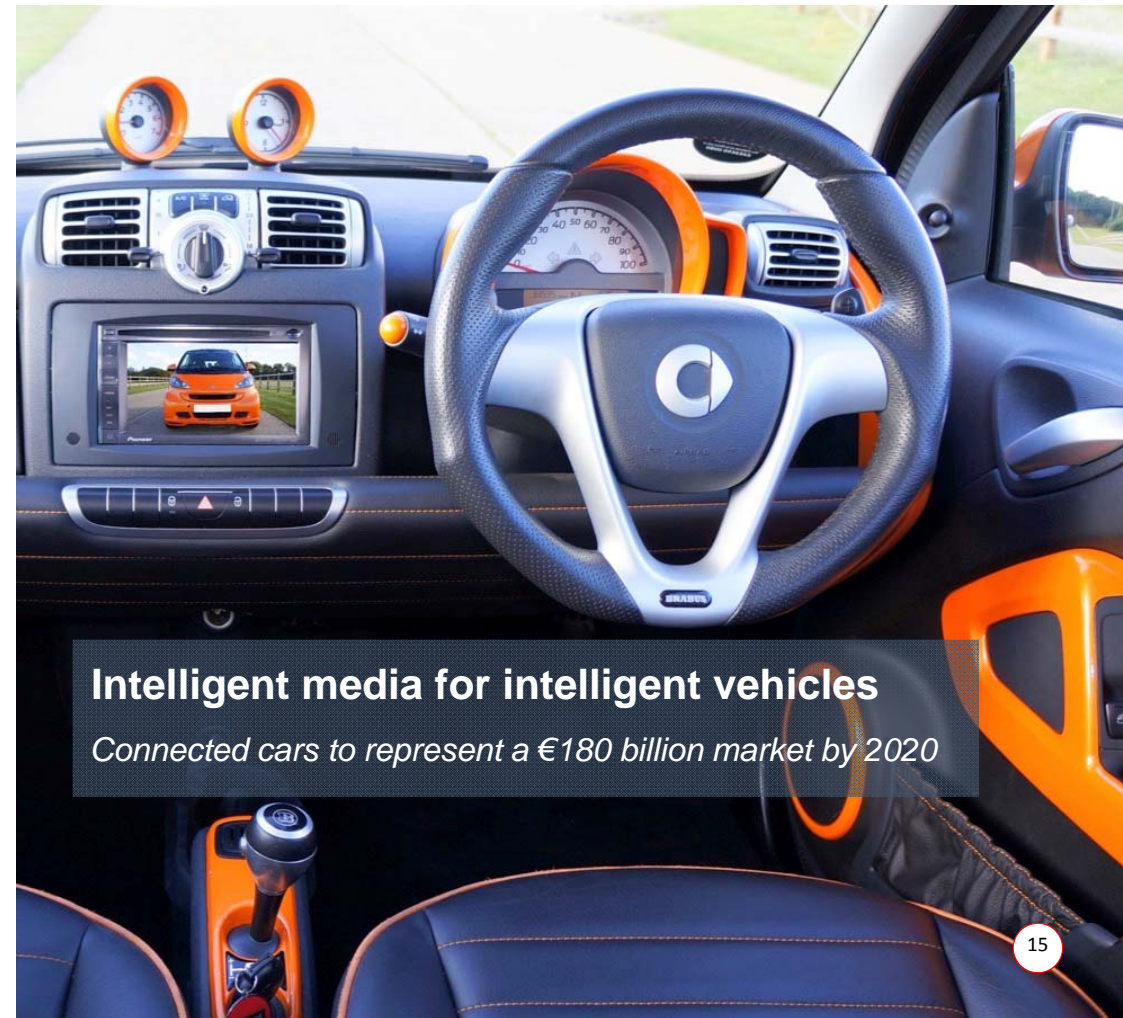
Linus enables car companies to become the new distribution gateway for intelligent media.

Imagine, as passengers, we want to watch last night's football game. The car navigation system says we have 17 minutes to get home.

Our favorite team is the New England Patriots, we have 3 favorite players and we're interested in game highlights (touchdowns, penalties, incidents etc).

Using these inputs, Linus enables machine-to-machine editing, and a piece of content suiting our needs is built on the fly and delivered to us to suit not only our tastes but to suit our trip time.

This is possible using Linus and metadata relating to event structure in scene of content.



**Intelligent media for intelligent vehicles**

*Connected cars to represent a €180 billion market by 2020*

# Virtual Reality



## Enabling controlled reality

*The Virtual Reality market is worth up to US\$80 billion*



Linus enables new ways to experience content using Virtual Reality.

“Controlled reality” is a method where the control of media content is filtered and produced for an individual.

Using standard Linus methods for content personalisation, the advent of VR technology paves a way for the next advancement in content personalisation by attaching it to new hardware.

Imagine if through your VR headset, news was 100% relevant to you and sporting events were produced in a manner that is relevant to you.

You could use gestures to search for an event within video footage. Elements inside the footage could be tagged using gestures.

Controlled reality — VR content, just for you.



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