

The ResMed Story

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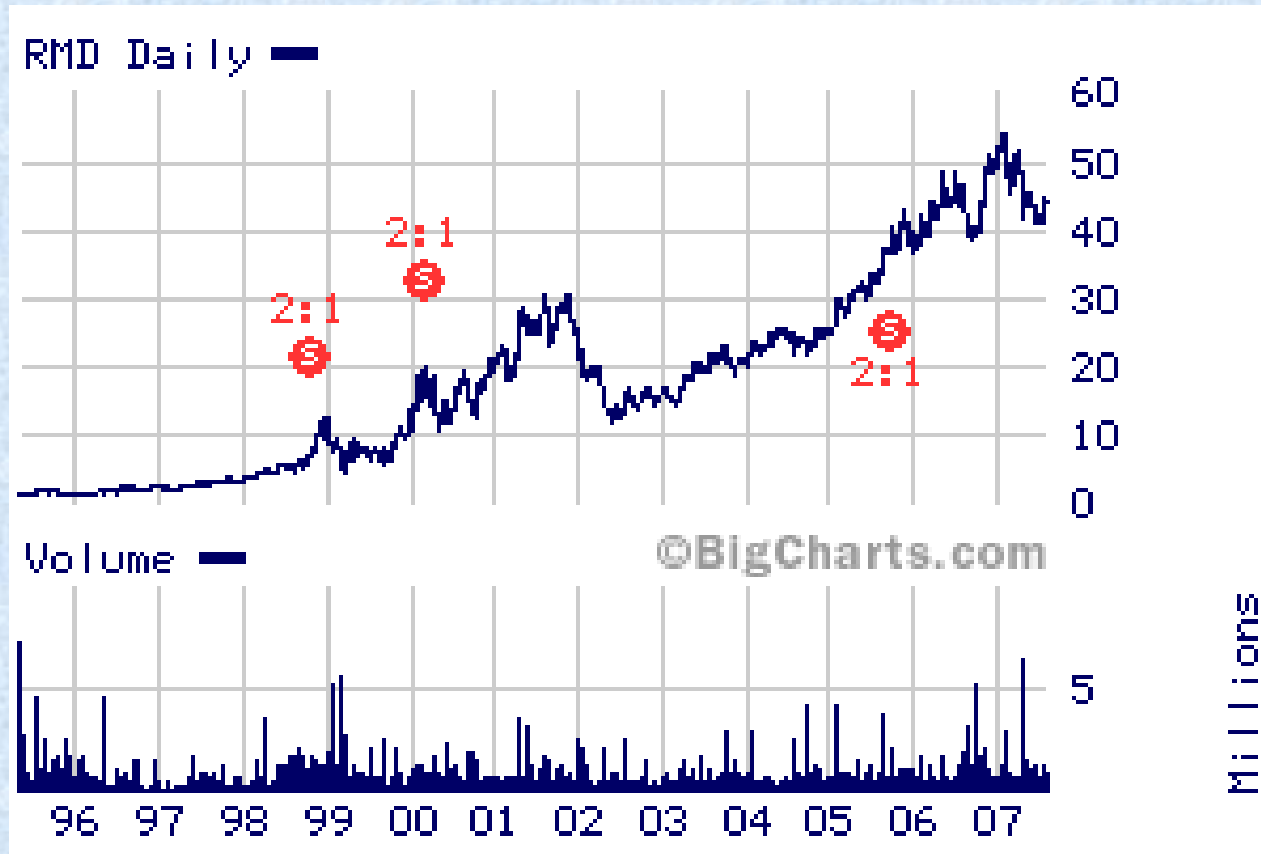
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Lecture Content

- ResMed Today - Overview
- Obstructive Sleep Apnea (OSA)
- CPAP Treatment
- ResMed – the Lift Off Period
- Lessons learnt

Share Price History



From A\$1 in 1992 to US\$30 in 2001 with three stock splits \approx x150 growth

ResMed – Global Operations

NYSE: RMD
ASX: RMD.AX

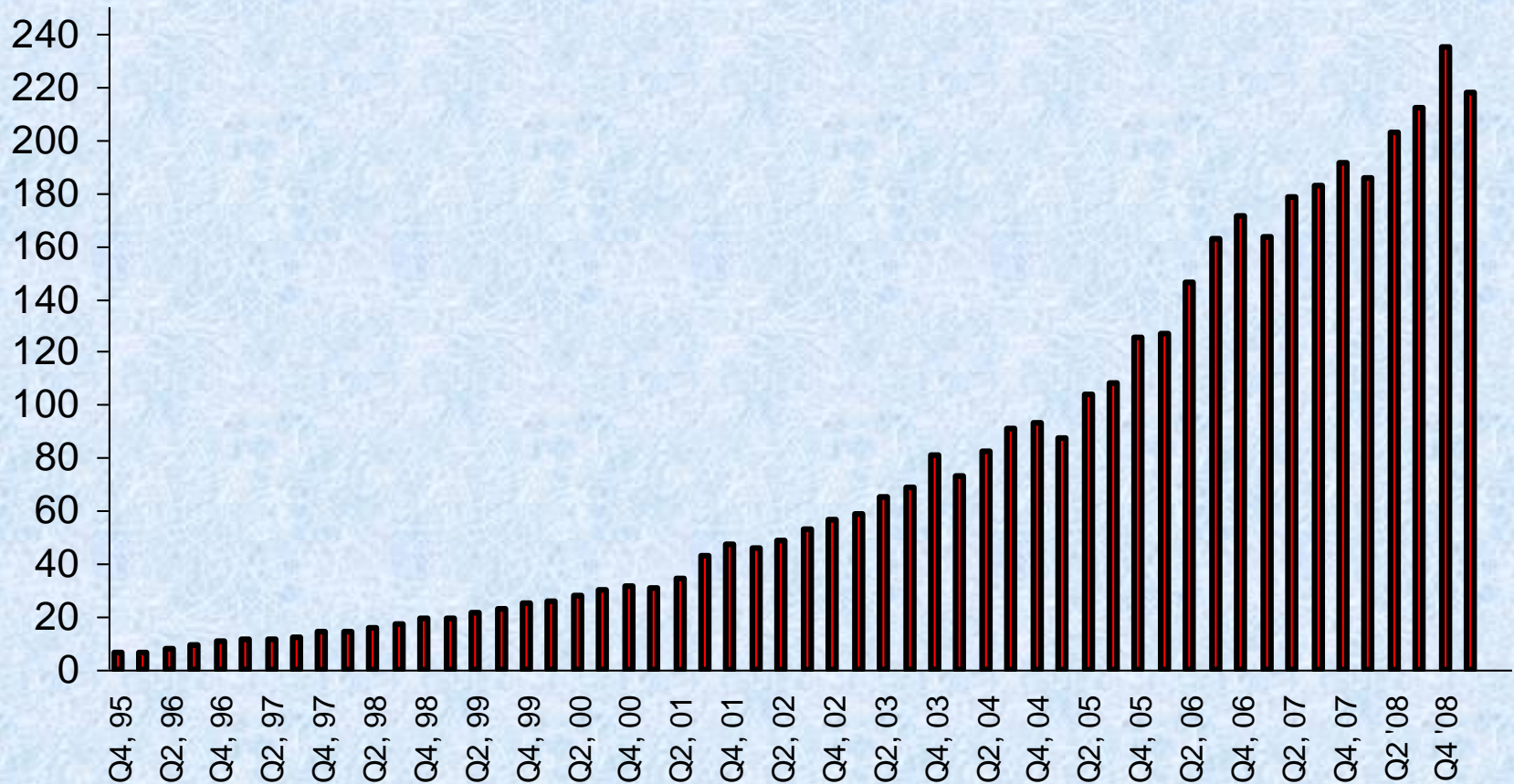
- Operate in 70 countries through wholly owned subsidiaries and independent distributors
- Excellent leadership and a team of 3,000 personnel in direct offices in 18 countries
- Continuing innovation
 - 1,900 patents, 1,000 design registrations granted and pending – June 2008
- Manufacturing in Australia, US and Europe

Slide courtesy of Dr Peter Farrell



ResMed – Quarterly Revenue

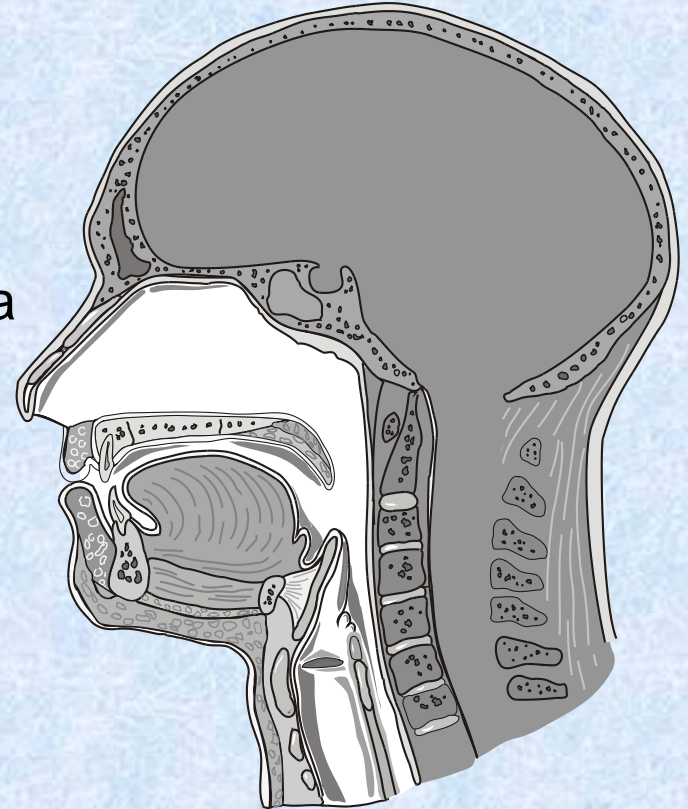
55th Consecutive Quarter of Revenue Growth



Obstructive Sleep Apnea (OSA)

Obstructive Sleep Apnea

- Muscle tone in the upper airway is lost
- Breathing in pulls airway shut
- This prevents air from entering lungs
- After some seconds the resulting hypoxia causes the patient to wake up & breathe
- On waking, heartrate may double and blood pressure increase by 50%
- This occurs cyclically – up to 400 times per night !



OSA Prevalence

- >4% of men
- Ditto post-menopausal women

Also:

- Partial obstruction (Sleep Disordered Breathing) is very common (20 – 30%)

OSA Sequelae

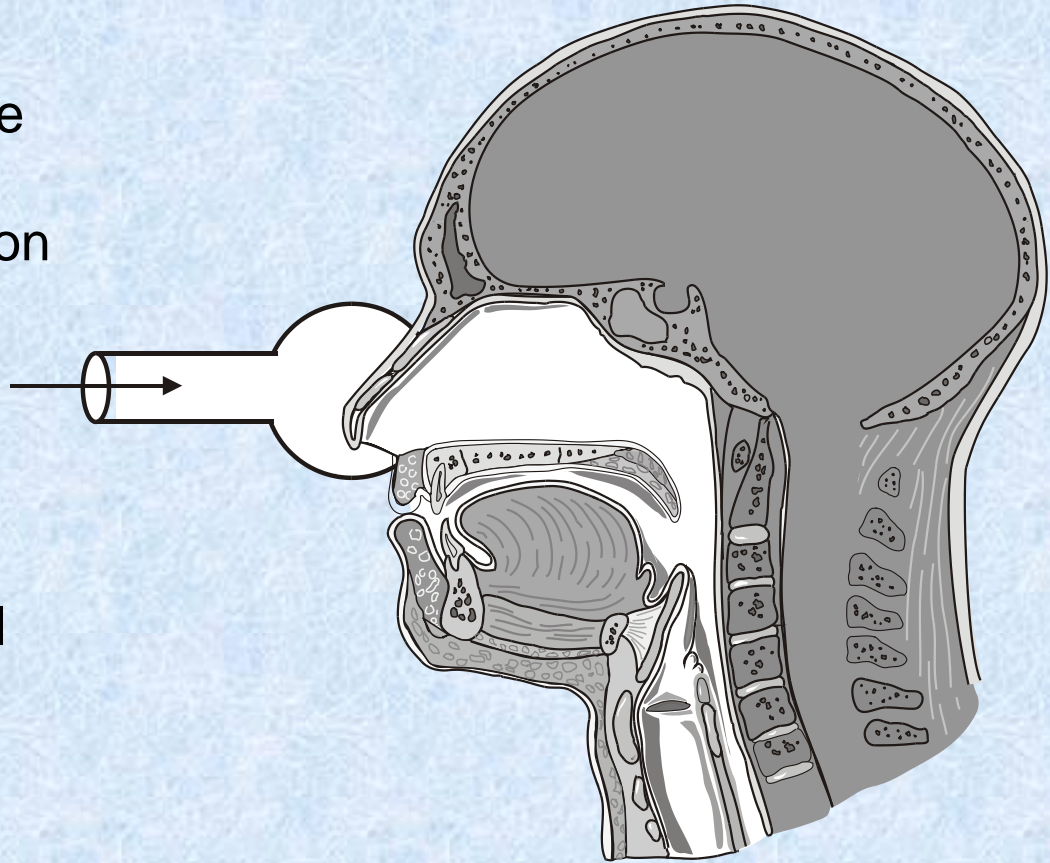
- **Chronic tiredness (up to 400 arousals/night)**
 - **Work difficulties**
 - **Traffic accidents (increase x8)**
 - **Sexual dysfunction**
- **High blood pressure**
 - **Stroke**
 - **Heart attack**
- **Exacerbated Type II diabetes**

OSA Treatment

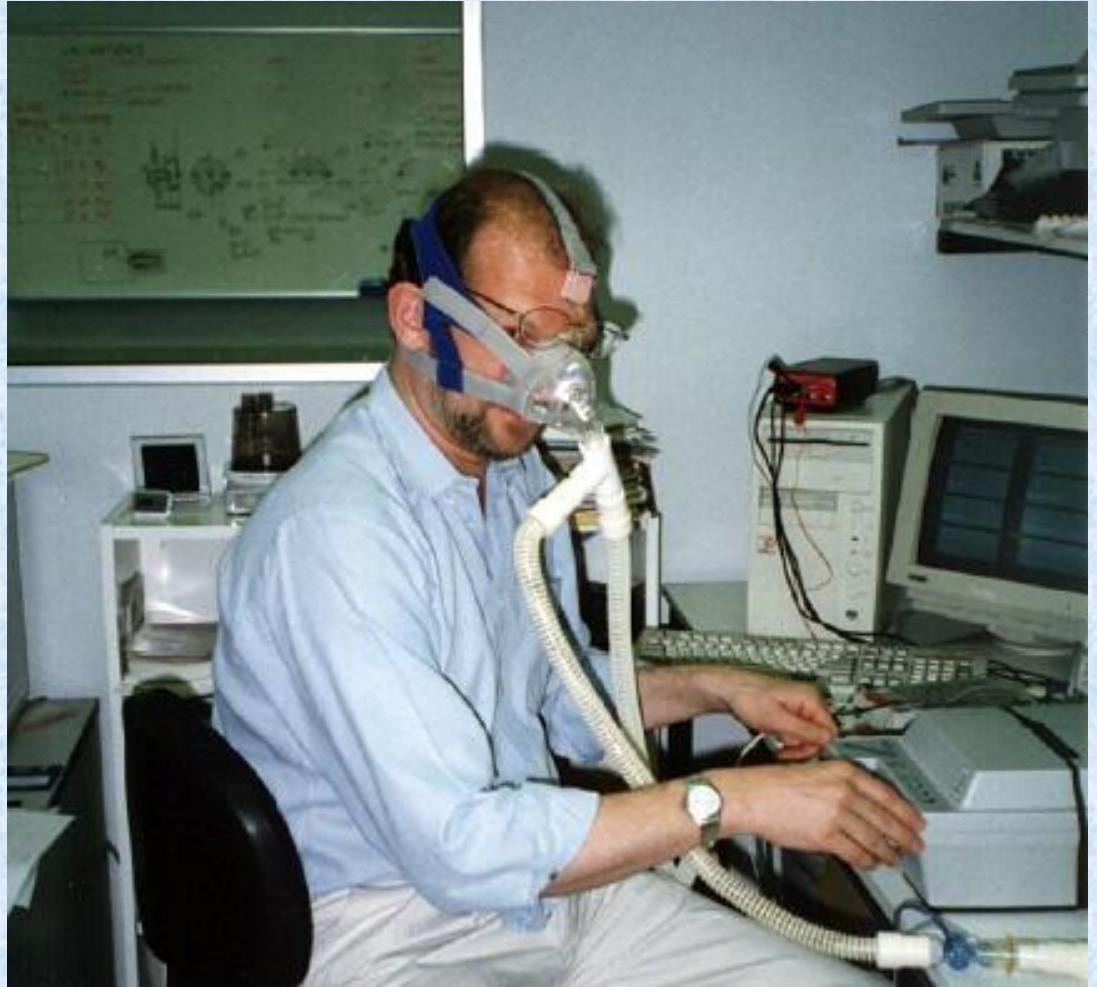
Treatment: Continuous Positive Airway Pressure (CPAP)

- Constant air pressure stops airway from collapsing on inspiration

- Delivered via a small nasal mask



CPAP Treatment



NB early experimental mask - the commercial ones only have one tube

Basic CPAP Technology

Component parts:

- Electric motor
- Fan
- Control circuitry

- Air hose

- Mask (innovation ++)

Plus more complex technology to treat related syndromes



Pre-History

OSA & CPAP Prehistory

- Historical: clinical observations that obese people have a tendency towards sleepiness & cognitive dysfunction: “Pickwickian” Syndrome
- 1965 OSA first described
- 1970 First Sleep Disorders Clinic set up at Stanford University
- 1979 Diagnostic Classifications defined
- 1979 Available treatment was a tracheotomy (hole in throat)
- 1980 First experimental CPAP treatment (Prof Colin Sullivan - RPAH)
- 1981 Lancet publication “Reversal of obstructive sleep apnoea by continuous positive airway pressure applied through the nares”, Sullivan CE, Issa FG, Berthon-Jones M, Eves L.

ResMed Prehistory

- Lack of interest from medical grants bodies
- Prof Sullivan patented the idea privately
- & approached Dr Peter Farrell (founding director of Baxter Centre for Medical Research, BCMR)
- Baxter purchased patent
- 1988: Baxter started marketing first commercial design
- 1989: BCMR wound up – Farrell organised management buy out
- AU\$M1.2 raised from Angel investors
- Baxter assets purchased for \$M0.5
- Total Staff: 8

ResMed Early History

- 1989: production of 50 units per month
- sales revenue for first year was \$1M (slight operating loss) 25% exported
- R&D grants \$150k & \$110k
- 1990: bubble mask patent (6x masks sold compared to generators)
- 1990: strategic relationship with Medtronic (who purchased equity of US\$1M)
- Medtronic granted 5 year exclusive license to distribute in USA, Benelux, France & Italy
- 1991: new design (brushless motor) integral carrying handle
- sales double those of previous year
- International Business achievement award (Austrade)

ResMed – Lift Off

- 1992: sales revenue doubled to A\$M4.36
- Medtronic not selling – agreement dissolved
- ResMed starts direct marketing in the US
- 1993: Austrade A\$M1 loan to assist US exports
- 1994: Rescare Inc registered in Delaware as joint US/AU company
- 1995: listed on NASDAQ
- Float raised US\$M25
- Company now numbered 74

1992 – 1996

Doing it Right

(or, at least, not doing it wrong !)

Fortune favours the prepared mind

Louis Pasteur

Bullet Points for Successful Startups

Management

- Experienced Senior Management Team
 - Business
 - Operations
 - Scientific/Technical
 - Clinical
 - Finance
- Involved & responsive at all levels

Product Development

- Designers with clinical experience
- Closely working with clinicians
- Fast evolution of prototypes
- In house design
- In house production
- Low risk development paths

Sales & Marketing - US

- CEO directly controlled sales staff
- Relationships cultivated with HMOs for bulk deals
- Close support of sales staff by designers
- High class training support

Sales & Marketing - Germany

- Cultivation of decision makers (hospital academics)
- Fast response of designers to local product requirements
- Training support
- Research support

Marketplace Legitimacy

- How do you establish legitimacy with potential customers ?
- If your company is:
 - New
 - Small
 - Foreign

The ResMed Solution

- Create a Medical Advisory Board
 - Composed of world leaders in Sleep Medicine
- Encourage research that produces conference & peer reviewed papers
- Provide first class training & education services

Manage Rapid Growth

Be prepared for:

- Rapid expansion of facilities
- Rapid expansion of staff
- Unexpected setbacks:
 - Intellectual property
 - Financial
 - Technical
 - Regulatory
 - Unknown !

Intellectual Property

Intellectual Property

The purpose of patents:

- To prevent others manufacturing your designs
- To allow you to manufacture your designs
- To ensure competition takes place in the marketplace rather than the courts

IP – Strategy

- Patent extensively
- Patent early
- Be prepared to fight
- Have sufficient funds to neutralise challenges

IP – a Salutory Lesson #1

- 1992: ResMed took court action in Australia against Respironics – and won
- 1994: Respironics appealed against the ruling and was successful (-\$\$\$)
- Legal wrangling over several patents continued until 2003

IP – a Salutory Lesson #2

1993 (priority 1987): a simple patent claim for a “Delay Timer” for use in CPAP machines proved to be a key delineator between ResMed and its competitors in the marketplace

Finally The Big Question

Could we have predicted the scale of future success in 1992 ?

- ✓ Experienced management
- ✓ Production had commenced
- ✓ R&D support existed for new product creation
- ✓ Regulatory approval
- ✓ Intellectual property portfolio
- ✓ Exports
- X Market Size Prediction = Small**

Some clinicians still viewed OSA as a rare phenomenon !

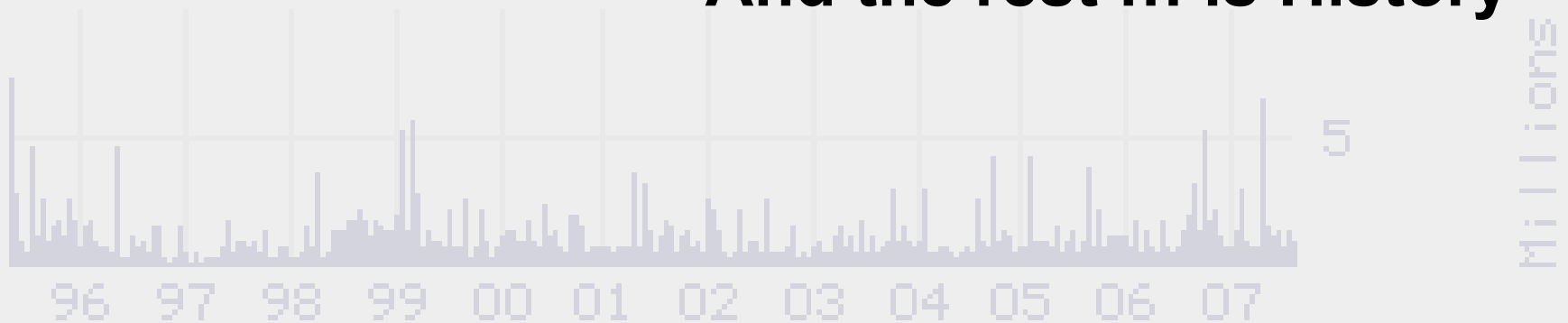
RMD Daily

But, as OSA became increasingly appreciated as a major problem, markets increased ...and increased



Volume

And the rest ... is History



~ *fin* ~

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